

N/Réf :

Guyancourt, le juin 2014

INFORMATION DE SECURITE

Cher Utilisateur,

Nous portons à votre connaissance l'information suivante concernant les kits HLA SSP Olerup ci-dessous :

Référence	Désignation	N°de lot
101.401-12u	Kit HLA A low	44V
101.401-48u	Kit HLA A low	44V
101.403-48u	Kit HLA A low screening	28V
101.702-24u	Kit Combi ABC	63V
101.702-06u	Kit Combi ABC	64S
101.702-24u	Kit Combi ABC	64S
101.701-24u	Kit Combi ABDR	63S
101.708-24u	Kit Combi ABDRDQ	70S

Le mélange d'amorces contenu dans le puits n°19 locus A (puits n°18 pour le kit Combi ABDRDQ) est négatif pour l'allèle A*74 :07. De ce fait, le profil d'interprétation pour l'allèle A*74 :07 est identique aux profils d'interprétation des allèles A*32 :01 :14, A*32 :03 et A*32 :38.

Nous vous recommandons de ré analyser à l'aide des notices révisées ci-jointes, le locus A des patients incluant les allèles A*32 :01 :14, A*32 :03 et A*32 :38 pour les numéros de lots indiqués dans le tableau ci-dessus. Ces notices révisées doivent être utilisées pour vos futures interprétations.

Par ailleurs, nous vous informons qu'une amélioration de ce mélange d'amorces est prévue lors de la fabrication du prochain lot.

Cette action corrective a été mise en place suite à l'observation d'un utilisateur.

L'ANSM a été informée de cette communication.

Nous restons à votre disposition pour tout complément d'information et vous prions de croire, cher Utilisateur, en l'assurance de nos sincères salutations.

Pascal HERVE
Directeur – Responsable Réactovigilance

PJ : Notices

101.702.24/06 – including *Taq* pol., IFU-01
 101.702.24u/06u – without *Taq* pol., IFU-02

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Lot No.: **64S**

Lot-specific information

Olerup SSP[®] HLA-A-B-C SSP Combi Tray

Product number:	101.702-24/06 – including <i>Taq</i> pol. 101.702-24u/06u – without <i>Taq</i> pol.
Lot number:	64S
Expiry date:	2016-March-01
Number of tests:	24 tests – Product No. 101.702-24/24u 6 tests – Product No. 101.702-06/06u
Number of wells per test:	95 +1
Storage - pre-aliquoted primers:	dark at -20°C
- PCR Master Mix:	-20°C
- Adhesive PCR seals	RT
- Product Insert	RT

This Product Description is only valid for Lot No. 64S.

CHANGES COMPARED TO THE PREVIOUS *OLERUP SSP*[®] HLA-A-B-C SSP COMBI TRAY LOT (01S)

The **HLA-A low resolution** specificity and interpretation tables have been updated for the HLA-A alleles described since the previous *Olerup SSP*[®] HLA-A-B-C SSP Combi Tray lot was made (**Lot No. 01S**).

The primers of the wells detailed below have been exchanged, added or modified compared to the previous lot.

Well	5'-primer	3'-primer	rationale
5	-	Exchanged	3'-primer and control primer pair exchanged for improved resolution of HLA-specific PCR product and positive control.
12	-	Added	3'-primer added for the A*34:11 allele.
14	-	Exchanged	3'-primer exchanged for resolution of the A*29:48 allele.
15	Added	-	5'-primer added for the A*30:72 allele.
18	Added	-	5'-primer added for the A*33:51 allele.
19	New	New	New primer pair for the A*74 alleles.
21	Added	Added	Primer pair added for the A*23:57 allele.

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 101.702.24u/06u – without *Taq* pol., IFU-02

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Lot No.: **64S**

Lot-specific information

The **HLA-B low resolution** specificity and interpretation tables have been updated for the HLA-B alleles described since the previous *Olerup SSP*[®] HLA-A-B-C SSP Combi Tray lot was made (**Lot No. 01S**).

The primers of the wells detailed below have been exchanged, added or modified compared to the previous lot.

Well	5'-primer	3'-primer	rationale
27	-	Added	3'-primer added for the B*13:12:02 allele.
32	-	Added	3'-primer added for the B*42:19 allele.
42	-	Added	3'-primer added for the B*35:222 allele.
53	-	Exchange	3'-primer exchange for the B*44:03:17 allele to decrease oligomer formation.
66	-	Added	3'-primer added for the B*57:62 allele.

The **HLA-C low resolution** specificity and interpretation tables have been updated for the HLA-DRB alleles described since the previous *Olerup SSP*[®] HLA-A-B-C SSP Combi Tray lot was made (**Lot No. 01S**).

The HLA-C low primer set is unchanged compared to the previous lot.

Changes in revision R01 compared to R00:

1. Primer mix 43 does not amplify the B*44:10 allele. This has been corrected in the Specificity and Interpretation Tables.

Change in revision R02 compared to R01:

1. Primer mix 19 does not amplify the A*74:07 allele, and primer mix 11 does not amplify the A*31:03 and A*66:15 alleles. This has been corrected in the Specificity and Interpretation tables.

The A*32:01:14, 32:03, 32:38 and the A*74:07 alleles give rise to identical amplification patterns with this lot of the HLA-A low resolution primer set. These alleles can be separated by the respective high resolution primer sets.

101.702.24/06– including *Taq* pol., IFU-01
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Lot-specific information

Well 96 contains Negative Control primer pairs, that will amplify more than 95% of the *Olerup* SSP[®] HLA Class I, DRB, DQB1 and DPB1 amplicons as well as the amplicons generated by control primer pairs.

PCR product sizes range from 75 to 430 base pairs.

The PCR product generated by the control primer pair is 430 base pairs.

Length of PCR product	105	200	105	80	75	80
5'-primer¹	164	340	440	45	45	43
	⁵ -CAC ³	⁵ -Agg ³	⁵ -TTA ³	⁵ -Tg g ³	⁵ -Tgg ³	⁵ -Tgg ³
3'-primer²	231	2nd I	507	59	58	57
	⁵ -TgC ³	⁵ -AAA ³	⁵ -TTg ³	⁵ -CTC ³	⁵ -ggC ³	⁵ -CTC ³
A*	+	+	+			
B*	+	+	+			
C*	+	+	+			
DRB1				+	+	
DRB3				+	+	
DRB5				+		
DQB1					+	
DPB1						+

¹The nucleotide position for HLA class I genes and the codon for HLA class II genes, in the 2nd or 3rd exon, matching the specificity-determining 3'-end of the primer is given. Nucleotide and codon numbering as on the www.ebi.ac.uk/imgt/hla web site. The sequence of the 3 terminal nucleotides of the primer is given.

²The nucleotide position for HLA class I genes and the codon for HLA class II genes, in the 2nd or 3rd exon or the 2nd intron, matching the specificity-determining 3'-end of the primer is given in the anti-sense direction. Nucleotide and codon numbering as on the www.ebi.ac.uk/imgt/hla web site. The sequence of the 3 terminal nucleotides of the primer is given.

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Lot No.: **64S**

Lot-specific information

PRODUCT DESCRIPTION

HLA-A-B-C SSP Combi Tray

CONTENT

The primer set contains 5'- and 3'-primers for grouping the HLA-A*01:01 to A*80:03 alleles into the corresponding serological groups A1 to A80.

The primer set contains 5'- and 3'-primers for grouping the B*07:02 to B*83:01 alleles into the corresponding serological groups B7 to B81 as well as primer pairs for recognizing the Bw4 and Bw6 sequence motifs.

The primer set contains 5'- and 3'-primers for grouping the HLA-C*01:02 to C*18:06 alleles into the groups C*01:xx to C*18:xx.

PLATE LAYOUT

Each test consists of 96 PCR reactions in a 96 well PCR plate.

1	2	3	4	5	6	7	8
9	10	11	12	13	14	15	16
17	18	19	20	21	22	23	24
25	26	27	28	29	30	31	32
33	34	35	36	37	38	39	40
41	42	43	44	45	46	47	48
49	50	51	52	53	54	55	56
57	58	59	60	61	62	63	64
65	66	67	68	69	70	71	72
73	74	75	76	77	78	79	80
81	82	83	84	85	86	87	88
89	90	91	92	93	94	95	ctrl

Wells 1 to 24 – HLA-A low resolution primers.

Wells 25 to 72 – HLA-B low resolution primers.

Wells 73 to 95 – HLA-C low resolution primers.

Well 96 – Negative Control.

The 96 well PCR plate is marked with 'A-B-C' in silver/gray ink.

Well No. 1 is marked with the Lot No. '64S'.

A faint row of numbers is seen between wells 1 and 2 or wells 7 and 8 of the PCR trays. These stem from the manufacture of the trays, and should be disregarded.

The PCR plates are covered with a PCR-compatible foil.

INTERPRETATION

Only HLA-A alleles will be amplified by the 24 wells of the HLA-A low resolution primer set, **wells 1 to 24**, except that primer mix 4 will amplify the C*03:174, C*08:69 and C*16:56 alleles, primer mix 5 will amplify the C*04:01:03 allele, primer mix 6 will amplify the B*18:27 allele and primer mix 9 will amplify the B*07:81, B*08:52, B*18:67, B*38:41, B*53:05 and B*53:16 alleles.

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Lot-specific information

Thus, the interpretation of HLA-A low resolution is only influenced by these seven HLA-B alleles and three HLA-C alleles and not by other HLA Class I genes.

Only HLA-B alleles will be amplified by the 48 wells of the HLA-B low resolution, primer set, **wells 25 to 72**, except that the C*02:23 and C*04:77 alleles will be amplified by primer mix 25, the C*03:05, C*03:25, C*03:27, C*03:143 and C*03:167 alleles will be amplified by primer mix 27, the C*01:30 and C*12:87 alleles will be amplified by primer mix 28, the A*23:31, A*24:106, C*07:231 and C*16:10 alleles will be amplified by primer mix 30, the C*01:73 allele will be amplified by primer mixes 31, 50 and 55, the C*07:02:30 and C*08:16:02 alleles will be amplified by primer mix 31, the C*07:46 allele will be amplified by primer mix 32, the A*24:174 allele will be amplified by primer mix 37, the C*03:102 allele will be amplified by primer mixes 41 and 65, the C*03:179 allele will be amplified by primer mix 43, the C*07:302 allele will be amplified by primer mix 44, the C*15:51 allele will be amplified by primer mix 45, the C*03:129 and C*17:16 alleles will be amplified by primer mix 49, the C*15:25 allele will be amplified by primer mix 53, the C*15:39 allele will be amplified by primer mix 55, the C*15:02:04 allele will be amplified by primer mix 64, the C*03:19 allele will be amplified by primer mix 65, the C*06:72 allele will be amplified by primer mix 66, the C*02:06 and 02:47 alleles will be weakly amplified by primer mix 67 and the A*26:68, A*68:56, C*02:56, C*06:20 and C*12:50 alleles will be amplified by primer mix 69.

Thus, the interpretation of HLA-B low resolution typings is only influenced by these alleles and not by other alleles of other HLA class I genes.

Only HLA-C alleles will be amplified by the HLA-C low resolution primer set, **wells 73 to 95**, except that primer mix 73 will amplify the B*39:76 and B*54:18 alleles, primer mix 85 will amplify the B*67:02, primer mix 87 will amplify the B*35:222, primer mix 88 will amplify the A*30:62 allele, primer mix 92 will amplify the B*14:03 allele and primer mix 95 will amplify the A*24:96, A*24:106, A*24:174, B*08:16 and B*46:25 alleles. Thus, the interpretation of HLA-C low resolution typings is only influenced by these alleles and not by other HLA class I genes.

UNIQUELY IDENTIFIED ALLELES

All the HLA-A alleles, i.e. **A*01:01 to A*80:03**, recognized by the HLA Nomenclature Committee in April 2013¹ will be amplified by the primers in the HLA-A low resolution primer set, **wells 1 to 24**. The HLA-A alleles will be grouped into their corresponding serological specificities².

All the HLA-B alleles, i.e. **B*07:02 to B*83:01**, recognized by the HLA Nomenclature Committee in April 2013¹ will be amplified by the primers in the HLA-B low resolution primer set, **wells 25 to 72**. The HLA-B alleles will be grouped into their corresponding serological specificities³.

All the HLA-C alleles, i.e. **C*01:02 to C*18:06**, recognized by the HLA Nomenclature Committee in April 2013¹ will be amplified by the primers in the HLA-C low resolution primer set, **wells 73 to 95**. The HLA-C alleles will be grouped into the C*01:xx to C*18:xx groups⁴.

¹HLA-A, HLA-B and HLA-C alleles listed on the IMGT/HLA web page 2013-April-17, release 3.12.0, www.ebi.ac.uk/imgt/hla.

²The A*03:88 and the A*11:130 alleles will give rise to identical amplifications patterns. These alleles can be separated by the respective high resolution SSP primer sets.

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Lot No.: 64S**Lot-specific information**

The A*03:152 and the A*24:92 alleles will give rise to identical amplification patterns. These alleles can be separated by the respective high resolution SSP primer sets.

The A*23:14:01-23:14:02 and the A*24:24 and 24:71 alleles will give rise to identical amplification patterns. These alleles can be separated by the respective high resolution SSP primer sets.

The A*32:01:14, 32:03, 32:38 and the A*74:07 alleles give rise to identical amplification patterns. These alleles can be separated by the respective high resolution primer sets.

The 24:14-24:15, 24:51-24:53, 24:57, 24:64, 24:94, 24:114, 24:138, 24:188, 24:222N, 24:228 and the C*04:01:03 alleles may be distinguished by the different sizes of the specific PCR products generated by primer mix 5.

³The B*08:26, 08:50, 08:62, 08:85, 08:94 and the B*42:07 alleles give rise to identical amplification patterns with the HLA-B low resolution primer set. These alleles can be separated by the respective high resolution primer sets.

The B*13:21, 13:35 and 13:59 and the B*44:135 and 44:158 alleles give rise to identical amplification patterns with the HLA-B low resolution primer set. These alleles can be separated by the respective high resolution primer sets.

The B*14:08 and the B*39:25N, 39:30, 39:32-39:34, 39:47, 39:50, 39:74 and 39:82 alleles give rise to identical amplification patterns with the HLA-B low resolution primer set. These alleles can be separated by the respective high resolution primer sets.

The B*18:29 and 18:72 and the B*35:32:01-35:32:02, 35:37, 35:53N, 35:64:01-35:64:02, 35:68:01-35:68:02, 35:99, 35:118-35:119 and 35:174 alleles give rise to identical amplification patterns with the HLA-B low resolution primer set. These alleles can be separated by the respective high resolution primer sets.

The B*41:09 and the B*45:02 and 45:03 alleles give rise to identical amplification patterns with the HLA-B low resolution primer set. These alleles can be separated by the respective high resolution primer sets.

The B*54:01:02 and the B*55:01:07, 55:02:01-55:02:06, 55:07, 55:10, 55:12, 55:16, 55:19, 55:26, 55:30, 55:35, 55:37, 55:39, 55:41-55:43, 55:47-55:48, 55:50 and 55:57 alleles give rise to identical amplification patterns with the HLA-B low resolution primer set. These alleles can be separated by the respective high resolution primer sets.

The B*55:04, 55:08, 55:13, 55:27, 55:46, 55:49 and the 56:15, 56:19N and 56:22 alleles give rise to identical amplification patterns with the HLA-B low resolution primer set. These alleles can be separated by the respective high resolution primer sets.

The B*55:23 and 55:32 and the B*56:18 and 56:31-56:32 alleles give rise to identical amplification patterns with the HLA-B low resolution primer set. These alleles can be separated by the respective high resolution primer sets.

⁴The C*01:05, 01:22, 01:35 and 01:36 and the B*39:76 and the B*54:18 alleles give rise to identical amplification patterns with the HLA-C low resolution primer set. These alleles are separated by the HLA-B low primer set.

The C*12:18:02 and the B*67:02 alleles give rise to identical amplification patterns with the HLA-C low resolution primer set. These alleles are separated by the HLA-B low primer set.

The C*14:06, 14:08-14:09 and 14:28 and the A*30:62 alleles give rise to identical amplification patterns with the HLA-C low resolution primer set. These alleles are separated by the HLA-A low primer set.

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Lot-specific information

SPECIFICITY TABLE

HLA-A low resolution primer set

Specificities and sizes of the PCR products of the 24 primer mixes used for HLA-A low resolution SSP typing

Primer Mix	Size of spec. PCR product ¹	Size of control band ²	HLA-A serology ³	Amplified HLA-A alleles ^{4,5}
1^{6,7}	120 bp, 145 bp, 225 bp	800 bp	A1, A36	*01:01:01:01-01:04N, 01:06-01:33, 01:35-01:130, 03:18, 03:135, 11:94, 11:112, 36:01-36:05
2⁷	175 bp, 215 bp, 255 bp, 365 bp, 415 bp	800 bp	A2, A203, A210, A19, A28	*02:01:01:01-02:01:15, 02:01:17- 02:01:19, 02:01:21-02:01:81, 02:01:83- 02:22:02, 02:24:01-02:35:01, 02:35:03- 02:47, 02:49-02:77, 02:78 ^w , 02:79:01- 02:97:02, 02:99, 02:101:01-02:128, 02:130-02:414, 02:416-02:417
3⁸	205 bp, 235 bp	1070 bp	A1, A3, A11, A32, A34, A36	*01:12, 01:19, 01:21, 01:126, 02:338, 03:01:01:01-03:17:02, 03:19-03:74, 03:76-03:94, 03:96-03:134, 03:136- 03:166, 11:25, 11:60, 11:130, 24:92, 32:04, 34:02:01-34:04, 34:07-34:10N, 36:02
4	190 bp	800 bp	A1, A3, A11, A30, A36, A68	*01:01:01:01-01:01:22, 01:01:24- 01:01:47, 01:01:49-01:04N, 01:06-01:07, 01:09-01:11N, 01:13, 01:16N-01:18N, 01:20-01:29, 01:31N-01:33, 01:35-01:78, 01:80-01:98, 01:100-01:130, 02:78, 02:169, 03:12, 03:18, 03:88, 03:135, 11:01:01-11:27, 11:29-11:52Q, 11:54- 11:139, 11:141-11:142, 26:19, 26:72, 30:08, 36:04, 68:13:01, 68:66, C*03:174, C*08:69, C*16:56
5	160 bp, 335 bp, 505 bp	1070 bp	A3, A9, A23, A24, A2403, A29, A31, A32	*03:15, 03:19, 03:30, 03:152, 11:139, 23:01:01-23:58, 24:02:01:01-24:11N, 24:13:01-24:15, 24:17-24:64, 24:66- 24:210, 24:212-24:232N, 29:07, 29:49, 31:08, 31:29, 32:05, 33:19, 33:53, C*04:01:03
6^{9,11}	135 bp, 200 bp	800 bp	A9, A23, A24, A29, A80	*23:01:01-23:56, 23:58, 24:24, 24:71, 29:07, 29:49, 31:29, 80:01:01:01-80:03, B*18:27
7	175 bp, 205 bp	1070 bp	A2, A3, A9, A23, A24, A2403, A26	*02:17:01 ^w -02:17:02 ^w , 11:139, 23:14:01- 23:14:02, 24:02:01:01-24:11N,

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				24:13:01-24:13:02, 24:17-24:50, 24:54-24:56, 24:58-24:63, 24:66-24:91, 24:93, 24:95-24:113, 24:115-24:137, 24:139-24:187, 24:189-24:210, 24:212-24:221, 24:223-24:227, 24:229-24:232N, 26:16, 33:19, 68:45
8	165 bp, 200 bp	800 bp	A2, A3, A10, A11, A25, A26, A28, A32, A34, A66, A68, A69	*01:51, 02:55, 03:24, 03:50, 11:10, 25:01:01-25:16, 25:18-25:22, 26:01:01-26:06, 26:08-26:15, 26:17-26:18, 26:20-26:43:02, 26:45-26:63, 26:65-26:71N, 26:73-26:85, 29:28, 32:15, 33:51, 34:01:01-34:11, 66:01-66:19, 68:01:01:01-68:100, 69:01
9^{6,10}	75 bp	800 bp	A3, A25, A32	*25:01:01-25:22, 32:01:01-32:01:13, 32:01:15-32:02, 32:04, 32:06-32:37, 32:39-32:57, B*07:81, B*08:52, B*18:67, B*38:41, B*53:05, B*53:16
10^{6,7,11}	80 bp, 240 bp	800 bp	A10, A26, A43	*01:43, 01:51, 11:17, 11:40, 26:01:01-26:02, 26:04, 26:07:01-26:20, 26:22-26:29, 26:31-26:43:02, 26:45-26:77, 26:79-26:85, 33:13, 33:48, 43:01, 68:84
11^{6,7}	80 bp, 175 bp, 500 bp	1070 bp	A1, A9, A10, A11, A26, A31, A34, A66	*01:13, 01:28, 03:63, 03:88, 11:01:01-11:27, 11:29-11:52Q, 11:54-11:139, 11:141-11:142, 24:19, 24:44, 26:03:01-26:03:02, 26:06, 26:21, 26:78, 34:01:01-34:08, 34:10N-34:11, 66:01, 66:04-66:11, 66:13-66:14, 66:17-66:19, 80:02
12⁶	125 bp, 190 bp	800 bp	A3, A10, A25, A26, A31, A34, A43, A66	*02:309, 03:01:19, 11:11, 25:05-25:06, 26:09, 26:54, 31:03-31:04, 34:01:01-34:11, 43:01, 66:02-66:03, 66:16
13	175 bp, 225 bp	1070 bp	A1, A2, A3, A10, A25, A26, A34, A43, A66	*01:01:56 ^w , 01:13, 02:34-02:35:03, 02:56:01-02:56:02, 02:62, 02:103, 02:135, 03:01:01:01-03:01:22, 03:01:24-03:07, 03:09-03:11N, 03:13-03:31, 03:33-03:35, 03:37-03:40, 03:42-03:56, 03:58, 03:60-03:71, 03:73-03:87, 03:90-03:106, 03:109-03:110, 03:112-03:141, 03:143-03:151, 03:153-03:166, 25:01:01-25:05, 25:07-25:22, 26:01:01-26:01:20, 26:01:22-26:01:27, 26:02 ^w , 26:03:01-26:03:02, 26:05-26:08, 26:10-26:28, 26:29 ^w , 26:30-26:33, 26:35-26:43:02, 26:45-26:48, 26:49 ^w , 26:50-26:72, 26:74-26:77, 26:79-26:85, 30:55, 34:08, 43:01, 66:01, 66:04-66:09, 66:10 ^w , 66:11-66:15,

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14 ^{6,7,11}	80 bp, 115 bp, 200 bp, 240 bp, 460 bp	1070 bp	A26, A29, A31, A34	66:17-66:19, 68:71, 74:13 *02:237, 02:309, 03:95, 26:19, 26:22, 29:01:01:01-29:53, 31:03-31:04, 32:42, 34:04, 66:09
15 ^{6,7,13,14}	90 bp, 135 bp, 205 bp	1070 bp	A1, A30	*01:13, 01:28, 03:43, 03:82, 11:113, 30:01:01-30:04:02, 30:06-30:20, 30:22- 30:74, 31:35
16	240 bp, 380 bp	1070 bp	A2, A24, A31, A32	*02:237, 03:95, 29:14, 31:01:02-31:74, 32:05, 33:53
17	140 bp, 180 bp	1070 bp	A32	*01:95, 03:43, 03:82, 29:13, 29:39, 31:35, 32:01:01-32:03, 32:05-32:57, 74:07
18	200 bp, 390 bp	1070 bp	A33, A68	*02:243, 29:48, 32:15, 33:01:01- 33:01:07, 33:03:01-33:37, 33:39-33:52, 33:54-33:68, 68:29, 74:04
19 ¹³	340 bp, 375 bp	800 bp	A2, A19, A68, A74	*01:121, 02:65, 02:407, 68:25, 74:01- 74:06, 74:08-74:17
20 ¹¹	210 bp, 240 bp	800 bp	A2, A210, A25, A68	*02:34-02:35:03, 02:46, 02:48, 02:56:01- 02:56:02, 02:62, 02:70, 02:78, 02:103, 02:129, 25:05, 26:54, 68:01:01:01- 68:100
21 ⁶	65 bp, 240 bp, 375 bp	800 bp	A2, A26, A28, A32, A66, A68, A69	*02:55, 02:149, 02:243, 02:309, 23:57, 24:82, 26:22, 31:41, 32:06, 33:22, 66:06, 66:09, 68:29, 69:01
22 ^{6,12}	85 bp, 240 bp	800 bp	A2, A36	*02:34-02:35:03, 02:46, 02:48, 02:56:01- 02:56:02, 02:62, 02:70, 02:78, 02:103, 02:129, 31:62, 36:01-36:05
23 ^{6,8,11}	75 bp, 160 bp, 240 bp, 495 bp	800 bp	A2, A26, A28, A36, A68, A80	*02:55, 03:41, 03:63, 03:75, 03:88, 11:130, 24:18, 24:204, 24:213, 26:03:01- 26:03:02, 26:05-26:06, 26:21, 26:30, 26:78, 33:24, 36:02, 68:05, 68:15, 68:20, 80:01:01:01-80:01:01:02, 80:03
24 ¹³	360 bp	1070 bp	A10, A26, A31, A66	*02:135, 02:309, 03:01:19, 25:13, 26:30, 26:65, 31:04, 34:09, 66:02-66:03, 66:12, 66:16

¹Alleles are assigned by the presence of specific PCR product(s). However, the sizes of the specific PCR products may be helpful in the interpretation of HLA-A low resolution SSP typings. When the primers in a primer mix can give rise to HLA-specific PCR products of more than one length this is indicated if the size difference is more than 20 base pairs. Size differences of 20 base pairs or less are not given. For high resolution SSP kits the respective lengths of the HLA-specific PCR product(s) are given for the alleles amplified by these primer mixes. Nonspecific amplifications, i.e. a ladder or a smear of bands, may sometimes be seen. GC-rich primers have a higher tendency of giving rise to nonspecific amplifications than other primers.

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PCR fragments longer than the control bands may sometimes be observed. Such bands should be disregarded and do not influence the interpretation of the SSP typings.

PCR fragments migrating faster than the control bands, but slower than a 400 bp fragment may be seen in some gel read-outs. Such bands can be disregarded and do not influence the interpretation of the SSP typings.

Some primers may give rise to primer oligomer artifacts. Sometimes this phenomenon is an inherent feature of the primer pair(s) of a primer mix. More often it is due to other factors such as too low amount of DNA in the PCR reactions, taking too long time in setting up the PCR reactions, working at elevated room temperature or using thermal cyclers that are not pre-heated.

²The internal positive control primer pairs amplify segments of the human growth hormone gene. The two different control primer pairs give rise to either an internal positive control band of 1070 base pairs, for most wells, or a band of 800 base pairs, for some wells.

Well number 1 contains the primer pair giving rise to the shorter, 800 bp, internal positive control band in order to help in the correct orientation of the HLA-A low resolution typing.

In addition, wells 2, 4, 6, 8, 9, 10, 12 and 19 to 23 contain the primer pair giving rise to the shorter, 800 bp, internal positive control band in order to allow kit identification.

In the presence of a specific amplification the intensity of the control band often decreases.

³The serological reactivity of all HLA-A alleles is not known. In this table we use the expert-assigned serological grouping in Tissue Antigens (2009) 73:95-170 and the serological grouping of the sequence-defined allele.

⁴For several HLA Class I alleles 1st and/or 4th exon(s) and beyond, as well as intron nucleotide sequences, are not available. In these instances it is not known whether some of the primers of the SSP sets are completely matched with the target sequences or not. We assume that unknown sequences in these regions are conserved within allelic groups.

⁵Due to sharing of sequence motifs, primer mix 4 will amplify the C*03:174, C*08:69 and C*16:56 alleles, primer mix 5 will amplify the C*04:01:03 allele, primer mix 6 will amplify the B*18:27 allele and primer mix 9 will amplify the B*07:81, B*08:52, B*18:67, B*38:41, B*53:05 and B*53:16 alleles.

⁶HLA-specific PCR products shorter than 125 base pairs have a lower intensity and are less sharp than longer PCR products.

⁷The primer pairs in wells 1, 2, 10, 11, 14 and 15 will in many samples give rise to two or three HLA-specific PCR fragments.

⁸Primer mix 3 may faintly amplify the A*30:04:01-30:04:02, 30:06, 30:17 and 30:29 alleles.

⁹Primer mix 6 may give rise to a lower yield of A*23 alleles than the other A low primer mixes.

¹⁰Primer mix 9 may weakly amplify the A*34 alleles.

¹¹Primer mixes 6, 10, 14, 20 and 23 have a tendency to giving rise to primer oligomer formation.

¹²Primer mix 22 might faintly amplify most A*11 alleles.

¹³Primer mixes 15 and 24 may give rise to a lower yield of HLA-specific PCR product than the other HLA-A low primer mixes.

¹⁴Primer mix 15 may have tendency of unspecific amplification.

‘w’, might be weakly amplified.

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SPECIFICITY TABLE

HLA-B low resolution primer set

Specificities and sizes of the PCR products of the 48 primer mixes used for HLA-B low resolution SSP typing

Primer Mix	Size of spec. PCR product ¹	Size of control band ²	HLA-B serol. ³	Amplified HLA-B alleles ⁴⁻⁵
25^{6,10}	110 bp	800 bp	7, 703, 40, 41, 42, 48, 61	*07:02:01-07:18:02, 07:20-07:32, 07:34-07:39, 07:41-07:47, 07:49N-07:50, 07:52, 07:54-07:59, 07:61-07:99, 07:101-07:121, 07:123-07:138, 07:140-07:154, 07:156-07:163, 07:166-07:190, 08:79, 15:138, 15:230, 15:241, 37:07, 40:15-40:16, 40:23, 40:32, 40:98, 40:136, 40:158, 40:183, 40:198, 40:231, 41:08, 42:05:01-42:05:02, 44:150, 48:05, 48:08, 48:15, C*02:23, C*04:77
26	215 bp	1070 bp	8, 44	*08:01:01-08:05, 08:07-08:25, 08:27-08:49, 08:51-08:61, 08:63-08:64, 08:66-08:84, 08:86N-08:93, 08:95-08:108, 15:142, 15:180, 35:218, 44:49, 44:156, 49:25, 51:68
27	140 bp, 235 bp	1070 bp	7, 8, 13, 15, 35, 4005, 44, 50, 49, 61, 62, 77	*07:20, 07:24, 07:60, 07:100, 07:131, 08:21, 08:25, 13:01:01-13:04, 13:06-13:08, 13:10-13:23, 13:25-13:38, 13:40-13:57, 13:59-13:66, 15:07:01-15:07:02, 15:36 ^w , 15:45, 15:55, 15:68, 15:89 ^w , 15:126, 15:207, 35:05:01-35:05:03, 35:16-35:17, 35:22, 35:30, 35:51, 35:58, 35:72, 35:89, 35:97, 35:113-35:114, 35:125, 35:164, 35:199, 40:05, 40:71, 40:174, 44:08 ^w , 44:54, 44:57 ^w , 44:60, 44:106, 44:110, 44:135, 44:158, 46:12, 51:64, 51:148, 53:14, 55:51, 58:18, C*03:05, C*03:25, C*03:27, C*03:143, C*03:167
28⁷	130 bp, 265 bp	800 bp	12, 13, 14, 17, 21, 35, 40, 41, 44, 45, 47, 49, 50, 60, 61, 64, 65	*13:01:01-13:04, 13:06-13:13, 13:15-13:23, 13:25-13:57, 13:59-13:67, 14:01:01-14:02:08, 14:03-14:04, 14:07N, 14:09, 14:11-14:12, 14:14-14:33, 15:46, 15:53, 15:106, 15:212, 18:44:01-18:44:02, 35:46-35:47, 35:63, 35:154, 35:207, 35:217, 40:01:01-40:01:29, 40:07, 40:10:01-40:10:02, 40:14:01-40:16, 40:22N-40:23, 40:25, 40:30-40:34, 40:36, 40:38, 40:42-40:43, 40:45, 40:47-40:49, 40:51-40:55, 40:58-40:63, 40:65-40:67, 40:69, 40:72:01-40:73, 40:76-40:77, 40:79-40:81, 40:84, 40:87:01-40:88, 40:92, 40:100-40:102, 40:106, 40:108, 40:110, 40:112-40:114, 40:116-40:118N, 40:121, 40:123-40:126, 40:128-40:130, 40:132, 40:134-40:136, 40:139-40:141, 40:146-40:147, 40:150-40:156, 40:158, 40:160:01-40:160:02, 40:163-40:164, 40:166, 40:168, 40:171-40:172, 40:175, 40:178-40:179, 40:182-40:183, 40:186-40:188, 40:191-40:199, 40:204, 40:207-40:208, 40:212-40:213, 40:215-40:219, 40:221-40:223, 40:227-40:228, 40:231, 40:233-40:238, 41:01-41:27, 44:02:01:01-44:03:06, 44:03:08-44:03:15, 44:03:17-44:03:18, 44:04-44:05:04, 44:09-44:39, 44:41:01-44:43:02, 44:45-44:56N, 44:58N-44:80, 44:82,

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29⁸	185 bp, 235 bp	800 bp	7, 16, 17, 27, 2708, 37, 38, 3901, 3902, 39, 64, 67	*07:02:32, 14:01:01-14:01:03, 14:07N-14:08, 14:10, 14:12, 14:14, 14:19, 14:26, 14:32, 27:01-27:05:15, 27:05:17-27:05:19, 27:05:21-27:06, 27:08-27:10, 27:12-27:13, 27:16-27:18, 27:20, 27:23, 27:26-27:27, 27:29, 27:31, 27:35-27:37, 27:39-27:42, 27:44-27:46, 27:48-27:61, 27:64N-27:69, 27:72-27:75, 27:77-27:80, 27:82-27:105, 37:02, 38:01:01-38:02:02, 38:02:04-38:03, 38:07-38:24, 38:26-38:32, 38:34N-38:43, 39:01:01:01-39:01:01:03, 39:01:03-39:01:08, 39:01:10-39:02:01, 39:03, 39:05:01-39:09, 39:11, 39:14-39:15, 39:18, 39:19:02, 39:22, 39:24:01-39:39:01, 39:40:01N-39:44, 39:46-39:48, 39:50-39:62, 39:64-39:71, 39:73-39:75, 39:77, 39:79-39:82, 47:04-47:05, 48:21, 48:26, 67:01:01, 67:03
30	190 bp	800 bp	14, 35, 38, 39, 65	*07:28, 08:87, 14:02:01-14:02:02, 14:02:04-14:02:05, 14:02:07-14:06:02, 14:09, 14:11, 14:13, 14:15-14:18, 14:20, 14:22-14:23, 14:25, 14:27, 14:29-14:31, 14:33, 15:77, 15:189, 15:233, 35:26, 38:05, 38:33, 39:04, 44:16, 44:37:01-44:37:02, 44:64:01-44:64:02, 44:91, 44:132, 44:150, 52:26, 57:04, A*23:31, A*24:106, C*07:231, C*16:10
31	290 bp	1070 bp	15, 22, 62, 63, 71, 72, 75, 76, 77, 46	*15:01:01:01-15:01:03, 15:01:06-15:02:06, 15:03:03, 15:04-15:08, 15:10:02-15:11:03, 15:11:05-15:15, 15:17:01:01-15:17:02, 15:19-15:21, 15:24:01-15:28, 15:30-15:36, 15:38:01-15:40, 15:42-15:46, 15:48, 15:50, 15:55-15:58, 15:60, 15:63, 15:65-15:66, 15:70-15:71, 15:73, 15:75-15:79N, 15:81-15:89, 15:92, 15:94N, 15:96-15:97, 15:101-15:102, 15:104-15:107, 15:109-15:113, 15:116-15:118, 15:120-15:122, 15:125-15:126, 15:128-15:129, 15:135-15:150, 15:152, 15:154-15:155, 15:157, 15:159-15:160, 15:162-15:172, 15:174-15:175, 15:177-15:179, 15:181N-15:185, 15:187-15:196, 15:199, 15:201-15:209N, 15:211, 15:213-15:219, 15:223-15:225, 15:227-15:228, 15:230-15:234, 15:236-15:237, 15:239-15:241, 15:244-15:251, 15:256-15:262N, 15:264-15:265, 15:267-15:273, 46:01:01-46:38, C*01:73, C*07:02:30, C*08:16:02
32	165 bp, 220 bp, 285 bp, 330 bp	1070 bp	5, 8, 12, 21, 22, 37, 41, 42, 44, 45, 48, 51, 56, 57, 60, 62, 70, 71, 72, 82	*08:01:01-08:05, 08:08N-08:13, 08:15-08:27, 08:29-08:36, 08:38-08:48, 08:50-08:73, 08:75-08:76, 08:78, 08:80-08:86N, 08:88, 08:90-08:106, 13:46, 15:03:01-15:03:04, 15:09-15:10:02, 15:18:01-15:18:05, 15:23, 15:29, 15:37, 15:46-15:47:02, 15:49, 15:51-15:54, 15:61-15:62, 15:64:01-15:64:02, 15:69, 15:72, 15:74, 15:80, 15:83, 15:90-15:91, 15:93, 15:98-15:99, 15:103, 15:106, 15:108, 15:114-15:115, 15:119, 15:123-15:124, 15:127, 15:131-15:134, 15:143, 15:151, 15:153, 15:156, 15:158, 15:161, 15:173, 15:176, 15:186, 15:197-15:198, 15:200, 15:210, 15:212, 15:220-15:221, 15:226N, 15:229, 15:235, 15:238,

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34	180 bp	800 bp	13, 22, 55, 60	*07:78, 13:01:01-13:02:15, 13:07N-13:09, 13:11, 13:14-13:20, 13:22:01-13:23, 13:25, 13:27-13:34, 13:36-13:45, 13:47, 13:49N-13:50, 13:52, 13:54-13:58, 13:60-13:61, 13:63N-13:67, 40:48, 45:10, 49:07, 50:31, 54:26, 55:09, 55:22, 55:24
35 ⁶	105 bp, 195 bp	1070 bp	8, 12, 27, 38, 39, 3902, 40, 44, 45, 48, 60, 70, 71, 72, 82	*07:27, 07:50, 08:04, 08:17, 08:54, 15:03:01-15:03:04, 15:47:01-15:47:02, 15:49, 15:54, 15:61-15:62, 15:64:01-15:64:02, 15:68-15:69, 15:91, 15:98, 15:103, 15:123, 15:127, 15:131-15:132, 15:151, 15:156, 15:158, 15:173, 15:210, 15:220, 15:235, 15:242, 15:253, 15:259, 15:266, 15:274, 18:37, 27:18, 27:29, 37:28, 38:03, 39:02:01-39:02:02, 39:08, 39:13:01-39:13:02, 39:23, 39:39:01-39:39:02, 39:49, 40:12, 40:46, 40:93, 42:11, 44:10, 44:15, 44:18, 44:40, 44:44, 44:130, 44:140, 44:156, 45:01, 45:05-45:07, 45:11-45:14, 48:01:01-48:05, 48:07-48:30, 49:20, 50:02, 52:16, 55:18, 82:01-82:03
36	280 bp	1070 bp	5, 7, 8, 13, 15, 16, 17, 18, 22, 35, 40, 42, 44, 46, 48, 49, 51, 53, 55, 56, 57, 58, 60, 61, 62, 63, 70, 71, 72, 75, 76, 77, 78	*07:09, 07:11, 07:17, 07:162, 08:28, 08:35, 08:37, 08:89, 08:107, 13:04, 13:10, 13:26, 15:01:01:01-15:01:04, 15:01:06-15:08, 15:11:01-15:16:03, 15:18:01-15:21, 15:23-15:29, 15:31-15:36, 15:38:01-15:40, 15:43-15:44, 15:46-15:46, 15:47:02, 15:49-15:57, 15:60-15:62, 15:64:01-15:72, 15:74-15:76, 15:78:01-15:82, 15:84-15:85, 15:87-15:89, 15:91-15:98, 15:101-15:129, 15:131-15:132, 15:134-15:136, 15:138-15:149N, 15:151-15:161, 15:163-15:167, 15:169-15:176, 15:178-15:187, 15:189-15:195, 15:197-15:207, 15:209N-15:215, 15:217-15:223, 15:225-15:228, 15:231-15:232, 15:234-15:242, 15:244-15:247, 15:249-15:251, 15:254-15:268, 15:270-15:272N, 15:274-15:275, 18:01:01:01-18:15, 18:17N-18:25, 18:27-18:40, 18:42-18:60, 18:62-18:89, 27:41, 35:01:01:01-35:01:37, 35:05:01-35:05:03, 35:07-35:08:06, 35:10-35:11:03,

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61	145 bp	1070 bp	12, 21, 35, *07:133, 15:46, 15:53, 15:106, 15:143, 15:212, 18:48, 40, 4005, 35:19, 35:47, 35:63, 35:154, 35:217, 39:69, 40:01:01- 41, 45, 47, 40:11:02, 40:14:01-40:16, 40:18, 40:20, 40:22N-40:40, 50, 60, 61 40:42-40:45, 40:48-40:75, 40:77-40:92, 40:94-40:95, 40:97-40:108, 40:111-40:116, 40:118N-40:136, 40:138- 40:156, 40:158-40:184, 40:186-40:187, 40:189-40:200, 40:202-40:207, 40:210-40:238, 41:01-41:04, 41:05 [?] , 41:06-

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62⁹	300 bp 1070 bp	7, 12, 13, 15, 17, 18, 21, 27, 2708, 35, 37, 38, 39, 3902, 40, 4005, 41, 44, 45, 47, 48, 49, 50, 52, 60, 61, 62, 70, 72, 76		*07:54, 07:123, 08:17, 08:38, 08:54, 08:101, 13:01:01-15, 17, 18, 13:04, 13:06, 13:08-13:23, 13:25-13:35, 13:37-13:67, 15:01:01:01-15:01:04, 15:01:06-15:01:18, 15:01:20-2708, 35, 15:01:32, 15:03:01-15:07:02, 15:12, 15:14, 15:19-15:20, 37, 38, 39, 15:24:01-15:27:03, 15:30, 15:32-15:36, 15:38:01-15:40, 3902, 40, 15:42-15:43, 15:45-15:50, 15:53-15:54, 15:56-15:58, 4005, 41, 15:60-15:63, 15:65-15:66, 15:68-15:71, 15:73-15:75, 44, 45, 47, 15:77-15:79N, 15:81-15:87, 15:91-15:92, 15:94N, 15:96-48, 49, 50, 15:98, 15:101-15:107, 15:109-15:111N, 15:113, 15:116-52, 60, 61, 15:118, 15:122-15:123, 15:125-15:129, 15:131-15:132, 62, 70, 72, 15:135-15:138, 15:140-15:142, 15:145-15:147, 15:150-76 15:152, 15:154-15:160, 15:163-15:167, 15:169, 15:171-15:175, 15:178-15:179, 15:181N-15:185, 15:187-15:188, 15:190N, 15:192-15:193, 15:195, 15:199, 15:201-15:207, 15:210-15:212, 15:217-15:220, 15:224-15:225, 15:227-15:228, 15:231-15:237, 15:239-15:245Q, 15:247-15:251, 15:253, 15:255-15:262N, 15:264, 15:266-15:267, 15:269-15:272N, 15:274, 18:12, 27:01-27:21, 27:24-27:91, 27:93-27:105, 35:10, 35:13, 35:16, 35:28, 35:63, 35:69, 35:80, 35:207, 35:226, 37:01:01-37:07, 37:09-37:37, 38:03-38:04, 38:25, 39:02:01-39:02:02, 39:08, 39:13:01-39:13:02, 39:22-39:23, 39:49, 40:01:01-40:07, 40:09-40:16, 40:18-40:24, 40:26-40:40, 40:42-40:67, 40:70-40:105, 40:107-40:165, 40:167-40:231, 40:233-40:238, 41:01-41:27, 42:11, 44:02:01:01-44:02:21, 44:02:23-44:05:04, 44:07-44:11, 44:13-44:170, 44:172-44:175, 45:01-45:14, 47:01:01:01-47:08, 48:01:01-48:05, 48:07-48:15, 48:17-48:30, 49:01:01-49:25, 50:01:01-50:02, 50:04-50:14, 50:16-50:20, 50:31-50:32, 52:01:01:01-52:31, 53:17:01-53:17:02, 53:28, 55:18, 55:34, 55:40, 78:05-78:06
63^{8,14}	160 bp, 330 bp	1070 bp	22, 44, 45, 47, 54	*08:87, 44:02:01:01-44:02:29, 44:06, 44:08-44:09, 44:11-44:12, 44:16, 44:19N-44:24, 44:27:01-44:27:02, 44:33-44:34:02, 44:41:01-44:41:02, 44:44, 44:48-44:49, 44:52N-44:53, 44:55, 44:59:01-44:59:02, 44:63, 44:66-44:68, 44:71-44:74, 44:80, 44:83-44:84, 44:86-44:87, 44:89-44:91, 44:93, 44:95, 44:97, 44:99-44:102, 44:104, 44:106, 44:112-44:113, 44:116, 44:118-44:119, 44:121, 44:126:01-44:127, 44:131-44:132, 44:137-44:138Q, 44:142, 44:145, 44:148-44:149N, 44:151-44:152, 44:162, 44:168-44:173, 54:01:01, 54:01:03-54:28, 83:01
64	180 bp, 210 bp	1070 bp	13, 15, 18, 35, 39, 40, 54, 55, 56, 59, 78	*07:65, 13:06, 13:53, 15:42, 15:86, 15:224, 18:04, 35:08:05, 35:42:02, 35:60, 35:185, 39:17, 39:63, 40:01:11, 40:58, 45:08, 46:18, 54:01:01-54:02, 54:05N, 54:07-54:08N, 54:10, 54:12-54:13, 54:16-54:25, 54:27-54:28, 55:01:01-55:03, 55:05, 55:07, 55:10-55:12, 55:15-55:16, 55:18-55:19, 55:21, 55:25-55:26, 55:29-55:31, 55:33-55:45, 55:47-55:48, 55:50, 55:52-55:57, 56:05:01, 56:06, 56:10, 56:23, 59:01:01:01-59:01:01:02, 59:05, 78:01:01-

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65	180 bp	1070 bp	12, 15, 21, *13:03, 13:48, 15:73, 40:71, 44:10, 44:15, 44:18, 44:140, 22, 44, 45, 45:01, 45:04-45:07, 45:11-45:14, 46:11, 49:01:01-49:03, 49, 50, 51, 49:06, 49:08-49:17, 49:19N-49:26, 50:01:01-50:02, 50:04-56, 61, 62, 50:08, 50:10-50:13, 50:15-50:19, 50:32, 51:15, 51:62, 82, 51:106, 52:25, 54:03, 56:01:01-56:01:04, 56:02, 56:04, 56:07-56:08, 56:13-56:14, 56:16-56:17, 56:20:01-56:20:02, 56:24-56:30, 56:33-56:39, 59:04, 82:01-82:03, C*03:19, C*03:102
66⁶	90 bp, 240 bp	800 bp	57, *55:14, 57:01:01-57:44, 57:46-57:50, 57:52-57:64, 58:36, C*06:72
67^{6,13}	90 bp	1070 bp	5, 13, 15, *07:182N, 13:11, 15:18:03, 15:73, 15:224, 39:17, 40:48, 17, 39, 55, 40:71, 51:62, 56:02, 56:04, 56:10, 58:01:01-58:02, 58:04-56, 58, 60, 58:29, 58:31N-58:35, 58:37-58:40, 58:42, C*02:06^w, C*02:47^w
68⁶	95 bp	1070 bp	8, 18, 22, *07:65 ^w , 07:134 ^w , 08:32, 18:01:01:01-18:11, 18:13-18:15, 35, 37, 38, 18:17N-18:36, 18:38-18:47, 18:49-18:65, 18:67-18:89, 39, 44, 51, 35:01:01:01-35:08:04, 35:08:06-35:09:03, 35:11:01-5102, 35:12:03, 35:14:01-35:15, 35:17-35:18, 35:20:01-35:24:02, 5103, 53, 35:27, 35:29:01-35:45, 35:48, 35:50-35:62, 35:64:01-78, 35:68:02, 35:70-35:72, 35:74-35:75, 35:76 ^w , 35:77-35:79, 35:81-35:153, 35:155-35:185, 35:187-35:190, 35:192-35:197, 35:199-35:206, 35:208-35:209, 35:211-35:216N, 35:218-35:225, 35:227-35:229, 37:08, 38:06-38:07, 39:19:01-39:19:02, 44:06, 51:01:01-51:24:04, 51:26-51:46, 51:48-51:103, 51:105-51:111, 51:113-51:117, 51:119-51:146, 51:148-51:152, 53:01:01-53:16, 53:18-53:27, 53:29, 56:06 ^w , 78:01:01-78:04, 78:07
69^{6,10}	115 bp, 150 bp	1070 bp	15, 18,22, *07:100, 13:31, 13:41, 15:01:01:01-15:01:04, 15:01:06-27, 35, 39, 15:01:16, 15:01:18-15:01:30, 15:01:32, 15:04, 15:07:01-46, 55, 62, 15:08, 15:11:01-15:12, 15:14-15:15, 15:19, 15:24:01-72, 73, 75, 15:24:02, 15:26N-15:28, 15:30, 15:32, 15:34-15:35, 76, 15:38:01-15:38:02, 15:43, 15:45-15:46, 15:50, 15:53-15:54, 15:56-15:58, 15:60, 15:63, 15:66, 15:68, 15:70-15:71, 15:73, 15:75-15:77, 15:79N, 15:81-15:82, 15:85, 15:87, 15:92, 15:94N, 15:96-15:97, 15:101-15:102, 15:104-15:105, 15:109-15:111N, 15:113, 15:117-15:118, 15:120, 15:122, 15:125-15:126, 15:128-15:129, 15:135, 15:137, 15:140, 15:142-15:149N, 15:152, 15:154, 15:157, 15:159-15:160, 15:163-15:167, 15:169, 15:171-15:172, 15:174-15:175, 15:178, 15:180-15:184, 15:187, 15:189-15:193, 15:201-15:203, 15:205-15:207, 15:209N, 15:211-15:212, 15:215, 15:217, 15:225, 15:227-15:228, 15:231-15:234, 15:236, 15:239, 15:241, 15:244-15:247, 15:251, 15:256-15:262N, 15:264, 15:267, 15:269-15:270, 15:272N, 18:19, 27:25, 27:75, 35:14:01-35:14:02, 35:43:01-35:44, 35:62, 35:67, 35:79, 35:86, 35:102, 35:117, 35:135, 35:163, 35:185, 35:213, 39:18, 39:36, 44:146, 46:01:01-46:02, 46:04-46:05, 46:07N, 46:09-46:10, 46:12, 46:14-46:17,

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70¹⁵	360 bp	1070 bp	Bw4	46:20, 46:22-46:24, 46:26-46:32, 46:34-46:38, 51:61:01-51:61:02, 52:21, 54:06, 55:21, 56:03, 73:01-73:02, A*26:68, A*68:56, C*02:56, C*06:20, C*12:50 *07:27, 07:36, 07:38, 07:81, 07:149, 07:180, 08:02-08:03, 08:52, 08:78, 13:01:01-13:04, 13:06-13:08, 13:10-13:23, 13:25-13:38, 13:40-13:66, 15:13:01-15:13:02, 15:16:01-15:17:02, 15:23-15:24:02, 15:36, 15:43, 15:67, 15:87, 15:89, 15:95, 15:115, 15:157, 15:162, 15:168, 15:177, 15:196, 15:208, 15:216, 15:222, 15:230, 15:254, 15:256, 15:268, 15:273, 18:09, 18:54, 18:67, 27:01-27:07:03, 27:09-27:11, 27:13-27:17, 27:19-27:21, 27:23-27:25, 27:27-27:32, 27:34-27:39, 27:41, 27:43, 27:45-27:88, 27:90:01-27:105, 37:01:01-37:04:02, 37:06-37:10, 37:12-37:36, 38:01:01-38:43, 40:13, 40:19, 40:47, 40:96, 40:109-40:110, 40:117, 40:157, 40:188, 40:201, 44:02:01:01-44:08, 44:10-44:45, 44:47-44:74, 44:76-44:89, 44:91-44:126:02, 44:128, 44:130, 44:132-44:175, 47:01:01:01-47:01:02, 47:03-47:08, 48:18, 49:01:01-49:20, 49:22-49:26, 51:01:01-51:24:04, 51:26-51:46, 51:48-51:152, 52:01:01:01-52:31, 53:01:01-53:30, 54:12, 56:07, 56:21, 57:01:01-57:11, 57:13-57:64, 58:01:01-58:02, 58:04-58:29, 58:31N-58:40, 58:42, 59:01:01:01-59:05
71	350 bp	1070 bp	Bw6	*07:02:01-07:26, 07:28-07:35, 07:37, 07:39-07:80, 07:82-07:148, 07:150-07:179, 07:181N-07:190, 08:01:01-08:01:20, 08:04-08:05, 08:07-08:51, 08:53:01-08:77, 08:79-08:108, 13:09, 13:39, 13:67, 14:01:01-14:33, 15:01:01:01-15:01:04, 15:01:06-15:12, 15:14-15:15, 15:18:01-15:21, 15:25:01-15:35, 15:37-15:40, 15:42, 15:44-15:58, 15:60-15:66, 15:68-15:86, 15:88, 15:90-15:94N, 15:96-15:99, 15:101-15:114, 15:116-15:129, 15:131-15:156, 15:158-15:161, 15:163-15:167, 15:169-15:176, 15:178-15:195, 15:197-15:207, 15:209N-15:215, 15:217-15:221, 15:223-15:229, 15:231-15:253, 15:255, 15:257-15:267, 15:269-15:272N, 15:274-15:275, 18:01:01:01-18:08, 18:10-18:15, 18:17N-18:53, 18:55-18:66, 18:68-18:89, 27:08, 27:12, 27:18, 27:26, 27:33, 27:40, 27:42, 27:44, 27:89, 35:01:01:01-35:72, 35:74-35:221, 35:223-35:229, 37:05, 37:11, 37:14 ^w , 37:37, 39:01:01:01-39:01:01:03, 39:01:03-39:01:14, 39:01:16-39:20, 39:22-39:82, 40:01:01-40:12, 40:14:01-40:16, 40:18, 40:20-40:40, 40:42-40:46, 40:48-40:75, 40:77-40:95, 40:97-40:108, 40:111-40:116, 40:118N-40:156, 40:158-40:187, 40:189-40:200, 40:202-40:238, 41:01-41:25, 41:27, 42:01:01-42:02, 42:04-42:20, 44:09, 44:46, 44:75, 44:90, 44:129, 44:131, 45:01-45:14, 46:01:01-46:38, 47:02, 47:03 ^w , 48:01:01-48:17, 48:19-48:30, 50:01:01-50:02, 50:04-50:20, 50:31-50:32, 54:01:01-54:11, 54:13-54:28, 55:01:01-55:05, 55:07-55:58, 56:01:01-56:06, 56:08-56:20:02, 56:22-56:39, 57:12, 67:01:01-67:03, 73:01-73:02, 78:01:01-78:07, 81:01-81:06, 82:01-82:03, 83:01

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¹Alleles are assigned by the presence of specific PCR product(s). However, the sizes of the specific PCR products may be helpful in the interpretation of HLA-B low resolution SSP typings.

When the primers in a primer mix can give rise to HLA-specific PCR products of more than one length this is indicated if the size difference is more than 20 base pairs. Size differences of 20 base pairs or less are not given. For high resolution SSP kits the respective lengths of the HLA-specific PCR product(s) are given for the alleles amplified by these primer mixes.

Nonspecific amplifications, i.e. a ladder or a smear of bands, may sometimes be seen. GC-rich primers have a higher tendency of giving rise to nonspecific amplifications than other primers.

PCR fragments longer than the control bands may sometimes be observed. Such bands should be disregarded and do not influence the interpretation of the SSP typings.

PCR fragments migrating faster than the control bands, but slower than a 400 bp fragment may be seen in some gel read-outs. Such bands can be disregarded and do not influence the interpretation of the SSP typings.

Some primers may give rise to primer oligomer artifacts. Sometimes this phenomenon is an inherent feature of the primer pair(s) of a primer mix. More often it is due to other factors such as too low amount of DNA in the PCR reactions, taking too long time in setting up the PCR reactions, working at elevated room temperature or using thermal cyclers that are not pre-heated.

²The internal positive control primer pairs amplify segments of the human growth hormone gene. The two different control primer pairs give rise to either an internal positive control band of 1070 base pairs, for most wells, or a band of 800 base pairs, for some wells.

Well number 25 contains the primer pair giving rise to the shorter, 800 bp, internal positive control band in order to help in the correct orientation of the HLA-B low resolution typing.

In addition, wells number 28 to 30, 34, 41, 44, 45, 52, 54, 55, 59, 66 and 72 contain the primer pair giving rise to the shorter, 800 bp, internal positive control band in order to allow kit identification.

In the presence of a specific amplification the intensity of the control band often decreases.

³The serological reactivity of all HLA-B alleles is not known. In this table we use the expert-assigned serological grouping in Tissue Antigens (2009) 73:95-170 and the serological grouping of the sequence-defined allele.

⁴For several HLA Class I alleles 1st and/or 4th exon(s) and beyond, as well as intron nucleotide sequences, are not available. In these instances it is not known whether some of the primers of the SSP sets are completely matched with the target sequences or not. We assume that unknown sequences in these regions are conserved within allelic groups.

⁵Due to sharing of sequence motifs, the C*02:23 and C*04:77 alleles will be amplified by primer mix 25, the C*03:05, C*03:25, C*03:27, C*03:143 and C*03:167 alleles will be amplified by primer mix 27, the C*01:30 and C*12:87 alleles will be amplified by primer mix 28, the A*23:31, A*24:106, C*07:231 and C*16:10 alleles will be amplified by primer mix 30, the C*01:73 allele will be amplified by primer mixes 31, 50 and 55, the C*07:02:30 and C*08:16:02 alleles will be amplified by primer mix 31, the C*07:46 allele will be amplified by primer mix 32, the A*24:174 allele will be amplified by primer mix 37, the C*03:102 allele will be amplified by primer mixes 41 and 65, the C*03:179 allele will be amplified by primer mix 43, the C*07:302 allele will be amplified by primer mix 44, the C*15:51 allele will be amplified by primer mix 45, the C*03:129 and C*17:16 alleles will be amplified by primer mix 49, the C*15:25 allele will be amplified by primer mix 53, the C*15:39 allele will be amplified by

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primer mix 55, the C*15:02:04 allele will be amplified by primer mix 64, the C*03:19 allele will be amplified by primer mix 65, the C*06:72 allele will be amplified by primer mix 66, the C*02:06 and 02:47 alleles will be weakly amplified by primer mix 67 and the A*26:68, A*68:56, C*02:56, C*06:20 and C*12:50 alleles will be amplified by primer mix 69.

⁶HLA-specific PCR products shorter than 125 base pairs have a lower intensity and are less sharp than longer PCR products.

⁷Primer mix 28 may give rise to a lower yield of HLA-specific PCR product than the other HLA-B low resolution primer mixes in B*40, B*41, B*45, B*49 and B*50 alleles.

⁸Primer mixes 29, 33 and 63 may give rise to a lower yield of HLA-specific PCR product than the other HLA-B low resolution primer mixes.

⁹Primer mixes 33 and 62 may have tendencies of unspecific amplifications, most pronounced in primer mix 33.

¹⁰Primer mixes 25, 43, 44, 50 and 69 have a tendency to giving rise to primer oligomer formation.

¹¹The B*57 and B*58 alleles might be faintly amplified by primer mix 33.

¹²The C*17:01 to C*17:04 alleles might be faintly amplified by primer mix 49.

¹³Primer mixes 56 and 67 may generate a false positive band of about 800 base pairs. This band should be disregarded when interpreting HLA-B low resolution typings.

¹⁴Primer mix 63 may give rise to a lower yield of B*54 alleles than the other B low primer mixes.

¹⁵The Bw4-associated HLA-A specificities A9, A23, A24, A2403, A25 and A32 are not amplified by the primer pair in primer mix 70.

‘w’, might be weakly amplified.

‘?’ , nucleotide sequence information not available for the primer matching sequence.

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Lot-specific information

SPECIFICITY TABLE

HLA-C low resolution SSP typing

Specificities and sizes of the PCR products of the 23+1 primer mixes used for HLA-C low resolution SSP typing

Primer Mix	Size of spec. PCR product ¹	Size of control band ²	Amplified HLA class I ^{3,4} alleles
73⁵	90bp, 150 bp	800 bp	*01:02:01-01:75, 04:71, B*39:76, B*54:18
74⁶	130 bp, 200 bp, 270 bp, 300 bp	800 bp	*01:10, 01:43, 02:02:01-02:02:03, 02:02:05-02:40, 02:42-02:57, 02:59-02:67Q, 04:32, 04:77, 06:08, 07:101, 07:148, 07:161, 08:31, 14:25, 15:42, 16:29, 16:50, 17:01:01-17:06, 17:08-17:16, 17:18-17:19, 18:03
75¹³	280 bp	800 bp	*02:02:01-02:02:03, 02:02:05-02:03, 02:04 ^w , 02:05-02:13, 02:14 ^w , 02:15-02:25Q, 02:26:02-02:40, 02:42-02:67Q, 03:02:01-03:02:09, 03:04:01:01-03:04:25, 03:04:27-03:10, 03:14-03:17, 03:19, 03:23-03:29, 03:32-03:38:02, 03:40:01-03:42, 03:44-03:48, 03:51, 03:54, 03:57, 03:60, 03:63-03:64:01, 03:65, 03:70-03:74, 03:77-03:78, 03:80, 03:82, 03:84, 03:87, 03:89-03:95, 03:98, 03:100-03:101, 03:104-03:111, 03:113-03:115, 03:117-03:118, 03:121N, 03:123, 03:125, 03:128-03:131, 03:134-03:136, 03:138-03:140, 03:143, 03:145-03:149, 03:153-03:155, 03:157, 03:159, 03:162-03:164, 03:169Q, 03:172-03:174, 03:178-03:181, 03:183-03:184, 03:186, 04:03:01, 04:06, 04:16, 04:80, 04:107, 05:58:01, 06:03:01, 07:96:01-07:96:02, 12:03:23, 15:02:01-15:09, 15:10:02-15:11, 15:13, 15:15-15:19, 15:21-15:22, 15:24-15:35, 15:37-15:60, 15:62, 15:64-15:66, 16:34
76⁷	170 bp, 275 bp	1070 bp	*03:02:01-03:04:06, 03:04:08-03:11:02, 03:13-03:15, 03:17-03:40:03, 03:42-03:57, 03:59-03:79, 03:81-03:85, 03:87-03:93, 03:95-03:98, 03:100-03:109, 03:111-03:112, 03:114-03:150, 03:152-03:164, 03:166-03:189N, 07:242
77	280 bp	800 bp	*03:03:01-03:03:20, 03:11:01-03:11:02, 03:13, 03:20N-03:22Q, 03:30-03:31, 03:43:01-03:43:02, 03:49-03:50, 03:52-03:53, 03:55-03:56, 03:58-03:59, 03:61-03:62, 03:66, 03:67 ^w , 03:68-03:69, 03:75-03:76, 03:79, 03:81, 03:83, 03:85-03:86, 03:88, 03:96-03:97, 03:102-03:103, 03:112, 03:116:01-03:116:02, 03:119-03:120, 03:122, 03:124, 03:126-03:127, 03:132-03:133, 03:141-03:142, 03:150-03:152, 03:158, 03:160-03:161, 03:165, 03:167-03:168, 03:171, 03:175-03:177, 03:185, 03:187-03:189N, 15:12

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78¹³	130 bp, 330 bp	800 bp	*02:02:01-02:02:03, 02:02:05-02:02:12, 02:02:14-02:02:25, 02:03-02:20, 02:22-02:25Q, 02:27:01-02:38N, 02:40, 02:42-02:44, 02:46-02:67Q, 04:01:01-04:01:27, 04:01:29-04:01:51, 04:03:01-04:15:03, 04:17-04:20, 04:23-04:41, 04:43-04:102, 04:104-04:139, 04:141-04:145, 05:26, 05:78, 07:02:09, 07:125, 15:11, 15:36, 16:34
79	165bp, 390 bp, 445 bp	1070 bp	*04:129, 05:01:01-05:01:26, 05:03-05:91N, 06:05, 06:67, 08:10, 12:21, 12:33, 16:40, 16:53, 17:05
80	130 bp, 355 bp	800 bp	*02:06, 02:47, 06:02:01-06:02:01:02, 06:02:03-06:16N, 06:18-06:31, 06:33-06:76:01, 06:77-06:93, 06:96-06:98, 12:03:09, 12:15, 15:02:01-15:03, 15:07-15:08, 15:10:01-15:13, 15:15-15:18, 15:21, 15:26, 15:28, 15:31-15:35, 15:37-15:39, 15:41-15:45, 15:47-15:53, 15:56-15:58, 15:60, 15:62-15:64
81⁹	245 bp, 425 bp	800 bp	*07:01:01-07:33N, 07:35-07:294, 07:296-07:307
82^{5,9,13}	110 bp, 165 bp, 390 bp	800 bp	*01:43, 07:101, 07:148, 07:161, 08:01:01-08:63, 08:65-08:77
83	340 bp	1070 bp	*01:14, 01:59, 02:02:01-02:02:03, 02:02:05-02:11, 02:13-02:26:03, 02:28-02:40, 02:42-02:67Q, 03:07, 03:15, 03:45, 03:130, 03:140, 03:163, 04:01:01-04:01:51, 04:03:01-04:10, 04:12-04:20, 04:23-04:28, 04:30-04:35, 04:37-04:54, 04:56-04:145, 05:01:01-05:01:26, 05:03-05:91N, 06:02:01-06:02:01:02, 06:02:03-06:02:11, 06:02:13-06:10, 06:12-06:51, 06:53:01-06:99, 07:07, 07:09, 07:49, 07:76, 07:210, 07:238, 07:247, 08:10, 12:04:01-12:05, 12:09, 12:21, 12:33, 12:41, 12:54, 12:60, 14:04, 14:12, 14:49, 15:02:01-15:06:03, 15:08-15:13, 15:15-15:19, 15:22-15:24, 15:26-15:42, 15:44-15:66, 16:02:01-16:02:09, 16:09, 16:12, 16:19, 16:25, 16:46-16:48, 16:57, 17:01:01-17:19, 18:01-18:06
84^{5,11}	100 bp, 160 bp, 220 bp	800 bp	*01:02:18, 01:04, 01:21, 06:76:02, 12:02:01-12:03:01:02, 12:03:03-12:03:07, 12:03:09-12:03:15, 12:03:17-12:03:19, 12:03:21-12:03:25, 12:04:02-12:08, 12:10:01-12:13, 12:14:02-12:18:01, 12:19-12:25, 12:27-12:32, 12:34-12:58, 12:60-12:95, 14:02:08, 16:15:02
85^{5,11}	120 bp, 250 bp	800 bp	*01:21, 02:12, 02:49, 02:55, 04:01:01-04:01:51, 04:03:01-04:09N, 04:12-04:20, 04:23-04:35, 04:37-04:54, 04:56-04:145, 05:42, 05:46, 06:76:02, 07:02:09, 07:125, 08:05, 08:21, 08:25, 12:02:01-12:03:03, 12:03:05-12:03:08, 12:03:10-12:03:12, 12:03:13 ^w , 12:03:14-12:03:23, 12:03:24 ^w , 12:03:25, 12:04:02, 12:06-12:08, 12:10:01-12:20, 12:22-12:32, 12:34-12:48, 12:50-12:95, 15:03, 15:16, 15:25, 16:01:01-16:02:09, 16:06-16:28, 16:30N-16:32, 16:34,

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86¹⁴	160 bp, 215 bp	800 bp	16:36-16:39:01, 16:41, 16:43-16:47, 16:49-16:52, 16:54, 16:56-16:57, 17:01:04, B*67:02 *01:04, 01:09, 02:05, 02:17, 04:42, 06:02:01:01- 06:02:01:02, 06:02:03-06:02:15, 06:02:17-06:03:02, 06:07-06:13, 06:15-06:34, 06:36-06:39, 06:41-06:71, 06:73-06:78, 06:80, 06:82-06:99, 07:31:01-07:31:02, 07:125, 07:177, 12:03:01:01-12:07, 12:11-12:13, 12:15, 12:19, 12:23, 12:25-12:26, 12:28-12:29, 12:31- 12:35, 12:37-12:39N, 12:42Q-12:43, 12:45-12:48, 12:50-12:55, 12:57-12:63, 12:65-12:66, 12:70-12:71, 12:75-12:79, 12:81-12:82, 12:87-12:95, 14:15-14:16, 16:04:01, 16:29, 16:33, 16:35, 16:42, 16:48, 16:55
87¹³	130 bp, 255 bp	1070 bp	*02:02:01 ^w , 02:02:02-02:02:03, 02:02:05-02:13, 02:15- 02:26:03, 02:28-02:40, 02:42-02:64, 02:66-02:67Q, 03:07, 03:10, 03:15, 03:29, 03:45, 03:58, 03:86, 03:94, 03:99, 03:163, 04:03:01, 04:06, 04:16, 04:37, 04:80, 04:103, 04:107, 05:01:01:01-05:01:26, 05:03- 05:19, 05:21-05:42, 05:44:01-05:77, 05:79-05:91N, 06:03:01-06:03:02, 06:76:01-06:76:02, 08:10, 12:04:01-12:05, 12:09, 12:21, 12:33, 12:41, 12:60, 12:72, 14:45, 15:02:01-15:06:03, 15:08-15:13, 15:15- 15:19, 15:21-15:22, 15:24, 15:26-15:35, 15:37-15:42, 15:44-15:62, 15:64-15:66, 16:02:01-16:02:09, 16:09, 16:12, 16:18-16:19, 16:25, 16:37, 16:46-16:48, 17:01:01:01-17:19, B*35:222
88¹²	255 bp, 445 bp	1070 bp	*04:11, 04:29, 04:36, 04:55, 04:114, 07:64, 12:55, 14:02:01-14:11, 14:13-14:48, 14:50-14:51, 16:40, 16:53, A*30:62
89^{5,10}	110 bp, 325 bp	800 bp	*02:06, 03:81, 03:175, 04:108, 04:112, 05:36, 06:89, 07:123, 07:173, 07:294, 12:08, 12:15, 12:81, 15:02:01-15:13, 15:15-15:19, 15:21-15:24, 15:26- 15:66, 16:20
90¹²	180 bp, 210 bp, 240 bp	1070 bp	*02:13, 02:18, 02:33, 02:49, 04:01:01:01-04:01:22, 04:01:24-04:01:51, 04:03:01-04:10, 04:12-04:20, 04:23-04:32, 04:34-04:106, 04:108-04:115N, 04:117- 04:129, 04:131-04:145, 05:17, 05:25, 05:42, 05:55, 05:68, 05:79, 06:05, 06:31, 06:76:02, 07:02:09, 07:31:01-07:31:02, 07:177, 08:01:01-08:01:09, 08:03:01-08:03:02, 08:06, 08:08-08:11, 08:14, 08:16:01-08:16:02, 08:20-08:22, 08:24, 08:26N, 08:28, 08:36N, 08:38, 08:40-08:42, 08:44, 08:46, 08:50, 08:56-08:61, 08:65, 08:72:01, 12:14:01- 12:14:02, 12:28, 12:58, 14:10, 14:15, 15:12, 15:25, 15:62, 15:65, 16:01:01-16:02:09, 16:04:01, 16:06- 16:39:01, 16:41-16:42, 16:44-16:52, 16:54-16:57
91^{11,15}	225 bp, 250 bp	800 bp	*01:60, 04:58, 05:23, 05:62, 08:07, 08:47, 12:14:01- 12:14:02, 14:17, 15:25, 15:65, 17:01:01:01-17:19
92	215 bp, 425 bp	800 bp	*01:02:01-01:03, 01:06-01:08, 01:10-01:20, 01:23- 01:34, 01:37N-01:48, 01:51-01:54, 01:56N-01:75, 03:58, 03:86, 03:94, 03:99, 04:37, 05:16, 05:85,

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Lot-specific information

			06:05-06:06, 06:17, 06:31, 07:07, 07:09, 07:49, 07:76, 07:210, 07:238, 07:247, 08:12, 12:09, 12:24, 14:02:01-14:05, 14:07N, 14:10-14:14, 14:17-14:27, 14:29-14:51, 16:04:01, 16:29, 16:33, 16:42, 16:53, 16:55, 18:01-18:06, B*14:03
93	325 bp, 380 bp	1070 bp	*01:03, 01:24, 01:34, 01:49-01:50, 01:55, 02:22, 02:62, 03:03:01-03:04:36, 03:06-03:11:02, 03:14, 03:18-03:24, 03:26, 03:28-03:32, 03:34, 03:37:01-03:59, 03:61-03:70, 03:72-03:83, 03:85, 03:87-03:88, 03:90-03:93, 03:96, 03:98, 03:100-03:107, 03:109, 03:111-03:120, 03:122-03:131, 03:133-03:134, 03:136-03:138, 03:140-03:145, 03:147-03:153, 03:155-03:166, 03:168, 03:170-03:176, 03:179-03:189N, 04:01:01:01-04:01:15, 04:01:17-04:01:51, 04:03:01-04:20, 04:24-04:53, 04:55-04:71, 04:73-04:107, 04:109-04:145, 05:01:01:01-05:01:26, 05:03, 05:05-05:21, 05:23-05:91N, 06:09, 06:14, 06:35, 06:72, 07:10, 07:28, 07:41, 07:43, 07:184, 07:196, 08:01:01-08:08, 08:10, 08:12-08:47, 08:49-08:63, 08:65-08:77, 12:31, 12:44, 15:02:01-15:13, 15:15-15:19, 15:21, 15:23-15:36, 15:38-15:54, 15:56-15:57, 15:59-15:64, 15:66, 16:45, 17:01:01:01-17:19, 18:01-18:06
94¹³	135 bp	1070 bp	*03:02:01-03:04:24, 03:04:27-03:11:02, 03:13-03:17, 03:19-03:38:02, 03:40:01-03:64:01, 03:65-03:66, 03:67 ^w , 03:68-03:98, 03:100-03:136, 03:138-03:143, 03:146-03:155, 03:157-03:165, 03:167-03:169Q, 03:171, 03:173-03:181, 03:183-03:189N, 04:32, 04:77, 06:03:01, 07:96:01-07:96:02, 14:25, 15:02:10, 15:43, 18:03
95¹³	155 bp, 235 bp	1070 bp	*04:14, 04:42, 04:68, 06:02:01:01-06:02:01:02, 06:02:03-06:02:26, 06:04-06:75, 06:78-06:99, 07:01:01:01-07:02:07, 07:02:09-07:02:28, 07:02:30-07:02:40, 07:02:41 ^w , 07:03-07:25, 07:27:01-07:32N, 07:35-07:38:02, 07:41-07:63, 07:65-07:91, 07:93-07:95, 07:97-07:138, 07:140-07:151, 07:153-07:155, 07:157-07:176, 07:178-07:209, 07:211-07:222, 07:223 ^w , 07:224-07:237, 07:239-07:245, 07:247-07:266, 07:268-07:294, 07:297-07:307, 12:16, 16:01:01-16:02:09, 16:06-16:28, 16:30N-16:32, 16:34, 16:36-16:39:01, 16:41, 16:43-16:47, 16:49-16:52, 16:54, 16:56-16:57, 18:01-18:06, A*24:96, A*24:106, A*24:174, B*08:16, B*46:25
96¹⁶	Negative control -		

¹Alleles are assigned by the presence of specific PCR product(s). However, the sizes of the specific PCR products may be helpful in the interpretation of HLA-C low resolution SSP typings. When the primers in a primer mix can give rise to HLA-specific PCR products of more than one length this is indicated if the size difference is more than 20 base pairs. Size differences of 20 base pairs or less are not given. For high resolution SSP kits the respective lengths of the HLA-specific PCR product(s) are given for the alleles amplified by these primer mixes. Nonspecific amplifications, i.e. a ladder or a smear of bands, may sometimes be seen. GC-rich

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primers have a higher tendency of giving rise to nonspecific amplifications than other primers. PCR fragments longer than the control bands may sometimes be observed. Such bands should be disregarded and do not influence the interpretation of the SSP typings.

PCR fragments migrating faster than the control bands, but slower than a 400 bp fragment may be seen in some gel read-outs. Such bands can be disregarded and do not influence the interpretation of the SSP typings.

Some primers may give rise to primer oligomer artifacts. Sometimes this phenomenon is an inherent feature of the primer pair(s) of a primer mix. More often it is due to other factors such as too low amount of DNA in the PCR reactions, taking too long time in setting up the PCR reactions, working at elevated room temperature or using thermal cyclers that are not pre-heated.

²The internal positive control primer pairs amplify segments of the human growth hormone gene. The two different control primer pairs give rise to either an internal positive control band of 1070 base pairs, for most wells, or a band of 800 base pairs, for some wells.

Well number 73 contains the primer pair giving rise to the shorter, 800 bp, internal positive control band in order to help in the correct orientation of the HLA-C low resolution typing.

In addition, wells number 74, 75, 77, 78, 80 to 82, 84 to 86, 89, 91 and 92 contain the primer pair giving rise to the shorter, 800 bp, internal positive control band in order to allow kit identification.

In the presence of a specific amplification the intensity of the control band often decreases.

³For several HLA Class I alleles 1st and/or 4th exon(s) and beyond, as well as intron nucleotide sequences, are not available. In these instances it is not known whether some of the primers of the SSP sets are completely matched with the target sequences or not. We assume that unknown sequences in these regions are conserved within allelic groups.

⁴Due to sharing of sequence motifs, primer mix 73 will amplify the B*39:76 and B*54:18 alleles, primer mix 85 will amplify the B*67:02, primer mix 87 will amplify the B*35:222, primer mix 88 will amplify the A*30:62 allele, primer mix 92 will amplify the B*14:03 allele and primer mix 95 will amplify the A*24:96, A*24:106, A*24:174, B*08:16 and B*46:25 alleles.

⁵HLA-specific PCR products shorter than 125 base pairs have a lower intensity and are less sharp than longer PCR products.

⁶Primer mix 74 will for most C*02 alleles give rise to two specific PCR fragments.

⁷Primer mix 76 will for most C*03 alleles give rise to two specific PCR fragments.

⁸Primer mix 81 will for most C*07 alleles give rise to two specific PCR fragments.

⁹Primer mix 82 will for most C*08 alleles give rise to multiple specific PCR fragments.

¹⁰Primer mix 89 will for most C*15 alleles give rise to two specific PCR fragments.

¹¹Primer mixes 84, 85 and 91 may have tendencies of unspecific amplifications.

¹²Primer mixes 88 and 90 have a tendency to giving rise to primer oligomer formation.

¹³Primer mixes 75, 78, 82, 87, 94 and 95 may yield less HLA-specific PCR fragments than the other HLA-C low resolution primer mixes.

¹⁴Primer mix 86 might faintly amplify most C*01 and the C*14 alleles.

¹⁵Primer mix 91 might generate a false band of about 500 base pairs. This band should be disregarded when interpreting HLA-C low resolution typings.

¹⁶Primer mix 96 contains a negative control, which will amplify more than 95% of HLA amplicons as well as the amplicons generated by control primer pairs. PCR product sizes range from 75 to 200 base pairs. The PCR product generated by the control primer pair is 430 base pairs.

‘w’, might be weakly amplified.

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Lot-specific information

INTERPRETATION TABLE																										
HLA-A low resolution SSP typing																										
Amplification patterns of the A*01:01 to A*80:03 alleles																										
		Well ⁶																								
		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	
Length of spec.		225	145	120	800	800	1070	800	1070	800	800	1070	800	1070	1070	1070	1070	1070	1070	800	800	800	800	800	1070	
PCR product(s)		415	365	255	215	175	415	365	255	215	175	415	365	255	215	175	415	365	255	215	175	415	365	255	215	175
Length of int.		800	800	1070	800	1070	800	1070	800	800	1070	800	1070	1070	1070	1070	1070	1070	800	800	800	800	800	1070		
pos. control ¹																										
5'-primer(s) ²		5'-ATA ^{3'} 363	5'-AgT ^{3'} 123	5'-CCT ^{3'} 103	5'-CTT ^{3'} 98	5'-ATA ^{3'} 363	5'-CCA ^{3'} 106	5'-TCT ^{3'} 78	5'-ATA ^{3'} 363	5'-ATA ^{3'} 363	5'-CCA ^{3'} 106	5'-CTA ^{3'} 98	5'-gCT ^{3'} 413	5'-gCT ^{3'} 413	5'-gCT ^{3'} 413	5'-gCT ^{3'} 413	5'-gCT ^{3'} 413	5'-gCT ^{3'} 413	5'-gCT ^{3'} 413	5'-gCT ^{3'} 413	5'-gCT ^{3'} 413	5'-gCT ^{3'} 413	5'-gCT ^{3'} 413	5'-gCT ^{3'} 413	5'-gCT ^{3'} 413	
3'-primer(s) ³		5'-Aga ^{3'} 545	5'-TCT ^{3'} 203	5'-gTg ^{3'} 292	5'-gga ^{3'} 240	5'-gCA ^{3'} 555	5'-CCA ^{3'} 527	5'-CCT ^{3'} 527	5'-CCA ^{3'} 527	5'-gCA ^{3'} 555	5'-CCA ^{3'} 527	5'-CTg ^{3'} 256	5'-CAA ^{3'} 368	5'-CCC ^{3'} 265	5'-ggt ^{3'} 534	5'-ggt ^{3'} 534	5'-ggt ^{3'} 534	5'-ggt ^{3'} 534	5'-ggt ^{3'} 534	5'-ggt ^{3'} 534	5'-ggt ^{3'} 534	5'-ggt ^{3'} 534	5'-ggt ^{3'} 534	5'-ggt ^{3'} 534	5'-ggt ^{3'} 534	
Well No.		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	



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Lot-specific information

Well No.		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24
HLA-A allele⁴	ser⁵																								
*01:01:01:01-01:01:22, 01:01:24-01:01:47, 01:01:49- 01:01:55, 01:02:01:04N, 01:06-01:07, 01:09-01:11N, 01:16N-01:18N, 01:20, 01:22N-01:27N, 01:29, 01:31N-01:33, 01:35-01:42, 01:44-01:50, 01:52N-01:78, 01:80-01:94, 01:96-01:98, 01:100-01:120, 01:122- 01:125, 01:127-01:130	A1, Null, -																								
*01:01:23, 01:01:48, 01:08, 01:14-01:15N, 01:30, 01:79, 01:99	A1, Null, -	1																							
*01:01:56	-	1			4									w											
*01:12, 01:19	A1, -	1		3																					
*01:13	A1	1			4							11		13		15									
*01:21, 01:126	A1, -	1		3	4																				
*01:28	-	1			4							11				15									
*01:43	-	1			4							10													
*01:51	-	1			4				8			10													
*01:95	-	1			4														17						
*01:121	-	1			4															19					
*02:01:01:01-02:01:15, 02:01:17-02:01:19, 02:01:21- 02:01:81, 02:01:83-02:16, 02:17:03-02:22:02, 02:24:01- 02:33, 02:36-02:45, 02:47, 02:49-02:54, 02:57-02:61, 02:63-02:64, 02:66-02:69, 02:71-02:77, 02:79:01- 02:97:02, 02:99, 02:101:01- 02:102, 02:104-02:128, 02:130-02:134, 02:136- 02:148, 02:150-02:168, 02:170-02:236, 02:238- 02:242, 02:244-02:308, 02:310-02:337, 02:339- 02:406, 02:408-02:414, 02:416-02:417	A2, Low A2, A203/A2 A210/A2 A2/blank, Null, -																								
*02:17:01-02:17:02	A2		2					w																	
*02:34-02:35:01, 02:35:03, 02:56:01-02:56:02, 02:62, 02:103	A2			2										13						20		22			
*02:35:02	A2													13						20		22			
*02:46, 02:70	A2		2																	20		22			
*02:48, 02:129	A2, -																			20		22			
*02:55	A2/A28		2						8													21		23	
*02:65, 02:407	A2/A19, -		2																	19					
*02:78	-		w		4															20		22			
*02:135	-		2											13											24
*02:149	-		2																			21			
*02:169	-		2		4																				
*02:237	-		2												14		16								
*02:243	-		2																18			21			
*02:309	-		2										12		14							21			24
*02:338	-		2	3																					
Well No.		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24

101.702.24/06– including *Taq* pol., IFU-01
 101.702.24u/06u – without *Taq* pol., IFU-02

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 “Instructions for Use” (IFU)

Lot No.: **64S**

Lot-specific information

Well No.		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24
HLA-A allele ⁴	ser ⁵																								
*03:01:01:01-03:01:18, 03:01:20-03:01:22, 03:01:24- 03:07, 03:09-03:11N, 03:13- 03:14, 03:16-03:17:02, 03:20- 03:23:02, 03:25-03:29, 03:31, 03:33-03:35, 03:37- 03:40, 03:42, 03:44-03:49, 03:51-03:56, 03:58, 03:60- 03:62, 03:64-03:71, 03:73- 03:74, 03:76-03:81, 03:83- 03:87, 03:90-03:94, 03:96- 03:106, 03:109-03:110, 03:112-03:134, 03:136- 03:141, 03:143-03:151, 03:153-03:166	A3, A3/blanc, Null, -			3										13											
*03:01:19	-			3									12	13											24
*03:01:23, 03:08, 03:32, 03:36N, 03:57, 03:59, 03:72, 03:89, 03:107-03:108, 03:111, 03:142	A3, Null, -			3																					
*03:12	A3			3	4																				
*03:15, 03:19, 03:30	A3			3		5									13										
*03:18, 03:135	-	1			4										13										
*03:24, 03:50	A3, -			3					8						13										
*03:41	-			3																					23
*03:43, 03:82	-			3											13	15		17							
*03:63	-			3								11			13										23
*03:75	-														13										23
*03:88, 11:130 ⁷	-			3	4							11													23
*03:95	-														13	14	16								
*03:152, 24:92 ⁸	-			3		5																			
*11:01:01-11:09, 11:12- 11:16, 11:18-11:24:02, 11:26- 11:27, 11:29-11:39, 11:41- 11:52Q, 11:54-11:59, 11:61- 11:93, 11:95-11:111, 11:114- 11:129, 11:131-11:138, 11:141-11:142	A11, Null, -				4								11												
*11:10	A11				4				8			11													
*11:11	-				4							11	12												
*11:17, 11:40	-				4						10	11													
*11:25, 11:60	A11, -				3	4									11										
*11:94, 11:112	-	1			4										11										
*11:113	-				4										11		15								
*11:139	-				4	5		7				11													
*23:01:01-23:13, 23:15- 23:56, 23:58	A23, Null, -					5	6																		
*23:14:01-23:14:02, 24:24, 24:71 ⁹	A23, A9, A24, -					5	6	7																	
*23:57	-					5																			21
Well No.		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24

101.702.24/06– including *Taq* pol., IFU-01
 101.702.24u/06u – without *Taq* pol., IFU-02

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Lot No.: **64S**

Lot-specific information

Well No.		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24
HLA-A allele⁴	ser⁵																								
*24:02:01:01-24:11N, 24:13:01-24:13:02, 24:17, 24:20-24:23, 24:25-24:43, 24:45N-24:50, 24:54-24:56, 24:58-24:63, 24:66-24:70, 24:72-24:81, 24:83N-24:91, 24:93, 24:95-24:113, 24:115- 24:137, 24:139-24:187, 24:189-24:203, 24:205- 24:210, 24:212, 24:214- 24:221, 24:223-24:227, 24:229-24:232N	A24, Low A24, A2403/A 24, A9, A24/A9, Null, -					5		7																	
*24:14-24:15, 24:51-24:53, 24:57, 24:64, 24:94, 24:114, 24:138, 24:188, 24:222N, 24:228, C*04:01:03 ¹⁰	A24, Cw4, Null, -					5																			
*24:18, 24:204, 24:213	A24/A3, -					5		7																23	
*24:19, 24:44	A9					5		7				11													
*24:82	-					5		7														21			
*25:01:01-25:04, 25:07- 25:12N, 25:14-25:16, 25:18- 25:22	A25, Null, -								8	9				13											
*25:05	A25								8	9		12	13							20					
*25:06	A25								8	9		12													
*25:13	-								8	9			13												24
*25:17	-									9			13												
*26:01:01-26:01:20, 26:01:22- 26:01:27, 26:08, 26:10- 26:15, 26:17-26:18, 26:20, 26:23-26:28, 26:31-26:33, 26:35-26:43:02, 26:45-26:48, 26:50-26:53, 26:55-26:63, 26:66-26:71N, 26:74-26:77, 26:79-26:85	A26, A10, Null, -								8		10			13											
*26:01:21, 26:04, 26:34, 26:73	A26, -								8		10														
*26:02, 26:29, 26:49	A26, -								8		10			w											
*26:03:01-26:03:02, 26:06, 26:21	A26, -								8			11	13											23	
*26:05	A26								8				13											23	
*26:07:01-26:07:02, 26:64	A26, -										10		13												
*26:09	A26								8		10	12													
*26:16	A26								7		10		13												
*26:19	-				4						10		13	14											
*26:22	A26								8		10		13	14								21			
*26:30	A26								8				13											23	24
*26:54	-								8		10	12	13								20				
*26:65	-								8		10		13												24
*26:72	-				4						10		13												
*26:78	-								8			11												23	
*29:01:01:01-29:06, 29:08N- 29:12, 29:15-29:27, 29:29- 29:38, 29:40-29:47, 29:50- 29:53	A29, Null, -														14										
*29:07, 29:49	A29, -					5	6								14										
*29:13, 29:39	-														14			17							
*29:14	-														14		16								
*29:28	-								8						14										
*29:48	-														14						18				
Well No.		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24

101.702.24/06– including *Taq* pol., IFU-01
101.702.24u/06u – without *Taq* pol., IFU-02

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Lot No.: **64S**

Lot-specific information

Well No.		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24
HLA-A allele⁴	ser⁵																								
*30:01:01-30:04:02, 30:06-30:07, 30:09-30:20, 30:22-30:54, 30:56-30:74	A30, Null, -															15									
*30:08	A30				4											15									
*30:55	-													13	15										
*31:01:02-31:02, 31:05-31:07, 31:09-31:28, 31:30-31:34, 31:36-31:40, 31:42-31:61, 31:63-31:74	A31, Null, -																16								
*31:03	A31											12			14	16									
*31:04	A31											12			14	16									24
*31:08, 33:53 ¹¹	A31/A24, -					5										16									
*31:29	-					5	6									16									
*31:35	-															15	16	17							
*31:41	-																16					21			
*31:62	-																16						22		
*32:01:01-32:01:13, 32:01:15-32:02, 32:07-32:14, 32:16-32:37, 32:39-32:41, 32:43-32:57	A32, Null, -									9								17							
*32:01:14, 32:03, 32:38, 74:07 ¹²	A32, A74, -																	17							
*32:04	A32/A3			3						9															
*32:05	A32					5										16	17								
*32:06	A32									9							17				21				
*32:15	A32								8	9							17	18							
*32:42	-									9					14		17								
*33:01:01-33:01:07, 33:03:01-33:12, 33:14-33:18:02, 33:20-33:21, 33:23, 33:25-33:37, 33:39-33:47, 33:49-33:50, 33:52, 33:54-33:68	A33, -																	18							
*33:13, 33:48	-									10								18							
*33:19	-					5	7											18							
*33:22	-																	18			21				
*33:24	-																	18					23		
*33:51	-								8									18							
*34:01:01-34:01:02, 34:05-34:06, 34:11	A34, A10, -								8			11	12												
*34:02:01-34:03, 34:07, 34:10N	A34, Null, -			3					8			11	12												
*34:04	A34			3					8			11	12		14										
*34:08	A34			3					8			11	12	13											
*34:09	-			3					8				12												24
*36:01, 36:03, 36:05	A36, -	1																					22		
*36:02	A36	1		3																			22	23	
*36:04	A36	1			4																		22		
*43:01	A43										10	12	13												
*66:01, 66:04-66:05, 66:07-66:08, 66:11, 66:13-66:15, 66:17-66:19	A66, A26, -								8			11	13												
*66:02-66:03, 66:16	A66, A10, -								8			12													24
*66:06	A66								8			11	13									21			
*66:09	-								8			11	13	14								21			
*66:10	-								8			11	w												
*66:12	-								8				13												24
*66:15	-								8				13												
Well No.		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24

101.702.24/06– including *Taq* pol., IFU-01
101.702.24u/06u – without *Taq* pol., IFU-02

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Lot No.: **64S**

Lot-specific information

Well No.		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24
HLA-A allele ⁴	ser ⁵																								
*68:01:01:01-68:04, 68:06-68:12, 68:13:02-68:14, 68:16-68:19, 68:21:01-68:24, 68:26-68:28, 68:30-68:44, 68:46-68:65, 68:67-68:70, 68:72-68:83, 68:85-68:100	A68, A28, Null, -								8												20				
*68:05, 68:15, 68:20	A68								8												20			23	
*68:13:01, 68:66	A68, -				4				8												20				
*68:25	A68								8												19	20			
*68:29	A68								8										18		20	21			
*68:45	-							7	8												20				
*68:71	-								8					13							20				
*68:84	-								8		10										20				
*69:01	A69								8														21		
*74:01-74:03, 74:05-74:06, 74:08-74:12N, 74:14N-74:17	A74, Null, -																				19				
*74:04	A74																		18	19					
*74:13	-													13						19					
*80:01:01:01-80:01:01:02, 80:03	A80, -								6															23	
*80:02	-								6			11													
B*07:81, B*08:52, B*18:67, B*38:41, B*53:05, B*53:16	B53, -												9												
B*18:27	-								6																
C*03:174, C*08:69, C*16:56	-				4																				
Well No.		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24

¹The internal positive control primer pairs amplify segments of the human growth hormone gene. The two different control primer pairs give rise to either an internal positive control band of 1070 base pairs, for most wells, or a band of 800 base pairs, for some wells.

Well number 1 contains the primer pair giving rise to the shorter, 800 bp, internal positive control band in order to help in the correct orientation of the HLA-A low resolution SSP typing.

In addition, wells number 2, 4, 6, 8, 9, 10, 12 and 19 to 23 contain the primer pair giving rise to the shorter, 800 bp, internal positive control band in order to allow kit identification.

²The nucleotide position, in the 1st, 2nd or 3rd exon, matching the specificity-determining 3'-end of the primer is given. Nucleotide numbering as on the [www.ebi.ac.uk, imgt, hla](http://www.ebi.ac.uk/imgt_hla) web site. The sequence of the 3 terminal nucleotides of the primer is given.

³The nucleotide position, in the 2nd or 3rd exon, matching the specificity-determining 3'-end of the primer is given in the anti-sense direction. Nucleotide numbering as on the www.ebi.ac.uk, imgt, hla web site. The sequence of the 3 terminal nucleotides of the primer is given.

⁴The sequence of the A*0105N has been shown to be identical to A*01:04N.

The A*01:34N allele has been renamed A*01:01:38L

The A*020116 allele has been renamed to A*02:134.

The A*020120 has been renamed to A*02:01:18.

The sequence of the A*02:01:82 allele has been shown to be identical to A*02:01:84.

The sequence of the A*0223 allele has been shown to be identical to A*02:22:01.

The sequence of the A*0298 allele has been shown to be identical to A*02:96.

The A*02:100 allele has never been assigned.

The A*1128 allele has been renamed to A*11:15:02.

The A*11:53 allele has been shown to be identical to the corrected A*11:02:01.

The sequence of the A*2401 allele has been shown to be in error.

The sequence of the A*2412 allele has been shown to be identical to A*24:08.

The A*2416 allele has been renamed to A*31:08.

The A*2465 allele has been renamed to A*24:13:02.

The A*24:211 allele has been renamed to A*24:135:02.

The A*26:44 allele has been renamed to A*26:43:02.

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Lot No.: 64S

Lot-specific information

The sequence of the A*3005 allele has been shown to be identical to A*30:04.

The A*3021 allele has been renamed to A*30:11:02.

The sequence of the A*31011 allele has been shown to be identical to A*31:01:02.

The sequence of the A*3302 allele has been shown to be identical to A*33:03:01.

The sequence of the A*33:38 allele has been shown to be identical to A*33:44.

⁵The serological reactivity of all HLA-A alleles is not known. In this table we use the expert-assigned serological grouping in Tissue Antigens (2009) 73:95-170 and the serological grouping of the sequence-defined allele.

⁶The primer pairs in wells 1, 2, 11 and 15 will in many samples give rise to two or three HLA-specific PCR fragments.

⁷The A*03:88 and the A*11:130 alleles will give rise to identical amplification patterns. These two alleles can be separated by the respective high resolution SSP primer sets.

⁸The A*03:152 and the A*24:92 alleles will give rise to identical amplification patterns. These two alleles can be separated by the respective high resolution SSP primer sets.

⁹The A*23:14:01-23:14:02 and the A*24:24 and 24:71 alleles will give rise to identical amplification patterns. These alleles can be separated by the respective high resolution SSP primer sets.

¹⁰The 24:14-24:15, 24:51-24:53, 24:57, 24:64, 24:94, 24:114, 24:138, 24:188, 24:222N, 24:228 and the C*04:01:03 alleles may be distinguished by the different sizes of the specific PCR products generated by primer mix 5.

¹¹The A*31:08 and A*33:53 alleles will give rise to identical amplification patterns. These two alleles can be separated by the respective high resolution SSP primer sets.

¹²The A*32:01:14, 32:03, 32:38 and the A*74:07 alleles will give rise to identical amplification patterns. These alleles can be separated by the respective high resolution SSP primer sets.

‘w’, may be weakly amplified.

101.702.24/06– including *Taq* pol., IFU-01
 101.702.24u/06u – without *Taq* pol., IFU-02

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Lot No.: **64S**

Lot-specific information

		INTERPRETATION TABLE																																																
		HLA-B low resolution SSP																																																
		Amplification patterns of the B*07:02 to B*83:01 alleles																																																
		Well																																																
		25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48	
Length of spec.		110	215	140	130	185	180	290	165	165	180	105	280	195	105	115	80	150	140	60	210	170	110	395	160	110	215	140	130	185	180	290	165	165	180	105	280	195	105	115	80	150	140	60	210	170	110	395	160	
PCR product(s)				235	265	235			330	390					435	150				400					425			235	265	235			330	390						435	150				400					425
Length of int. pos. control ¹		800	1070	1070	800	800	800	1070	1070	1070	800	1070	1070	1070	1070	1070	1070	800	1070	1070	800	800	1070	1070	800	1070	1070	800	800	1070	1070	1070	1070	800	1070	1070	1070	1070	1070	800	1070	1070	800	800	1070	1070	1070			
5'-primer(s) ²		5'-gAC 3' 540 5'-TgA 3' 527	5'-TCg 3' 97	5'-AgC 3' 363 5'-ggC 3' 209	5'-CCg 3' 103 5'-CCg 3' 103	5'-AAT 3' 363 5'-CCT 3' 103 5'-CCT 3' 103	5'-Agg 3' 418 5'-CCg 3' 103	5'-ggA 3' 45	5'-ATA 3' 412 5'-Tgg 3' 357 5'-ggA 3' 45	5'-AAA 3' 435 5'-ggA 3' 45	5'-TTA 3' 420	5'-TTA 3' 420 5'-AgA 3' 206	5'-gTC 3' 419	5'-gTC 3' 419 5'-TCT 3' 142	5'-gAC 3' 540 5'-ggA 3' 45	5'-Cgg 3' 161	5'-gCT 3' 167	5'-TCA 3' 355	5'-gAC 3' 206	5'-gTT 3' 368 5'-ggA 3' 45	5'-gTC 3' 368 5'-TCT 3' 142	5'-TTA 3' 420 5'-ggC 3' 409	5'-gAA 3' 246	5'-ggC 3' 44	5'-ggC 3' 44	5'-gCT 3' 605	5'-TgA 3' 272	5'-gCg 3' 312 5'-gTg 3' 309	5'-CgT 3' 193 5'-CgT 3' 193	5'-CTC 3' 559 5'-TAT 3' 246 5'-TAT 3' 246	5'-gCC 3' 572 5'-TAT 3' 246	5'-Tgg 3' 165	5'-gTg 3' 603 5'-gTC 3' 538 5'-CCT 3' 206	5'-gTg 3' 583 5'-Cag 3' 559 5'-TCC 3' 266	5'-CTC 3' 559	5'-gCg 3' 572 5'-Tgg 3' 272	5'-TAT 3' 3 ^d I	5'-gTC 3' 301	5'-gCT 3' 570 5'-CCg 3' 572 5'-gTC 3' 301 5'-gTC 3' 301	5'-gCT 3' 605 5'-ATC 3' 309 5'-TgC 3' 272	5'-Tgg 3' 272 5'-TgA 3' 272 5'-TCT 3' 234	5'-TCT 3' 204	5'-gCT 3' 463	5'-AgT 3' 312 5'-ggC 3' 302	5'-gTT 3' 259 5'-gTT 3' 259	5'-gTC 3' 538 5'-ggg 3' 311 5'-ggg 3' 311	5'-ggT 3' 544	5'-ggA 3' 317	5'-TgC 3' 272	5'-gCg 3' 477 5'-ggT 3' 302 5'-ggC 3' 302
3'-primer(s) ³		5'-gCT 3' 605	5'-TgA 3' 272 5'-Tgg 3' 272	5'-Cag 3' 559 5'-gCC 3' 312 5'-gTg 3' 309	5'-gTg 3' 583 5'-CgT 3' 193 5'-CgT 3' 193	5'-CTC 3' 559 5'-TAT 3' 246 5'-TAT 3' 246	5'-gCC 3' 572 5'-TAT 3' 246	5'-gTg 3' 603 5'-gTC 3' 538 5'-CCT 3' 206	5'-gTg 3' 583 5'-Cag 3' 559 5'-TCC 3' 266	5'-CTC 3' 559	5'-gCg 3' 572 5'-Tgg 3' 272	5'-TAT 3' 3 ^d I	5'-gTC 3' 301	5'-gCT 3' 570 5'-CCg 3' 572 5'-gTC 3' 301 5'-gTC 3' 301	5'-gCT 3' 605 5'-ATC 3' 309 5'-TgC 3' 272	5'-Tgg 3' 272 5'-TgA 3' 272 5'-TCT 3' 234	5'-TCT 3' 204	5'-gCT 3' 463	5'-AgT 3' 312 5'-ggC 3' 302	5'-gTT 3' 259 5'-gTT 3' 259	5'-gTC 3' 538 5'-ggg 3' 311 5'-ggg 3' 311	5'-ggT 3' 544	5'-ggA 3' 317	5'-TgC 3' 272	5'-gCg 3' 477 5'-ggT 3' 302 5'-ggC 3' 302	5'-gCT 3' 605	5'-TgA 3' 272 5'-Tgg 3' 272	5'-Cag 3' 559 5'-gCC 3' 312 5'-gTg 3' 309	5'-gTg 3' 583 5'-CgT 3' 193 5'-CgT 3' 193	5'-CTC 3' 559 5'-TAT 3' 246 5'-TAT 3' 246	5'-gCC 3' 572 5'-TAT 3' 246	5'-Tgg 3' 165	5'-gTg 3' 603 5'-gTC 3' 538 5'-CCT 3' 206	5'-gTg 3' 583 5'-Cag 3' 559 5'-TCC 3' 266	5'-CTC 3' 559	5'-gCg 3' 572 5'-Tgg 3' 272	5'-TAT 3' 3 ^d I	5'-gTC 3' 301	5'-gCT 3' 570 5'-CCg 3' 572 5'-gTC 3' 301 5'-gTC 3' 301	5'-gCT 3' 605 5'-ATC 3' 309 5'-TgC 3' 272	5'-Tgg 3' 272 5'-TgA 3' 272 5'-TCT 3' 234	5'-TCT 3' 204	5'-gCT 3' 463	5'-AgT 3' 312 5'-ggC 3' 302	5'-gTT 3' 259 5'-gTT 3' 259	5'-gTC 3' 538 5'-ggg 3' 311 5'-ggg 3' 311	5'-ggT 3' 544	5'-ggA 3' 317	5'-TgC 3' 272	5'-gCg 3' 477 5'-ggT 3' 302 5'-ggC 3' 302
Well No.		25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48	

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 101.702.24u/06u – without *Taq* pol., IFU-02

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HLA-B allele ⁴	ser. ⁵																								
*07:02:01-07:02:31, 07:02:33-07:02:38, 07:05:01-07:06, 07:10, 07:12-07:15, 07:18:01-07:18:02, 07:21-07:23, 07:26, 07:29-07:31, 07:34-07:35, 07:39, 07:41-07:46, 07:49N, 07:52, 07:55-07:59, 07:61-07:64, 07:66-07:68:03, 07:70-07:72, 07:74-07:76, 07:79-07:80, 07:82-07:83, 07:86-07:99, 07:101-07:121, 07:124-07:130, 07:132, 07:135N-07:138, 07:140-07:145, 07:147-07:148, 07:150-07:154, 07:156-07:161N, 07:163, 07:166-07:173, 07:175-07:178, 07:181N, 07:183-07:190	B7, B7/blank, B7/B42, Null, -	25																							48
*07:02:32	-	25				29																			48
*07:03, 07:08, 07:16, 07:32, 07:37	B703/B7, B7/blank	25																							48
*07:04, 07:25, 07:146	B7, -	25													38										48
*07:07, 07:77	B7, -	25																							48
*07:09, 07:11, 07:17, 07:162	B7, -	25											36												48
*07:19, 07:33:01, 07:40, 07:53, 07:122, 07:139, 07:165	B7/42, -																								48
*07:20, 07:24, 07:131	B7/blank, -	25		27																					48
*07:27	-	25										35								44					
*07:28	B7	25				30																			48
*07:36, 07:81, 07:149	B7, -	25																							
*07:38	-	25																							
*07:47	B7	25																							48
*07:48, 07:51, 07:155, 07:164	B7, -																								48
*07:50	-	25										35													48
*07:54, 07:123	B7, -	25																							48
*07:60	-			27																					48
*07:65	-	25																	42						
*07:69, 07:85	-	25																						47	48
*07:73	-	25															40								48
*07:78	-	25										34													48
*07:84	-	25																							48
*07:100	-			27																					48
*07:133	-	25																							48
*07:134	-	25																	42						48
*07:174	-	25																							48
Well No.		25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48

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																								ser. ⁵	HLA-B allele ⁴	
			52																			71	72	B7, B7/blank, B7/B42, Null, -	*07:02:01-07:02:31, 07:02:33-07:02:38, 07:05:01-07:06, 07:10, 07:12-07:15, 07:18:01-07:18:02, 07:21-07:23, 07:26, 07:29-07:31, 07:34-07:35, 07:39, 07:41-07:46, 07:49N, 07:52, 07:55-07:59, 07:61-07:64, 07:66-07:68:03, 07:70-07:72, 07:74-07:76, 07:79-07:80, 07:82-07:83, 07:86-07:99, 07:101-07:121, 07:124-07:130, 07:132, 07:135N-07:138, 07:140-07:145, 07:147-07:148, 07:150-07:154, 07:156-07:161N, 07:163, 07:166-07:173, 07:175-07:178, 07:181N, 07:183-07:190	
			52																			71	72	-	*07:02:32	
																							71	72	B703/B7, B7/blank	*07:03, 07:08, 07:16, 07:32, 07:37
		51	52																				71	72	B7, -	*07:04, 07:25, 07:146
			52																				71		B7, -	*07:07, 07:77
			52																				71	72	B7, -	*07:09, 07:11, 07:17, 07:162
			52																				71		B7/42, -	*07:19, 07:33:01, 07:40, 07:53, 07:122, 07:139, 07:165
			52																				71	72	B7/blank, -	*07:20, 07:24, 07:131
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			52																				71	72	B7	*07:28
			52																				70	72	B7, -	*07:36, 07:81, 07:149
																							70	72	-	*07:38
			w																				71	72	B7	*07:47
			52																				71	72	B7, -	*07:48, 07:51, 07:155, 07:164
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			52										62										71	72	B7, -	*07:54, 07:123
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			52				56								64				w				71	72	-	*07:65
																							71	72	-	*07:69, 07:85
			52																				71	72	-	*07:73
			52																				71		-	*07:78
			52																				71		-	*07:84
			52																				69	71	-	*07:100
			52										61										71	72	-	*07:133
			52																w				71	72	-	*07:134
			52																				71	72	-	*07:174
																							71	72	-	*07:174
49	50	51	52	53	54	55	56	57	58	59	60	61	62	63	64	65	66	67	68	69	70	71	72	Well No.		

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Well No.		25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48
HLA-B allele ⁴	ser. ⁵																								
*07:179	-	25																							
*07:180	-	25																							47
*07:182N	Null	25																							48
*08:01:01-08:01:20, 08:05, 08:08N, 08:10-08:11, 08:15, 08:18-08:19N, 08:22-08:24, 08:27, 08:29-08:31, 08:33-08:34, 08:39, 08:41-08:48, 08:51, 08:53:01-08:53:02, 08:56:01- 08:59:02, 08:61, 08:63-08:64, 08:66-08:69, 08:71-08:73, 08:75, 08:80-08:83, 08:86N, 08:90- 08:93, 08:95-08:100, 08:104- 08:106	B8, Null, -	26							32																48
*08:02-08:03, 08:52, 08:78	B8, -	26							32																
*08:04	B8/blank	26							32			35													48
*08:07, 08:14, 08:74, 08:77, 08:108	B8, -	26																							48
*08:09, 08:84	B8, -	26							32																48
*08:12:01-08:12:03, 08:16	B8	26							32																48
*08:13, 08:20, 08:40, 08:70	B8, -	26							32																48
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*08:32	B8	26							32										42						48
*08:35	-	26							32			36													48
*08:36	-	26							32																48
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*08:49	-	26																41			44				48
*08:55	-	26							32														45		48
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*08:87	-	26					30																		48
*08:88, 08:102	-	26							32									40							48
*08:89, 08:107	-	26										36													48
*08:103	-	26							32																48
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Well No.		25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48

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49	50	51	52	53	54	55	56	57	58	59	60	61	62	63	64	65	66	67	68	69	70	71	72	Well No.	
																							ser. ⁵	HLA-B allele ⁴	
			52																			71	72	-	*07:179
																						70	72	-	*07:180
			52														67					71	72	Null	*07:182N
		51																				71	72	B8, Null, -	*08:01:01-08:01:20, 08:05, 08:08N, 08:10-08:11, 08:15, 08:18-08:19N, 08:22-08:24, 08:27, 08:29-08:31, 08:33-08:34, 08:39, 08:41-08:48, 08:51, 08:53:01-08:53:02, 08:56:01-08:59:02, 08:61, 08:63-08:64, 08:66-08:69, 08:71-08:73, 08:75, 08:80-08:83, 08:86N, 08:90-08:93, 08:95-08:100, 08:104-08:106
		51																			70	72	B8, -	*08:02-08:03, 08:52, 08:78	
		51																				71	72	B8/blank	*08:04
		51																				71	72	B8, -	*08:07, 08:14, 08:74, 08:77, 08:108
		51		54																		71		B8, -	*08:09, 08:84
		51																				71		B8	*08:12:01-08:12:03, 08:16
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		51																				71	72	-	*08:17, 08:54
		51																				71	72	B8	*08:21
		51																				71	72	B8	*08:25
		51																				71	72	B8, -	*08:26, 08:50, 08:62, 08:85, 08:94, 42:07 ⁶
		51																				71	72	B8, -	*08:28, 08:37
		51																	68			71	72	B8	*08:32
		51																				71	72	-	*08:35
		51																				71	72	-	*08:36
		51											62									71	72	-	*08:38, 08:101
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		51																				71	72	-	*08:55
		51		53																		71	72	-	*08:60, 08:76
		51																				71	72	-	*08:65
		51																				71	72	-	*08:79
		51		53									63									71	72	-	*08:87
		51																				71	72	-	*08:88, 08:102
		51																				71		-	*08:89, 08:107
		51																				71		-	*08:103
													62									70		B13, Null, -	*13:01:01-13:01:06, 13:17, 13:20, 13:22:01-13:23, 13:25, 13:28-13:29, 13:43, 13:50, 13:52, 13:57, 13:60-13:61, 13:63N
49	50	51	52	53	54	55	56	57	58	59	60	61	62	63	64	65	66	67	68	69	70	71	72	Well No.	

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HLA-B allele ⁴	ser. ⁵																									
*13:02:01-13:02:05, 13:02:07-13:02:15, 13:08, 13:15, 13:18-13:19, 13:27, 13:30, 13:32-13:34, 13:37-13:38, 13:40, 13:42, 13:44-13:45, 13:47, 13:49N, 13:54-13:56N, 13:64-13:66	B13, Null, -				27 28						34															
*13:02:06	B13				27 28						34															
*13:03	B49/B15				27 28																					
*13:04, 13:10	B49/B15, B13				27 28								36													
*13:06	B13				27 28														41							
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*13:39	-				28						34								41							
*13:41	-				27 28						34															
*13:46	-				27 28				32																	
*13:48	-				27 28																					
*13:53	-				27 28																					
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*14:02:05, 14:02:08, 14:30	B65, -				28		30																		47	
*14:02:09, 14:05-14:06:02, 14:13	B14						30																		47	48
Well No.		25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48	

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																							ser. ⁵	HLA-B allele ⁴	
													62								70			B13, Null, -	*13:02:01-13:02:05, 13:02:07-13:02:15, 13:08, 13:15, 13:18-13:19, 13:27, 13:30, 13:32-13:34, 13:37-13:38, 13:40, 13:42, 13:44-13:45, 13:47, 13:49N, 13:54-13:56N, 13:64-13:66
	50												62								70			B13	*13:02:06
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													62								70			B49/B15, B13	*13:04, 13:10
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										w			62							69	70			-	*13:31
								57													70			-	*13:36
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*14:21	-				28																				48	
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																						69	71	B62, Null, -	*15:01:19, 15:28, 15:120, 15:149N, 15:246N
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49	50	51	52	53	54	55	56	57	58	59	60	61	62	63	64	65	66	67	68	69	70	71	72	Well No.	

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*15:03:03	B72							31	32			35	36							43					
*15:04	B62							31					36							43					
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*15:09	B70								32	33					38					43					
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*15:12, 15:14, 15:19, 15:270	B76, -							31					36	37						43					
*15:13:01-15:13:02	B77, -							31					36		38			41		43					
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													62									71		B72, B70/blank, -	*15:03:01-15:03:02, 15:03:04, 15:47:01-15:47:02, 15:49, 15:61, 15:98, 15:103, 15:123, 15:127, 15:132, 15:151, 15:156, 15:158, 15:173, 15:210, 15:220, 15:235, 15:242, 15:266, 15:274
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*15:36	-			w				31					36					41		43					
*15:42	B15							31												43					
*15:43, 15:256	B15, -							31					36							43					
*15:45	B62			27				31												43					
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*15:54	B72								32			35	36							43					
*15:55	B15			27				31					36							43					
*15:57	B62							31					36							43					
*15:62	-								32			35	36					41		43					
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*15:66	B62							31					36		38					43					
*15:68	-			27								35	36												
*15:69	B72								32			35	36							43		45			
*15:73	B62							31												43					
*15:74	B72								32				36							43					
*15:76	-							31					36							43					
*15:77	B62						30	31										41		43					
*15:80	B70								32				36		38			41		43					
*15:83	B62							31	32											43					
*15:85	B62							31					36					41		43					
*15:86	-							31												43					
*15:89	B77			w				31					36					41		43					
*15:91, 15:131	-								32			35	36	37						43					
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*15:106	-				28			31	32				36					41		43					
*15:116	B62							31					36							43					
*15:124	B71								32				36		38					43					
*15:137	-							31												43					
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*15:142	-			26				31					36							43					
*15:143	-							31	32				36							43					
*15:144	-							31					36					41		43					
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*15:161	-								32				36	37	38					43					
*15:180	-			26									36												
*15:186	-								32				36		38					43		45			
*15:189	-						30	31					36		38					43					
*15:194	-							31					36					41		43					
*15:202, 15:239	-							31					36						42	43					
*15:222	-									33			36		38					43					
*15:224	-							31												43					
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								57														71		B15	*15:55	
				w								62								69	71			B62	*15:57	
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																						71		B71, -	*15:64:01-15:64:02	
												62								69	71			B62	*15:66	
												62								69	71			-	*15:68	
												62										71		B72	*15:69	
												62			65	67				69	71			B62	*15:73	
												62										71		B72	*15:74	
			52					w												69	71			-	*15:76	
												62								69	71			B62	*15:77	
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				54								62										71		B62	*15:83	
50												62								69	71			B62	*15:85	
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												62										71		-	*15:138	
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												61								69	71			-	*15:143	
								57												69	71			-	*15:144	
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																				69	71			-	*15:180	
																						71		-	*15:186	
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50							57															71		-	*15:194	
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																					70			-	*15:230	
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49	50	51	52	53	54	55	56	57	58	59	60	61	62	63	64	65	66	67	68	69	70	71	72			Well No.

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HLA-B allele ⁴	ser. ⁵																								
*15:241	-	25						31					36							43					
*15:243	-								32	33					38					43					
*15:253	-								32			35								43					
*15:255	-								32				36												
*15:259	-							31	32			35	36							43					
*15:268	-							31		33			36		38					43					
*18:01:01:01-18:03, 18:05-18:08, 18:10-18:11, 18:13-18:15, 18:17N-18:18, 18:20-18:21, 18:23N-18:25, 18:27-18:28, 18:30-18:36, 18:38-18:40, 18:42-18:43, 18:45-18:47, 18:50-18:53, 18:55, 18:57-18:60, 18:62-18:65, 18:68, 18:70-18:71, 18:73-18:78, 18:80-18:89	B18, B18/blank, Null, -												36		39				42						
*18:04	B18												36		39				42						
*18:09	B18												36		39										
*18:12	B18												36		39				42						
*18:19	B18												36		39				42						
*18:22, 18:69	B18, -												36		39			41	42						
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*18:67	-												36		39										
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													62							69	71			-	*15:241	
													62									71			-	*15:243
													62									71			-	*15:253
			52										62									71			-	*15:255
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HLA-B allele ⁴	ser. ⁵																									
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																ser. ⁵	HLA-B allele ⁴														
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				52				56				62				71				B2708/B27/B7, -		*27:08, 27:26, 27:40, 27:42, 27:44, 27:89									
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				52				56								69				70				B27		*27:25					
												62				70				B27		*27:29									
				52				56				60				62				70				B27		*27:30					
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HLA-B allele ⁴	ser. ⁵																								
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																								ser. ⁵	HLA-B allele ⁴
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HLA-B allele ⁴	ser. ⁵																								
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																							HLA-B allele ⁴			
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															64					68	69	71		-	*35:185	
					52																	71		-	*35:186	
																						71		-	*35:191	
																						71		-	*35:198	
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																				68				-	*35:222	
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HLA-B allele ⁴	ser. ⁵																								
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																								HLA-B allele ⁴	
													62								70			B37/B27	*37:02
				53		55							62								70			B37, -	*37:04:01-37:04:02
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HLA-B allele ⁴	ser. ⁵																								
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*39:39:01	B39					29						35											45		48
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*40:06:01:01-40:06:04, 40:06:06-40:06:07, 40:70	B61, -																								48
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49																61 62	71	B60, Null, -	*40:01:01-40:01:06, 40:01:08-40:01:10, 40:01:12-40:01:17, 40:01:19-40:01:29, 40:07, 40:51, 40:66, 40:73, 40:79, 40:124:01, 40:139-40:140, 40:146-40:147, 40:150, 40:152-40:153, 40:155N, 40:172, 40:186					
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50																61 62	71	B61, B61/B41, Null, -	*40:02:01-40:02:17, 40:04, 40:06:05, 40:39, 40:89, 40:94, 40:97, 40:122, 40:142N-40:144N, 40:214, 40:229					
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49 50 51 52	53 54 55 56	57 58 59 60	61 62 63 64	65 66 67 68	69 70 71 72							Well No.												

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HLA-B allele ⁴	ser. ⁵																									
*40:09, 40:11:01-40:11:02, 40:18, 40:24, 40:27:01-40:27:02, 40:29, 40:35, 40:37, 40:50, 40:56-40:57, 40:64, 40:78, 40:82, 40:85, 40:90-40:91, 40:99, 40:104, 40:107, 40:111, 40:115, 40:119-40:120, 40:133Q, 40:145, 40:169, 40:173, 40:176, 40:180-40:181, 40:189, 40:200, 40:202-40:203, 40:205-40:206, 40:211, 40:220, 40:224-40:226	B61, -																									?
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																									ser. ⁵	HLA-B allele ⁴
												61	62									71			B61, -	*40:09, 40:11:01-40:11:02, 40:18, 40:24, 40:27:01-40:27:02, 40:29, 40:35, 40:37, 40:50, 40:56-40:57, 40:64, 40:78, 40:82, 40:85, 40:90-40:91, 40:99, 40:104, 40:107, 40:111, 40:115, 40:119-40:120, 40:133Q, 40:145, 40:169, 40:173, 40:176, 40:180-40:181, 40:189, 40:200, 40:202-40:203, 40:205-40:206, 40:211, 40:220, 40:224-40:226
49												61	62									71			B60	*40:10:01
49	?											61	62									71			-	*40:10:02, 40:135
49													62										71		B60/B48	*40:12
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49													62										71		B40/B15	*40:21
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49												61	62										71		B40	*40:23
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49	?											61	62										71	72	B60, -	*40:30, 40:34, 40:160:01-40:160:02
49	50	51	52	53	54	55	56	57	58	59	60	61	62	63	64	65	66	67	68	69	70	71	72	Well No.		

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HLA-B allele ⁴	ser. ⁵																								
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*40:58	B40				28																				?
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																							HLA-B allele ⁴		
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49	?											61	62									71		B60, -	*40:38, 40:52, 40:222
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	?											61	62									71		B61, -	*40:44, 40:75, 40:86, 40:103, 40:127, 40:131, 40:162, 40:165, 40:167, 40:190, 40:230
49												62										71		B60	*40:46
49	?											62									70			B40, -	*40:47, 40:188
49	?											61	62				67					71		B60	*40:48
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49												61	62									71	72	B40	*40:59
49												61	62									71		-	*40:60
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49	?											61	62									71		B60, -	*40:74, 40:149, 40:210
49	?											62												B60	*40:76
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	?											61	62									71	72	-	*40:98
	?											61	62									71		-	*40:105
	?								58	60		62										70		-	*40:109
	?											62										70		-	*40:110
49	?								58	60		62										70		-	*40:117
49	?			53								61	62									71		-	*40:132, 40:178
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49												62										71	72	-	*40:137
49												61	62									71		-	*40:138
	?								59			61	62									71		-	*40:148, 40:161
	?											62									70			-	*40:157, 40:201
	?											61	62									71		-	*40:158
	?											61	62									71		-	*40:159
49	?		52									61										71		-	*40:166
49												61	62									71		-	*40:170
	?											61	62									71		-	*40:174
49	?											61	62									71		-	*40:183, 40:198
	?											61	62									71		-	*40:184
49												62										71		-	*40:185
49	?											62										71		-	*40:208
												62										71		-	*40:209
49												61	62									71		-	*40:215
49	?	51		53								61	62									71		-	*40:231
49	50	51	52	53	54	55	56	57	58	59	60	61	62	63	64	65	66	67	68	69	70	71	72	Well No.	

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HLA-B allele ⁴	ser. ⁵																								
*41:01, 41:06-41:07, 41:12, 41:14, 41:16-41:17, 41:20-41:22, 41:25	B41, -				28				32																48
*41:02:01-41:02:05, 41:11, 41:13, 41:19, 41:23, 41:27	B41, -				28				32																48
*41:03:01-41:03:02, 41:15	B41, -				28				32																48
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*42:01:01-42:02, 42:06, 42:10, 42:12, 42:15, 42:17-42:18	B42, -								32																48
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*42:08	B42								32																48
*42:09	B42												36												48
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*44:02:22, 44:12, 44:171N	B44, Null, -				28													41							
Well No.		25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48

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 101.702.24u/06u – without *Taq* pol., IFU-02

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Lot-specific information

49	50	51	52	53	54	55	56	57	58	59	60	61	62	63	64	65	66	67	68	69	70	71	72	ser. ⁵	Well No. HLA-B allele ⁴
		51			54							61	62									71		B41, -	*41:01, 41:06-41:07, 41:12, 41:14, 41:16-41:17, 41:20-41:22, 41:25
		51										61	62									71	72	B41, -	*41:02:01-41:02:05, 41:11, 41:13, 41:19, 41:23, 41:27
		51										61	62									71		B41, -	*41:03:01-41:03:02, 41:15
		51										61	62									71	72	B41, -	*41:04, 41:10, 41:18
		51			54							?	62									71		B41	*41:05
		51										61	62									71		B41	*41:08
					54							61	62									71		B45, -	*41:09, 45:02-45:03 ¹⁰
		51										61	62									71	72	-	*41:24
		51			54								62											-	*41:26
		51	52																			71	72	B42, -	*42:01:01-42:02, 42:06, 42:10, 42:12, 42:15, 42:17-42:18
		51	52		54																	71		B42	*42:04
		51	52																			71	72	B42	*42:05:01-42:05:02
			52																			71		B42	*42:08
		51	52																			71	72	B42	*42:09
		51										62										71	72	-	*42:11
		51	52	53																		71	72	-	*42:13
		51	52																			71		-	*42:14
		51	52																			71	72	-	*42:16, 42:20
			52																			71	72	-	*42:19
					53							62	63									70		B44, Null, -	*44:02:01:01-44:02:21, 44:02:23-44:02:29, 44:11, 44:19N, 44:21-44:24, 44:27:01-44:27:02, 44:33-44:34:02, 44:48, 44:52N, 44:55, 44:59:01-44:59:02, 44:63, 44:66-44:68, 44:71-44:74, 44:80, 44:84, 44:86-44:87, 44:89, 44:93, 44:101-44:102, 44:104, 44:112-44:113, 44:116, 44:118-44:119, 44:121, 44:126:01-44:126:02, 44:137, 44:142, 44:148-44:149N, 44:151-44:152, 44:162, 44:168, 44:170, 44:172-44:173
					53							63										70		B44, Null, -	*44:02:22, 44:12, 44:171N
49	50	51	52	53	54	55	56	57	58	59	60	61	62	63	64	65	66	67	68	69	70	71	72		Well No.

101.702.24/06– including *Taq* pol., IFU-01
 101.702.24u/06u – without *Taq* pol., IFU-02

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HLA-B allele ⁴	ser. ⁵																									
*44:03:01-44:03:06, 44:03:08-44:03:15, 44:03:17-44:03:18, 44:04-44:05:04, 44:13, 44:26, 44:28:01-44:30, 44:32, 44:35-44:36, 44:38-44:39, 44:42, 44:45, 44:51, 44:56N, 44:58N, 44:61N, 44:69-44:70, 44:76-44:79, 44:82, 44:85, 44:88, 44:92, 44:94, 44:96, 44:98, 44:105, 44:107-44:109, 44:114-44:115, 44:117, 44:120, 44:122-44:125, 44:128, 44:133, 44:136, 44:139, 44:141, 44:143, 44:147, 44:153-44:155, 44:157, 44:159-44:161, 44:163-44:165, 44:167, 44:174-44:175	B44, Null, -				28													41								
*44:03:07, 44:03:16, 44:03:19, 44:07, 44:81, 44:103, 44:111, 44:134	B44, -																	41								
*44:06	B44																	41								
*44:08	B44			w														41								
*44:09	B45				28													41								
*44:10	B44				28						35							41								
*44:14	B44				28				32									41								
*44:15	B12				28				32		35															
*44:16, 44:91, 44:132	B47/B44, -				28	30												41								
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*44:18	B44				28				32		35															
*44:20, 44:100	B44, -				28				32																	
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*44:37:01-44:37:02, 44:64:01-44:64:02	B44, -				28	30												41								
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*44:41:01-44:41:02, 44:53, 44:99, 44:138Q	B44, -				28																					
*44:44	B44										35						40	41								
*44:46, 44:75, 44:129	B12, -				28													41								
*44:47, 44:65	B44, -				28																					
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*44:54	B44				27	28																				
*44:57	-				w													41								
*44:60, 44:110	-				27	28												41								
*44:62	-				28				32	33								41								
Well No.		25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48	

101.702.24/06– including *Taq* pol., IFU-01
 101.702.24u/06u – without *Taq* pol., IFU-02

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49	50	51	52	53	54	55	56	57	58	59	60	61	62	63	64	65	66	67	68	69	70	71	72	Well No.		
																									ser. ⁵	HLA-B allele ⁴
				53								62								70					B44, Null, -	*44:03:01-44:03:06, 44:03:08-44:03:15, 44:03:17-44:03:18, 44:04-44:05:04, 44:13, 44:26, 44:28:01-44:30, 44:32, 44:35-44:36, 44:38-44:39, 44:42, 44:45, 44:51, 44:56N, 44:58N, 44:61N, 44:69-44:70, 44:76-44:79, 44:82, 44:85, 44:88, 44:92, 44:94, 44:96, 44:98, 44:105, 44:107-44:109, 44:114-44:115, 44:117, 44:120, 44:122-44:125, 44:128, 44:133, 44:136, 44:139, 44:141, 44:143, 44:147, 44:153-44:155, 44:157, 44:159-44:161, 44:163-44:165, 44:167, 44:174-44:175
				53								62								70					B44, -	*44:03:07, 44:03:16, 44:03:19, 44:07, 44:81, 44:103, 44:111, 44:134
				53	54					60		63						68		70					B44	*44:06
				53								62	63							70					B44	*44:08
				53								61	62	63								71			B45	*44:09
				53								62				65				70					B44	*44:10
				53								62								70					B44	*44:14
					54							62				65				70					B12	*44:15
				53								62	63							70					B47/B44 , -	*44:16, 44:91, 44:132
				53								62								70					B44, -	*44:17, 44:43:01-44:43:02, 44:144
					54					58		62				65				70					B44	*44:18
				53	54							62	63							70					B44, -	*44:20, 44:100
				53						58	60	62								70					B44	*44:25, 44:50
49				53								62								70					B44	*44:31
												62								70					B44, -	*44:37:01-44:37:02, 44:64:01-44:64:02
				53								62								70					B44, -	*44:40, 44:130
				53								62	63							70					B44, -	*44:41:01-44:41:02, 44:53, 44:99, 44:138Q
				53								62	63							70					B44	*44:44
				53								61	62									71			B12, -	*44:46, 44:75, 44:129
				53								62								70					B44, -	*44:47, 44:65
				53								62	63							70					B44	*44:49
				53								62								70					B44	*44:54
				53								62								70					-	*44:57
				53								62								70					-	*44:60, 44:110
				53								62								70					-	*44:62
49	50	51	52	53	54	55	56	57	58	59	60	61	62	63	64	65	66	67	68	69	70	71	72		Well No.	



101.702.24/06– including *Taq* pol., IFU-01
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HLA-B allele ⁴	ser. ⁵																								
*44:83, 44:145	-																	41							
*44:90	-				28													41							
*44:95	-				28													41							
*44:97	-				28													41							
*44:106	-			27	28																				
*44:127	-				28													41							
*44:131	-																	41							
*44:140	-				28							35						41							
*44:146	-				28													41							
*44:150	-	25			28	30												41							
*44:156	-		26									35						41							
*44:166	-				28				32																
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*45:01, 45:05, 45:07, 45:11-45:14	B45, -				28				32		35														48
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*45:06	B45				28				32		35														48
*45:08	-				28				32																48
*45:09	-				28				32				36	37											48
*45:10	-				28				32	34															48
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*46:01:07	-								31			36													
*46:02	B46								31			36													
*46:03, 46:08, 46:13:01-46:13:03, 46:19, 46:21:01-46:21:02, 46:25	B46, -								31			36													
*46:06	-								31			36													
*46:11	B22								31																
*46:12	-			27					31			36													
*46:17	-								31			36	37												
*46:18	-								31																
*46:32	-								31			36													
*46:33	-								31			36						41							
*47:01:01:01-47:01:02, 47:06-47:08	B47, -				28																				
*47:02	B47				28																				
*47:03	B47				28																				
*47:04-47:05	B17, -				28	29																			
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Well No.		25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48

101.702.24/06– including *Taq* pol., IFU-01
 101.702.24u/06u – without *Taq* pol., IFU-02

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49	50	51	52	53	54	55	56	57	58	59	60	61	62	63	64	65	66	67	68	69	70	71	72	ser. ⁵	Well No. HLA-B allele ⁴
				53								62	63								70			-	*44:83, 44:145
			52	53			56					61	62	63								71		-	*44:90
				53					58	60		62	63									70		-	*44:95
			52	53			56					62	63									70		-	*44:97
				53								62	63									70		-	*44:106
				53								62	63											-	*44:127
				53								61	62	63								71		-	*44:131
				53								62				65						70		-	*44:140
				53								62									69	70		-	*44:146
												62										70	72	-	*44:150
				53								62										70		-	*44:156
		51										62										70	72	-	*44:166
49				53								62	63									70		-	*44:169
				54								61	62			65						71		B45, -	*45:01, 45:05, 45:07, 45:11-45:14
				54								61	62			65						71		B21	*45:04
		52		54								61	62			65						71		B45	*45:06
				54								61	62	64								71		-	*45:08
				54								61	62									71		-	*45:09
				54								61	62									71		-	*45:10
			52			55															69	71		B46, Null, -	*46:01:01-46:01:06, 46:01:08-46:01:09, 46:04-46:05, 46:07N, 46:09-46:10, 46:14-46:16, 46:20, 46:22-46:24, 46:26-46:31, 46:34-46:38
	50		52			55															69	71		-	*46:01:07
			w			55															69	71		B46	*46:02
			52			55																71		B46, -	*46:03, 46:08, 46:13:01-46:13:03, 46:19, 46:21:01-46:21:02, 46:25
49			52			55																71		-	*46:06
			52			55										65						71		B22	*46:11
			52			55															69	71		-	*46:12
			52			55															69	71		-	*46:17
			52			55								64								71		-	*46:18
			52			55			w												69	71		-	*46:32
50			52			55																71		-	*46:33
	50					56						62										70		B47, -	*47:01:01:01-47:01:02, 47:06-47:08
	50					56						61	62									71		B47	*47:02
	50					56						w	62									70	w	B47	*47:03
	50											62										70		B17, -	*47:04-47:05
								57				62										71	72	B48, -	*48:01:01-48:01:04, 48:07, 48:09, 48:11, 48:19-48:20, 48:22, 48:27, 48:29-48:30
49	50	51	52	53	54	55	56	57	58	59	60	61	62	63	64	65	66	67	68	69	70	71	72		Well No.

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HLA-B allele ⁴	ser. ⁵																								
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*48:03:01-48:03:02	B48											35													48
*48:04, 48:24	B48, -											35													48
*48:05, 48:08	B48, -	25										35													48
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*48:14	B48											35	36												48
*48:15	B48	25										35													48
*48:16	B48											35													48
*48:17	-											35													48
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*48:23	-											35	36												48
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*49:01:02, 49:11	B49, -				28																				
*49:02	B49				28																				
*49:03	B49																								
*49:04-49:05	B49				28								36												
*49:07	-				28							34													
*49:18	-				28						33														
*49:20	-				28							35													
*49:21	-				28																				
*49:25	-		26																						
*49:26	-															40							46	47	
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*50:06	-				28																				48
*50:07	-																								48
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*50:12	-				28																				48
*50:14	-				28						33														48
*50:15	-				28																				48
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*50:31	-				28						34														48
Well No.		25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48

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49	50	51	52	53	54	55	56	57	58	59	60	61	62	63	64	65	66	67	68	69	70	71	72	ser. ⁵	Well No. HLA-B allele ⁴	
													62									71		B48/B70	*48:02:01-48:02:03, 48:25	
49													62									71		B48	*48:03:01-48:03:02	
								57					62									71		B48, -	*48:04, 48:24	
													62									71	72	B48, -	*48:05, 48:08	
								57														71	72	-	*48:06	
													62									71	72	B48	*48:10, 48:12	
													62									71		-	*48:13	
													62									71	72	B48	*48:14	
								57					62									71	72	B48	*48:15	
								57														71	72	B48	*48:16	
49													62									71	72	-	*48:17	
								57					62								70	72	B48	*48:18		
													62									71		-	*48:21, 48:26	
49													62									71		-	*48:23	
								57					62									71	72	-	*48:28	
									58	59			62			65						70		B49, Null, -	*49:01:01, 49:01:03-49:01:04, 49:06, 49:08-49:10, 49:12-49:17, 49:19N, 49:22-49:24	
								58					62			65						70		B49, -	*49:01:02, 49:11	
								59					62			65						70		B49	*49:02	
								59					62			65						70		B49	*49:03	
								58	59				62									70		B49	*49:04-49:05	
								58	59				62									70		-	*49:07	
								58	59				62									70		-	*49:18	
								58	59				62			65						70		-	*49:20	
								58	59				62			65								-	*49:21	
								58	59				62			65						70		-	*49:25	
								59								65						70		-	*49:26	
									59			61	62			65							71		B50, -	*50:01:01-50:01:03, 50:04- 50:05, 50:08, 50:10-50:11, 50:13, 50:16, 50:18-50:19, 50:32
									59			61	62			65							71		B45	*50:02
									59				62			65							71		-	*50:06
									59			61	62			65							71		-	*50:07
									59			61	62										71		-	*50:09, 50:20
												61	62			65							71		-	*50:12
									59			61	62										71		-	*50:14
									59			61				65							71		-	*50:15
												61	62			65							71		-	*50:17
									59			61	62										71		-	*50:31
49	50	51	52	53	54	55	56	57	58	59	60	61	62	63	64	65	66	67	68	69	70	71	72		Well No.	

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Well No.		25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48	
HLA-B allele ⁴	ser. ⁵																									
*51:01:01, 51:01:03, 51:01:05-51:01:08, 51:01:10-51:01:20, 51:01:22-51:01:24, 51:01:26-51:01:39, 51:01:41-51:02:01, 51:02:03, 51:02:05-51:03, 51:07:01, 51:09:01, 51:11N-51:12, 51:13:02-51:14, 51:16-51:19, 51:21-51:23, 51:26-51:33, 51:38-51:41N, 51:43, 51:48-51:53, 51:55, 51:57-51:58, 51:60, 51:65-51:67, 51:69-51:77, 51:79-51:80, 51:82-51:88, 51:90-51:91, 51:94-51:96, 51:98N, 51:100, 51:102, 51:105, 51:107-51:111, 51:113-51:115, 51:117, 51:120-51:130, 51:133-51:134, 51:136-51:138, 51:140, 51:142, 51:145-51:146, 51:149N-51:152	B51, B5102/B51, B5103/B51, B51/blank, Null, -									33																
*51:01:02, 51:02:02, 51:05, 51:07:02, 51:09:02, 51:89, 51:103, 51:116, 51:119, 51:132	B51, B5102/B51, -									33																
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*51:01:09	B51									33															48	
*51:01:21, 51:01:25, 51:24:03-51:24:04	B51, -									33															48	
*51:01:40, 51:54, 51:78:01-51:78:02	-									33																
*51:04, 51:46, 51:56:01-51:56:02, 51:139	B51, -									33								41								
*51:06:01-51:06:02, 51:59, 51:135	B51, -									33																
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*51:10	B51																								48	
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*51:36	B51								32																	
*51:37, 51:63	B51, -									33			36													
*51:42	-																	41								
*51:45	-											36														
*51:61:01-51:61:02	-									33																
*51:62	-																									
*51:64	-				27					33																
*51:68	-			26						33																
Well No.		25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48	

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 101.702.24u/06u – without *Taq* pol., IFU-02

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																							ser. ⁵	HLA-B allele ⁴	
					54					59	60								68		70			B51, B5102/B 51, B5103/B 51, B51/blank, Null, -	*51:01:01, 51:01:03, 51:01:05-51:01:08, 51:01:10-51:01:20, 51:01:22-51:01:24, 51:01:26-51:01:39, 51:01:41-51:02:01, 51:02:03, 51:02:05-51:03, 51:07:01, 51:09:01, 51:11N-51:12, 51:13:02-51:14, 51:16-51:19, 51:21-51:23, 51:26-51:33, 51:38-51:41N, 51:43, 51:48-51:53, 51:55, 51:57-51:58, 51:60, 51:65-51:67, 51:69-51:77, 51:79-51:80, 51:82-51:88, 51:90-51:91, 51:94-51:96, 51:98N, 51:100, 51:102, 51:105, 51:107-51:111, 51:113-51:115, 51:117, 51:120-51:130, 51:133-51:134, 51:136-51:138, 51:140, 51:142, 51:145-51:146, 51:149N-51:152
										59	60								68		70			B51, B5102/B 51, -	*51:01:02, 51:02:02, 51:05, 51:07:02, 51:09:02, 51:89, 51:103, 51:116, 51:119, 51:132
					54					59	60								68		70			B51, B5102/B 51, -	*51:01:04, 51:02:04, 51:13:01, 51:24:01, 51:34-51:35, 51:92, 51:99, 51:131, 51:143
										59	60								68		70			B51	*51:01:09
					54					59	60								68		70			B51, -	*51:01:21, 51:01:25, 51:24:03-51:24:04
										59									68		70			-	*51:01:40, 51:54, 51:78:01-51:78:02
					54	55					60								68		70			B51, -	*51:04, 51:46, 51:56:01-51:56:02, 51:139
					54						60								68		70			B51, -	*51:06:01-51:06:02, 51:59, 51:135
					54					59	60								68		70			B51, Null, -	*51:08, 51:20, 51:44N, 51:141
					54						60								68		70			B51	*51:10
											60					65			68		70			-	*51:15
					54					59	60								68		70			B51	*51:24:02
					54					59	60								68		70			B51	*51:36
					54					59	60								68		70			B51, -	*51:37, 51:63
				53	54						60								68		70			-	*51:42
					54						60								68		70			-	*51:45
					54					59	60								68		69	70		-	*51:61:01-51:61:02
					54						60					65		67	68		70			-	*51:62
					54						60								68		70			-	*51:64
					54					59	60								68		70			-	*51:68



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Well No.		25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48	
HLA-B allele ⁴	ser. ⁵																									
*51:81	-																									
*51:93, 51:144	-																									
*51:97	-								32	33			36													
*51:101	-									33													45			
*51:104, 51:118N, 51:147	Null, -									33																
*51:106	-									33																
*51:112	-									33																
*51:148	-			27																						
*52:01:01:01-52:01:01:02, 52:01:03, 52:01:06-52:01:08, 52:01:11-52:01:14, 52:01:16- 52:01:17, 52:04-52:05, 52:07- 52:08, 52:10:01-52:13, 52:15, 52:17-52:18, 52:22-52:24, 52:27- 52:31	B52, -									33																
*52:01:02, 52:01:04, 52:01:09, 52:02:01-52:03, 52:06:01- 52:06:02, 52:09	B52, -									33																
*52:01:05, 52:01:15, 52:14	B52, -																									
*52:01:10	-									33													46			
*52:16	-									33	35															
*52:19	-								32	33																
*52:20	-									33																
*52:21	-									33																
*52:25	-																									
*52:26	-						30			33																
*53:01:01-53:01:08, 53:05, 53:08:01-53:08:02, 53:10, 53:16, 53:18, 53:20-53:21, 53:23-53:27, 53:29	B53, -												36					41								
*53:02	B53												36					41								
*53:03, 53:09, 53:11-53:13	B53/B35												36					41								
*53:04, 53:07, 53:19	B53, -																	41								
*53:06	B53/B51												36					41								
*53:14	-			27									36													
*53:15	-												36					41								
*53:17:01-53:17:02	-												36					41								
*53:22	-												36	37				41								
*53:28	-									33			36					41								
*53:30, 57:45, 57:51	-				28								36					41								
*54:01:01, 54:01:03-54:02, 54:05N, 54:07-54:08N, 54:10, 54:13, 54:16-54:19, 54:21-54:25, 54:27-54:28	B54, Null, -																									
Well No.		25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48	

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 101.702.24u/06u – without *Taq* pol., IFU-02

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49	50	51	52	53	54	55	56	57	58	59	60	61	62	63	64	65	66	67	68	69	70	71	72	Well No.	
																							ser. ⁵	HLA-B allele ⁴	
				54							60								68	70			-	*51:81	
										59	60								68	70			-	*51:93, 51:144	
				54						59	60								68	70			-	*51:97	
				54						59	60								68	70			-	*51:101	
				54						59	60										70		Null, -	*51:104, 51:118N, 51:147	
				54						59	60					65			68	70			-	*51:106	
				54					58	59	60										70		-	*51:112	
											60								68	70			-	*51:148	
										59	60		62								70		B52, -	*52:01:01:01-52:01:01:02, 52:01:03, 52:01:06-52:01:08, 52:01:11-52:01:14, 52:01:16- 52:01:17, 52:04-52:05, 52:07- 52:08, 52:10:01-52:13, 52:15, 52:17-52:18, 52:22-52:24, 52:27- 52:31	
				54						59	60		62								70		B52, -	*52:01:02, 52:01:04, 52:01:09, 52:02:01-52:03, 52:06:01- 52:06:02, 52:09	
										59	60		62								70		B52, -	*52:01:05, 52:01:15, 52:14	
										59	60		62								70		-	*52:01:10	
										59	60		62								70		-	*52:16	
				54						59	60		62								70		-	*52:19	
										59			62								70		-	*52:20	
				54						59	60		62								69	70		-	*52:21
										59	60		62			65					70		-	*52:25	
										59	60		62								70		-	*52:26	
											60								68	70			B53, -	*53:01:01-53:01:08, 53:05, 53:08:01-53:08:02, 53:10, 53:16, 53:18, 53:20-53:21, 53:23-53:27, 53:29	
					55						60								68	70			B53	*53:02	
																			68	70			B53/B35	*53:03, 53:09, 53:11-53:13	
											60								68	70			B53, -	*53:04, 53:07, 53:19	
				54	55						60								68	70			B53/B51	*53:06	
											60								68	70			-	*53:14	
											60								68	70	72		-	*53:15	
											60		62								70		-	*53:17:01-53:17:02	
				53							60								68	70			-	*53:22	
					55						60		62								70		-	*53:28	
								58		60											70		-	*53:30, 57:45, 57:51	
			52				56						63	64								71	B54, Null, -	*54:01:01, 54:01:03-54:02, 54:05N, 54:07-54:08N, 54:10, 54:13, 54:16-54:19, 54:21-54:25, 54:27-54:28	
49	50	51	52	53	54	55	56	57	58	59	60	61	62	63	64	65	66	67	68	69	70	71	72	Well No.	

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Well No.		25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48	
HLA-B allele ⁴	ser. ⁵																									
*54:01:02, 55:01:07, 55:02:01-55:02:06, 55:07, 55:10, 55:12, 55:16, 55:19, 55:26, 55:30, 55:35, 55:37, 55:39, 55:41-55:43, 55:47-55:48, 55:50, 55:57 ¹¹	B55, B54, -																									
*54:03	B22																									
*54:04, 54:15	B54, -																									
*54:06	-												36													
*54:09, 54:14	-												36													
*54:11	B54																								48	
*54:12	-																									
*54:20	-																									
*54:26	-										34															
*55:01:01-55:01:06, 55:01:08-55:01:10, 55:03, 55:05, 55:11, 55:15, 55:25, 55:29, 55:31, 55:33, 55:36, 55:38, 55:44-55:45, 55:52-55:55N	B55, Null, -																									
*55:04, 55:08, 55:13, 55:27, 55:46, 55:49, 56:01:05, 56:15, 56:19N, 56:22 ¹²	B55, B56, Null, -																									
*55:09, 55:24	B22, B55										34															
*55:14	-												36					41								
*55:17, 55:28, 55:58	B55, -																									
*55:18	-											35														
*55:20	B22								32																	
*55:21	B55																									
*55:22	B22										34															
*55:23, 55:32, 56:18, 56:31-56:32 ¹³	B55, -												36													
*55:34	-																									
*55:40	-																									
*55:51	-				27																					
*55:56	-								32																	
*56:01:01-56:01:04, 56:08, 56:14, 56:16, 56:20:01, 56:24, 56:26-56:30, 56:34-56:36, 56:38N	B56, Null, -																									
*56:02, 56:04	B56																									
*56:03	B22/15												36													
*56:05:01	B56										33															
*56:05:02	B56										33															
*56:06	B78										33								42							
*56:07	B56																									
Well No.		25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48	

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 101.702.24u/06u – without *Taq* pol., IFU-02

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			52				56							64								71		B55, B54, -	*54:01:02, 55:01:07, 55:02:01- 55:02:06, 55:07, 55:10, 55:12, 55:16, 55:19, 55:26, 55:30, 55:35, 55:37, 55:39, 55:41- 55:43, 55:47-55:48, 55:50, 55:57 ¹¹
			52				56						63		65							71		B22	*54:03
			52				56						63									71		B54, -	*54:04, 54:15
			52				56						63							69		71		-	*54:06
			52				56						63									71		-	*54:09, 54:14
			52				56						63									71		B54	*54:11
			52				56		58				63	64							70			-	*54:12
			52				56			59			63	64								71		-	*54:20
			52				56						63									71		-	*54:26
			52				56			59				64								71		B55, Null, -	*55:01:01-55:01:06, 55:01:08- 55:01:10, 55:03, 55:05, 55:11, 55:15, 55:25, 55:29, 55:31, 55:33, 55:36, 55:38, 55:44- 55:45, 55:52-55:55N
			52				56															71		B55, B56, Null, -	*55:04, 55:08, 55:13, 55:27, 55:46, 55:49, 56:01:05, 56:15, 56:19N, 56:22 ¹²
			52				56			59												71		B22, B55	*55:09, 55:24
			52				56											66				71		-	*55:14
			52				56			59												71		B55, -	*55:17, 55:28, 55:58
													62		64							71		-	*55:18
		51	52		54		56															71		B22	*55:20
			52				56		w					64						69		71		B55	*55:21
			52				56															71		B22	*55:22
			52				56															71		B55, -	*55:23, 55:32, 56:18, 56:31- 56:32 ¹³
			52				56						62		64							71		-	*55:34
			52				56			59			62		64							71		-	*55:40
			52				56															71		-	*55:51
			52		54		56								64							71		-	*55:56
			52				56									65						71		B56, Null, -	*56:01:01-56:01:04, 56:08, 56:14, 56:16, 56:20:01, 56:24, 56:26-56:30, 56:34-56:36, 56:38N
			52				56									65		67				71		B56	*56:02, 56:04
			52				56													69		71		B22/15	*56:03
			52				56			59				64								71		B56	*56:05:01
			52				56			59												71		B56	*56:05:02
			52				56			59				64					w			71		B78	*56:06
			52				56									65					70			B56	*56:07
49	50	51	52	53	54	55	56	57	58	59	60	61	62	63	64	65	66	67	68	69	70	71	72		Well No.

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HLA-B allele ⁴	ser. ⁵																								
*56:09	B56												36					41							
*56:10	B55																								
*56:11-56:12	B56, B22																	41							
*56:13	B56								32																
*56:17, 56:33	B56, -																								
*56:20:02	-																								48
*56:21	-									33															
*56:23	-																								
*56:25, 56:37	-																								
*56:39	-																								
*57:01:01-57:01:04, 57:01:06- 57:01:14, 57:06, 57:08, 57:10, 57:15-57:16, 57:18-57:20, 57:22- 57:23, 57:25-57:27, 57:29-57:30, 57:33-57:38, 57:40-57:41, 57:43- 57:44, 57:48-57:50, 57:52-57:56, 57:58, 57:60-57:62, 57:64	B57, -												36					41							
*57:01:05, 57:11, 57:13, 57:21, 57:31, 57:47	B57, -												36												
*57:02:01-57:03:02, 57:17, 57:28N, 57:32, 57:39, 57:42, 57:46, 57:57, 57:63	B57, Null, -																	41							
*57:04	B57						30											41							
*57:05	B57																	41							
*57:07	B57																	41							
*57:09	B57								32									41							
*57:12	B57																	41							
*57:14	-												36					41							
*57:24	-												36					41							
*57:59	-												36					41							
*58:01:01-58:01:02, 58:01:04- 58:01:12, 58:04-58:05, 58:10N- 58:15, 58:19, 58:21-58:24, 58:29, 58:31N-58:33, 58:35, 58:37, 58:39N-58:40, 58:42	B58, Null, -												36					41							
*58:01:03, 58:02, 58:06, 58:16:01, 58:25-58:26, 58:38	B58, -												36												
*58:07	B58												36	37											
*58:08:01	B17/B5									33															
*58:08:02	-									33															
*58:09	B17												36					41							
*58:17N	Null												36					41							
*58:18	-				27								36												
*58:20	-																						45		
Well No.		25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48

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49	50	51	52	53	54	55	56	57	58	59	60	61	62	63	64	65	66	67	68	69	70	71	72	Well No.	
																								ser. ⁵	HLA-B allele ⁴
			52				56															71		B56	*56:09
			52				56							64			67					71		B55	*56:10
			52				56															71		B56, B22	*56:11-56:12
			52		54		56									65						71		B56	*56:13
																65						71		B56, -	*56:17, 56:33
			52				56									65						71		-	*56:20:02
			52				56		58	59												70		-	*56:21
														64								71		-	*56:23
			52				56			59						65						71		-	*56:25, 56:37
			52				56	w								65						71		-	*56:39
											60						66					70		B57, -	*57:01:01-57:01:04, 57:01:06-57:01:14, 57:06, 57:08, 57:10, 57:15-57:16, 57:18-57:20, 57:22-57:23, 57:25-57:27, 57:29-57:30, 57:33-57:38, 57:40-57:41, 57:43-57:44, 57:48-57:50, 57:52-57:56, 57:58, 57:60-57:62, 57:64
											60						66					70		B57, -	*57:01:05, 57:11, 57:13, 57:21, 57:31, 57:47
											60						66					70		B57, Null, -	*57:02:01-57:03:02, 57:17, 57:28N, 57:32, 57:39, 57:42, 57:46, 57:57, 57:63
											60						66					70		B57	*57:04
	50										60						66					70		B57	*57:05
					53						60						66					70		B57	*57:07
					53						60						66					70		B57	*57:09
																	66					71		B57	*57:12
						55					60						66					70		-	*57:14
					53						60						66					70		-	*57:24
49											60						66					70		-	*57:59
											60							67				70		B58, Null, -	*58:01:01-58:01:02, 58:01:04-58:01:12, 58:04-58:05, 58:10N-58:15, 58:19, 58:21-58:24, 58:29, 58:31N-58:33, 58:35, 58:37, 58:39N-58:40, 58:42
											60							67				70		B58, -	*58:01:03, 58:02, 58:06, 58:16:01, 58:25-58:26, 58:38
											60							67				70		B58	*58:07
					54					59	60							67				70		B17/B5	*58:08:01
										59	60							67				70		-	*58:08:02
						55					60							67				70		B17	*58:09
																		67				70		Null	*58:17N
											60							67				70		-	*58:18
											60							67				70		-	*58:20
49	50	51	52	53	54	55	56	57	58	59	60	61	62	63	64	65	66	67	68	69	70	71	72	Well No.	

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 101.702.24u/06u – without *Taq* pol., IFU-02

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Lot-specific information

Well No.		25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48
HLA-B allele ⁴	ser. ⁵																								
*58:27	-																								
*58:28, 58:34	-																	41							
*58:36	-												36					41							
*59:01:01:01-59:01:01:02, 59:05	B59, -																								
*59:02-59:03	B59, -																								
*59:04	-																								
*67:01:01, 67:03	B67, -					29																	45		48
*67:01:02-67:02	B67, -																						45		48
*73:01-73:02	B73, -																								48
*78:01:01-78:01:02, 78:02:02-78:03, 78:07	B78, -									33									42						
*78:02:01, 78:04	B78, B35									33									42						
*78:05	-									33									42						
*78:06	-									33															
*81:01	B81																								
*81:02	B81																								48
*81:03-81:06	Null, -																								
*82:01-82:03	B82, -								32			35							43						
*83:01	-																		41						
A*23:31, A*24:106, C*07:231, C*16:10	-					30																			
A*24:174	-													37											
A*26:68, A*68:56, C*02:56, C*06:20, C*12:50	-																								
C*01:30, C*12:87	-				28																				
C*01:73	-							31																	
C*02:06, C*02:47	Cw2, -																								
C*02:23, C*04:77	-	25																							
C*03:05, C*03:25, C*03:27, C*03:143, C*03:167	Cw3, Cw10, -			27																					
C*03:19	Cw3																								
C*03:102	-																		41						
C*03:129, C*17:16	-																								
C*03:179	-																			43					
C*06:72	-																								
C*07:02:30, C*08:16:02	-							31																	
C*07:46	Cw7								32																
C*07:302	-																				44				
C*15:02:04	-																								
C*15:25	-																								
C*15:39	-																								
C*15:51	-																							45	
Well No.		25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48

101.702.24/06– including *Taq* pol., IFU-01
 101.702.24u/06u – without *Taq* pol., IFU-02

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Lot-specific information

49	50	51	52	53	54	55	56	57	58	59	60	61	62	63	64	65	66	67	68	69	70	71	72	ser. ⁵	Well No. HLA-B allele ⁴
										60								67		70				-	*58:27
										60								67		70				-	*58:28, 58:34
	50									60							66			70				-	*58:36
									58					64						70				B59, -	*59:01:01:01-59:01:01:02, 59:05
									58											70				B59, -	*59:02-59:03
									58							65				70				-	*59:04
			52																		71			B67, -	*67:01:01, 67:03
			52																		71			B67, -	*67:01:02-67:02
			52																		69	71		B73, -	*73:01-73:02
									59					64					68		71			B78, -	*78:01:01-78:01:02, 78:02:02-78:03, 78:07
									59												71			B78, B35	*78:02:01, 78:04
									59		62										71			-	*78:05
									59		62										71			-	*78:06
			52				56	57													71	72		B81	*81:01
			52					57													71	72		B81	*81:02
			52					57													71	72		Null, -	*81:03-81:06
			52				56									65					71			B82, -	*82:01-82:03
			52	53			56							63								71		-	*83:01
																								-	A*23:31, A*24:106, C*07:231, C*16:10
																								-	A*24:174
																				69				-	A*26:68, A*68:56, C*02:56, C*06:20, C*12:50
																								-	C*01:30, C*12:87
	50					55																		-	C*01:73
																		w						Cw2, -	C*02:06, C*02:47
																								-	C*02:23, C*04:77
																								Cw3, Cw10, -	C*03:05, C*03:25, C*03:27, C*03:143, C*03:167
																65								Cw3	C*03:19
															65									-	C*03:102
49																								-	C*03:129, C*17:16
																								-	C*03:179
																	66							-	C*06:72
																								-	C*07:02:30, C*08:16:02
																								Cw7	C*07:46
																								-	C*07:302
														64										-	C*15:02:04
				53																				-	C*15:25
						55																		-	C*15:39
																								-	C*15:51
49	50	51	52	53	54	55	56	57	58	59	60	61	62	63	64	65	66	67	68	69	70	71	72		Well No.

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 101.702.24u/06u – without *Taq* pol., IFU-02

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Lot-specific information

¹The internal positive control primer pairs amplify segments of the human growth hormone gene. The two different control primer pairs give rise to either an internal positive control band of 1070 base pairs, for most wells, or a band of 800 base pairs, for some wells.

Well number 25 contains the primer pair giving rise to the shorter, 800 bp, internal positive control band in order to help in the correct orientation of the HLA-B low resolution typing.

In addition, wells number 28 to 30, 34, 41, 44, 45, 52, 54, 55, 59, 66 and 72 contain the primer pair giving rise to the shorter, 800 bp, internal positive control band in order to allow kit identification.

²The nucleotide position, in the 1st, 2nd or 3rd exon or in the 1st intron, matching the specificity-determining 3'-end of the primer is given. Nucleotide numbering as on the www.ebi.ac.uk, imgt, hla web site. The sequence of the 3 terminal nucleotides of the primer is given.

³The nucleotide position, in the 2nd and 3rd exon or the 3rd intron, matching the specificity-determining 3'-end of the primer is given in the anti-sense direction. Nucleotide numbering as on the www.ebi.ac.uk, imgt, hla web site. The sequence of the 3 terminal nucleotides of the primer is given.

⁴The sequence of the B*0701 allele has been shown to be in error.

The sequence of the B*08:06 allele has been shown to be identical to B*08:20.

The sequence of the B*1305 allele has been shown to be identical to B*13:04.

The B*1324 allele has been renamed B*13:22:02

The B*150105 allele has been corrected and renamed B*15:120

The B*1522 allele has been renamed B*35:43.

The sequence of the B*1541 allele has been shown to be identical to B*15:39.

The B*1559 allele has been renamed B*35:44.

The B*15:100 allele has never been assigned.

The sequence of the B*1816 allele has been shown to be identical to B*18:14.

The sequence of the B*27051 allele has been shown to be identical to B*27:05:02.

The sequence of the B*2722 allele has been shown to be identical to the corrected B*27:06 sequence.

The B*3573 allele has been renamed B*35:08:03.

The B*35:43:02 allele has been renamed B*35:185.

The sequence of the B*39012 allele has been shown to be identical to B*39:01:01:01.

The sequence of the B*3921 allele has been shown to be identical to B*39:24.

The sequence of the B*4017 allele has been shown to be identical to B*40:16.

The sequence of the B*4041 allele has been shown to be identical to B*40:40.

The sequence of the B*4203 allele has never been assigned.

The sequence of the B*4401 allele has been shown to be identical to B*44:02:01:01.

The sequence of the B*5003 allele has been shown to be identical to B*50:02.

The sequence of the B*5125 allele has been shown to be identical to B*51:22.

The B*5147 allele has been renamed B*51:09:02.

The sequence of the B*5506 allele has been shown to be identical to B*55:04.

The sequence of the B*5803 allele has never been assigned.

The sequence of the B*58:30 allele has been shown to be identical to B*58:01:01.

The B*7901 allele has been renamed B*15:18:01.

The B*9530 allele has been renamed B*15:27:02.

⁵The serological reactivity of all HLA-B alleles is not known. In this table we use the expert-assigned serological grouping in Tissue Antigens (2009) 73:95-170 and the serological grouping of the sequence-defined allele.

⁶The B*08:26, 08:50, 08:62, 08:85, 08:94 and the 42:07 alleles give rise to identical amplification patterns with the HLA-B low resolution primer set. These alleles can be separated by the respective high resolution primer sets.

⁷The B*13:21, 13:35 and 13:59 and the B*44:135 and 44:158 alleles give rise to identical amplification patterns with the HLA-B low resolution primer set. These alleles can be separated by the respective high resolution primer sets.

⁸The B*14:08 and the B*39:25N, 39:30, 39:32-39:34, 39:47, 39:50, 39:74 and 39:82 alleles give rise to identical amplification patterns with the HLA-B low resolution primer set. These alleles can be separated by the respective high resolution primer sets.

⁹The B*18:29 and 18:72 and the B*35:32:01-35:32:02, 35:37, 35:53N, 35:64:01-35:64:02, 35:68:01-35:68:02, 35:99, 35:118-35:119 and 35:174 alleles give rise to identical amplification

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patterns with the HLA-B low resolution primer set. These alleles can be separated by the respective high resolution primer sets.

¹⁰The B*41:09 and the B*45:02-45:03 alleles give rise to identical amplification patterns with the HLA-B low resolution primer set. These alleles can be separated by the respective high resolution primer sets.

¹¹The B*54:01:02 and the B*55:01:07, 55:02:01-55:02:06, 55:07, 55:10, 55:12, 55:16, 55:19, 55:26, 55:30, 55:35, 55:37, 55:39, 55:41-55:43, 55:47-55:48, 55:50 and 55:57 alleles give rise to identical amplification patterns with the HLA-B low resolution primer set. These alleles can be separated by the respective high resolution primer sets.

¹²The B*55:04, 55:08, 55:13, 55:27, 55:46, 55:49 and the 56:15, 56:19N and 56:22 alleles give rise to identical amplification patterns with the HLA-B low resolution primer set. These alleles can be separated by the respective high resolution primer sets.

¹³The B*55:23 and 55:32 and the B*56:18 and 56:31-56:32 alleles give rise to identical amplification patterns with the HLA-B low resolution primer set. These alleles can be separated by the respective high resolution primer sets.

‘ser’, serological HLA specificity.

‘w’, might be weakly amplified.

‘?’, nucleotide sequence information not available for the primer matching sequence.

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 101.702.24u/06u – without *Taq* pol., IFU-02

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Lot-specific information

		INTERPRETATION TABLE																							
		HLA-C low resolution SSP typing																							
		Amplification patterns of the C*01:02 to C*18:06 alleles																							
		Well ⁵																							
		73	74	75	76	77	78	79	80	81	82	83	84	85	86	87	88	89	90	91	92	93	94	95	96
Length of spec.		150	90																						
PCR product(s)		300	270	200	130																				
Length of int. pos. control ¹		800	800	800	800	1070	800	800	1070	800	800	1070	800	800	800	1070	800	800	1070	800	800	1070	800	800	1070
5'-primer(s) ²		89	47	105	355	105	47	105	28	47	105	361	201	97	98	98	98	201	201	201	47	355	105	97	
		98	89	89	459	112	176	176	2 nd	648	176	419	218	361	368	527	409	361	2 nd	361	361	412	459	97	
		5'-CTT	5'-GAA	5'-GAA	5'-TCA	5'-CCT	5'-AGG	5'-GCA	5'-TCA	5'-CAC	5'-GCA	5'-GTC	5'-ggA	5'-AgT	5'-gTg	5'-TgA	5'-ggC	5'-CCA	5'-CCA	5'-AgT	5'-ATA	5'-TCA	5'-gCT	5'-TCg	
		3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	
		703	703	703	703	703	703	703	703	703	703	703	703	703	703	703	703	703	703	703	703	703	703	703	
		5'-CTA	5'-CTA	5'-CTA	5'-CTA	5'-CTA	5'-CTA	5'-CTA	5'-CTA	5'-CTA	5'-CTA	5'-CTA	5'-CTA	5'-CTA	5'-CTA	5'-CTA	5'-CTA	5'-CTA	5'-CTA	5'-CTA	5'-CTA	5'-CTA	5'-CTA	5'-CTA	
		3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	
3'-primer(s) ³		142	176	343	589	343	201	302	213	302	302	474	289	218	312	311	270	341	512	302	302	201	213		
		5'-TgA	5'-ACT	5'-C	5'-CTT	5'-T	5'-CTT	5'-ggT	5'-Cgg	5'-CAT	5'-CCC	5'-CAA	5'-gCA	5'-AgC	5'-CCA	5'-AgA	5'-gCA	5'-T	5'-gTC	5'-CCA	5'-ggT	5'-CTC	5'-Cgg	5'-gTT	
		201	559	343	589	343	218	302	420	863	595	304	477	289	538	459	317	3rd	343	538	527	559	289	213	
		5'-CTC	5'-CTC	5'-g	5'-CTC	5'-g	5'-gCT	5'-gCA	5'-gCT	5'-CAT	5'-CCC	5'-CAA	5'-gCA	5'-AgC	5'-TCT	5'-AgA	5'-gCA	5'-g	5'-gTC	5'-CCA	5'-CCg	5'-CTC	5'-Cgg	5'-TCT	
		201	861																						
		5'-CTC	5'-TCg																						
		3	3																						
		5'-CTC	5'-TCg																						
		3	3																						
		530	527	527	527	527	527	527	527	527	527	527	527	527	527	527	527	527	527	527	527	527	527	527	
		5'-CCA	5'-CCg	5'-CCg	5'-CCg	5'-CCg	5'-CCg	5'-CCg	5'-CCg	5'-CCg	5'-CCg	5'-CCg	5'-CCg	5'-CCg	5'-CCg	5'-CCg	5'-CCg	5'-CCg	5'-CCg	5'-CCg	5'-CCg	5'-CCg	5'-CCg	5'-CCg	
		3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	
		5'-CCA	5'-CCg	5'-CCg	5'-CCg	5'-CCg	5'-CCg	5'-CCg	5'-CCg	5'-CCg	5'-CCg	5'-CCg	5'-CCg	5'-CCg	5'-CCg	5'-CCg	5'-CCg	5'-CCg	5'-CCg	5'-CCg	5'-CCg	5'-CCg	5'-CCg	5'-CCg	
		3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	
Well No.		73	74	75	76	77	78	79	80	81	82	83	84	85	86	87	88	89	90	91	92	93	94	95	96

Negative Control



101.702.24/06– including *Taq* pol., IFU-01
 101.702.24u/06u – without *Taq* pol., IFU-02

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Lot-specific information

Well No.	73	74	75	76	77	78	79	80	81	82	83	84	85	86	87	88	89	90	91	92	93	94	95	96
HLA-C allele⁴																								
*01:02:01-01:02:17, 01:06-01:08, 01:11-01:13, 01:15-01:20, 01:23, 01:25-01:33, 01:37N-01:42, 01:44-01:48, 01:51-01:54, 01:56N-01:58, 01:61-01:75	73																			92				
*01:02:18	73											84								92				
*01:03, 01:24, 01:34	73																			92	93			
*01:04	73											84		86										
*01:05, 01:22, 01:35-01:36, <i>B*39:76, B*54:18⁶</i>	73																							
*01:09	73													86										
*01:10	73	74																		92				
*01:14, 01:59	73											83								92				
*01:21	73											84	85											
*01:43	73	74									82									92				
*01:49-01:50, 01:55	73																					93		
*01:60	73																		91	92				
*02:02:01		74	75			78					83				w									
*02:02:02-02:02:03, 02:02:05-02:02:12, 02:02:14-02:02:25, 02:03, 02:07-02:11, 02:15-02:16:02, 02:19-02:20, 02:23-02:25Q, 02:28-02:32, 02:34-02:38N, 02:40, 02:42-02:44, 02:46, 02:48, 02:50-02:54, 02:56-02:57, 02:59-02:61, 02:63-02:64, 02:66-02:67Q		74	75			78					83													
*02:02:13, 02:02:26, 02:21, 02:26:02-02:26:03, 02:39, 02:45		74	75								83				87									
*02:04		74	w			78					83				87									
*02:05, 02:17		74	75			78					83			86	87									
*02:06		74	75			78	80				83				87		89							
*02:12		74	75			78							85		87									
*02:13, 02:18, 02:33		74	75			78					83				87				90					
*02:14		74	w			78					83													
*02:22, 02:62		74	75			78					83				87							93		
*02:26:01		74									83				87									
*02:27:01-02:27:02		74	75			78																		
*02:47		74	75			78	80				83				87									
*02:49		74	75			78					83		85		87				90					
*02:55		74	75			78					83		85		87									
*02:58			75			78					83				87									
*02:65		74	75			78					83													
*03:02:01-03:02:09, 03:05, 03:17, 03:25, 03:27, 03:33, 03:35-03:36, 03:60, 03:71, 03:84, 03:89, 03:95, 03:108, 03:121N, 03:135, 03:139, 03:146, 03:154, 03:169Q, 03:178			75	76																		94		
Well No.	73	74	75	76	77	78	79	80	81	82	83	84	85	86	87	88	89	90	91	92	93	94	95	96

Negative Control



101.702.24/06– including *Taq* pol., IFU-01
 101.702.24u/06u – without *Taq* pol., IFU-02

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Lot-specific information

Well No.	73	74	75	76	77	78	79	80	81	82	83	84	85	86	87	88	89	90	91	92	93	94	95	96
HLA-C allele ⁴																								
*03:03:01-03:03:20, 03:11:01-03:11:02, 03:20N-03:22Q, 03:30-03:31, 03:43:01-03:43:02, 03:49-03:50, 03:52-03:53, 03:55-03:56, 03:59, 03:61-03:62, 03:66, 03:68-03:69, 03:75-03:76, 03:79, 03:83, 03:85, 03:88, 03:96, 03:102-03:103, 03:112, 03:116:01-03:116:02, 03:119-03:120, 03:122, 03:124, 03:126-03:127, 03:133, 03:141-03:142, 03:150, 03:152, 03:158, 03:160-03:161, 03:168, 03:171, 03:176, 03:185, 03:187-03:189N				76	77																93	94		
*03:04:01:01-03:04:06, 03:04:08-03:04:24, 03:04:27-03:04:36, 03:06, 03:08-03:09, 03:14, 03:19, 03:23-03:24, 03:26, 03:28, 03:32, 03:34, 03:37:01-03:38:02, 03:40:01-03:40:03, 03:42, 03:44, 03:46-03:48, 03:51, 03:54, 03:57, 03:63-03:64:01, 03:65, 03:70, 03:72-03:74, 03:77-03:78, 03:82, 03:87, 03:90-03:93, 03:98, 03:100-03:101, 03:104-03:107, 03:109, 03:111, 03:114-03:115, 03:117-03:118, 03:123, 03:125, 03:128-03:129, 03:131, 03:134, 03:136, 03:138, 03:143, 03:147-03:149, 03:153, 03:155, 03:157, 03:159, 03:162, 03:164, 03:173-03:174, 03:179-03:181, 03:183-03:184, 03:186			75	76																	93	94		
*03:04:07, 03:41, 03:80, 03:113			75																		93	94		
*03:04:25, 03:145, 03:172			75	76																	93			
*03:04:26, 03:18, 03:39, 03:64:02, 03:137, 03:144, 03:156, 03:166, 03:170, 03:182				76																	93			
*03:07, 03:45, 03:163			75	76						83					87						93	94		
*03:10, 03:29			75	76											87						93	94		
*03:13, 03:97, 03:132, 03:167, 03:177				76	77																	94		
*03:15			75	76						83					87							94		
*03:16, 03:110			75																			94		
*03:58					77										87					92	93	94		
*03:67				76	w																93	w		
*03:81, 03:175				76	77												89				93	94		
*03:86					77										87					92		94		
Well No.	73	74	75	76	77	78	79	80	81	82	83	84	85	86	87	88	89	90	91	92	93	94	95	96

Negative Control

101.702.24/06– including *Taq* pol., IFU-01
 101.702.24u/06u – without *Taq* pol., IFU-02

Visit www.olerup-ssp.com for
 “Instructions for Use” (IFU)

Lot No.: **64S**

Lot-specific information

Well No.	73	74	75	76	77	78	79	80	81	82	83	84	85	86	87	88	89	90	91	92	93	94	95	96
HLA-C allele ⁴																								
*03:94			75												87					92		94		
*03:99															87					92				
*03:130, 03:140			75	76							83											93	94	
*03:151, 03:165					77																	93	94	
*04:01:01:01-04:01:15, 04:01:17-04:01:22, 04:01:24-04:01:27, 04:01:29-04:01:51, 04:04:01-04:05, 04:07-04:09N, 04:12-04:13, 04:15:01-04:15:03, 04:17-04:20, 04:24-04:28, 04:30-04:31, 04:34-04:35, 04:38-04:41, 04:43-04:53, 04:56-04:57, 04:59Q-04:67, 04:69-04:70, 04:73-04:76, 04:78-04:79, 04:81-04:102, 04:104-04:106, 04:109-04:111, 04:113, 04:115N, 04:117-04:128, 04:131-04:139, 04:141-04:145						78					83		85						90		93			
*04:01:16, 04:23, 04:54, 04:72						78					83		85						90					
*04:01:23, 04:33, 04:116, 04:130						78					83		85									93		
*04:01:28, 04:140											83		85						90			93		
*04:03:01, 04:06, 04:80			75			78					83		85		87				90			93		
*04:10						78					83								90			93		
*04:11						78										88						93		
*04:14, 04:68						78					83		85						90			93	95	
*04:16			75								83		85		87				90			93		
*04:29						78							85		88				90			93		
*04:32, 04:77			74			78					83		85						90			93	94	
*04:36, 04:55						78										88			90			93		
*04:37						78					83		85		87				90		92	93		
*04:42											83		85	86					90			93	95	
*04:58						78					83		85						90	91		93		
*04:71	73					78					83		85						90			93		
*04:103											83		85		87				90			93		
*04:107			75			78					83		85		87							93		
*04:108						78					83		85					89	90					
*04:112						78					83		85					89	90			93		
*04:114						78					83		85		88				90			93		
*04:129						78	79				83		85						90			93		
*05:01:01:01-05:01:26, 05:03, 05:05-05:15, 05:18:01-05:19, 05:21, 05:24, 05:27-05:35, 05:37-05:41, 05:44:01-05:45, 05:47-05:54, 05:56-05:57, 05:58:02-05:61, 05:63-05:67, 05:69-05:77, 05:80-05:84, 05:86-05:91N							79				83				87							93		
*05:04:01-05:04:02, 05:22:01-05:22:02							79				83				87									
*05:16, 05:85							79				83				87						92	93		
Well No.	73	74	75	76	77	78	79	80	81	82	83	84	85	86	87	88	89	90	91	92	93	94	95	96

Negative Control



101.702.24/06– including *Taq* pol., IFU-01
 101.702.24u/06u – without *Taq* pol., IFU-02

Visit www.olerup-ssp.com for
 “Instructions for Use” (IFU)

Lot No.: **64S**

Lot-specific information

Well No.	73	74	75	76	77	78	79	80	81	82	83	84	85	86	87	88	89	90	91	92	93	94	95	96
HLA-C allele ⁴																								
*05:17, 05:25, 05:55, 05:68, 05:79							79				83				87			90			93			
*05:20, 05:43							79				83										93			
*05:23, 05:62							79				83				87			91			93			
*05:26							78	79			83				87						93			
*05:36							79				83				87		89				93			
*05:42							79				83		85	87			90				93			
*05:46							79				83		85	87							93			
*05:58:01			75				79				83				87						93			
*05:78							78	79			83										93			
*06:02:01:01-06:02:01:02, 06:02:03-06:02:11, 06:02:13-06:02:15, 06:02:17-06:02:26, 06:07, 06:10, 06:12-06:13, 06:15-06:16N, 06:18-06:30, 06:33-06:34, 06:36-06:39, 06:41-06:51, 06:53:01-06:66, 06:68-06:71, 06:73-06:75, 06:78, 06:80, 06:82-06:88, 06:90-06:93, 06:96-06:98								80			83			86									95	
*06:02:12, 06:11, 06:52								80						86									95	
*06:02:16, 06:04, 06:40, 06:79N, 06:81								80			83												95	
*06:03:01			75					80			83			86	87						94			
*06:03:02, 06:76:01								80			83			86	87									
*06:05							79	80			83						90		92				95	
*06:06								80			83								92				95	
*06:08			74					80			83			86									95	
*06:09								80			83			86							93		95	
*06:14, 06:35, 06:72								80			83										93		95	
*06:17											83			86						92			95	
*06:31								80			83			86			90		92				95	
*06:32, 06:94-06:95, 06:99											83			86									95	
*06:67							79	80			83			86									95	
*06:76:02											83	84	85	86	87		90							
*06:77								80			83			86										
*06:89								80			83			86			89						95	
Well No.	73	74	75	76	77	78	79	80	81	82	83	84	85	86	87	88	89	90	91	92	93	94	95	96

Negative Control

101.702.24/06– including *Taq* pol., IFU-01
 101.702.24u/06u – without *Taq* pol., IFU-02

Visit www.olerup-ssp.com for
 “Instructions for Use” (IFU)

Lot No.: **64S**

Lot-specific information

Well No.	73	74	75	76	77	78	79	80	81	82	83	84	85	86	87	88	89	90	91	92	93	94	95	96
HLA-C allele ⁴																								
*07:01:01:01-07:02:07, 07:02:10-07:02:28, 07:02:30-07:02:40, 07:03-07:06, 07:08, 07:11-07:25, 07:27:01-07:27:02, 07:29-07:30, 07:32N, 07:35-07:38:02, 07:42, 07:44-07:48, 07:50-07:63, 07:65-07:75, 07:77-07:91, 07:93-07:95, 07:97-07:100, 07:102-07:122, 07:124, 07:126-07:138, 07:140-07:147, 07:149-07:151, 07:153-07:155, 07:157-07:160, 07:162-07:172, 07:174-07:176, 07:178-07:183, 07:185-07:195, 07:197-07:209, 07:211-07:222, 07:224-07:237, 07:239-07:241, 07:243-07:245, 07:248-07:266, 07:268-07:293, 07:297-07:307									81														95	
*07:02:08, 07:02:29, 07:26, 07:33N, 07:39-07:40, 07:92, 07:139, 07:152N, 07:156, 07:246, 07:267, 07:296									81															
*07:02:09						78			81				85				90						95	
*07:02:41, 07:223									81															w
*07:07, 07:09, 07:49, 07:76, 07:247									81		83								92				95	
*07:10, 07:28, 07:41, 07:43, 07:184, 07:196									81												93		95	
*07:31:01-07:31:02									81				86				90						95	
*07:64									81							88								
*07:96:01-07:96:02				75					81														94	
*07:101, 07:148, 07:161		74							81	82														95
*07:123, 07:173, 07:294									81								89							95
*07:125						78			81				85	86										95
*07:177									81				86				90							
*07:210, 07:238									81		83									92				
*07:242				76					81															95
*08:01:01-08:01:09, 08:03:01-08:03:02, 08:06, 08:08, 08:14, 08:16:01-08:16:02, 08:20, 08:22, 08:24, 08:26N, 08:28, 08:36N, 08:38, 08:40-08:42, 08:44, 08:46, 08:50, 08:56-08:61, 08:65, 08:72:01											82						90					93		
*08:02:01-08:02:10, 08:04:01-08:04:03, 08:13, 08:15:01-08:15:02, 08:17-08:19, 08:23, 08:27, 08:29-08:30, 08:32-08:35, 08:37, 08:39, 08:43, 08:45, 08:49, 08:51-08:55N, 08:62-08:63, 08:66-08:71, 08:73-08:77											82												93	
Well No.	73	74	75	76	77	78	79	80	81	82	83	84	85	86	87	88	89	90	91	92	93	94	95	96

Negative Control



101.702.24/06– including *Taq* pol., IFU-01
 101.702.24u/06u – without *Taq* pol., IFU-02

Visit www.olerup-ssp.com for
 “Instructions for Use” (IFU)

Lot No.: **64S**

Lot-specific information

Well No.	73	74	75	76	77	78	79	80	81	82	83	84	85	86	87	88	89	90	91	92	93	94	95	96
HLA-C allele ⁴																								
*08:05, 08:25										82			85									93		
*08:07, 08:47										82									91			93		
*08:09, 08:11										82									90					
*08:10							79			82	83				87				90			93		
*08:12										82											92	93		
*08:21										82			85						90			93		
*08:31		74								82												93		
*08:48										82														
*12:02:01-12:02:09, 12:10:01-12:10:02, 12:17-12:18:01, 12:20, 12:22, 12:27, 12:30, 12:36, 12:40, 12:56, 12:64, 12:67-12:69, 12:73-12:74, 12:80N, 12:83-12:86												84	85											
*12:03:01:01-12:03:01:02, 12:03:03, 12:03:05-12:03:07, 12:03:10-12:03:12, 12:03:14-12:03:15, 12:03:17-12:03:19, 12:03:21-12:03:22, 12:03:25, 12:06-12:07, 12:11-12:13, 12:19, 12:23, 12:25, 12:29, 12:32, 12:34-12:35, 12:37-12:39N, 12:42Q-12:43, 12:45-12:48, 12:50-12:53, 12:57, 12:61-12:63, 12:65-12:66, 12:70-12:71, 12:75-12:79, 12:82, 12:87-12:95												84	85	86										
*12:03:02, 12:03:08, 12:03:16, 12:03:20, 12:26, 12:59													85	86										
*12:03:04												84	86											
*12:03:09								80				84	86											
*12:03:13, 12:03:24												84	w	86										
*12:03:23		75										84	85	86										
*12:04:01											83		86	87										
*12:04:02, 12:60											83	84	85	86	87									
*12:05											83	84	86	87										
*12:08												84	85				89							
*12:09											83			87							92			
*12:14:01													85						90	91				
*12:14:02												84	85						90	91				
*12:15								80				84	85	86			89							
*12:16												84	85										95	
*12:18:02, B*67:02 ⁷													85											
*12:21							79				83	84			87									
*12:24												84	85								92			
*12:28, 12:58												84	85	86					90					
*12:31												84	85	86								93		
*12:33							79				83			86	87									
*12:41											83	84	85		87									
*12:44												84	85									93		
Well No.	73	74	75	76	77	78	79	80	81	82	83	84	85	86	87	88	89	90	91	92	93	94	95	96

Negative Control

101.702.24/06– including *Taq* pol., IFU-01
 101.702.24u/06u – without *Taq* pol., IFU-02

Visit www.olerup-ssp.com for
 “Instructions for Use” (IFU)

Lot No.: **64S**

Lot-specific information

Well No.	73	74	75	76	77	78	79	80	81	82	83	84	85	86	87	88	89	90	91	92	93	94	95	96
HLA-C allele ⁴																								
*12:49												84												
*12:54											83	84	85	86										
*12:55											84	85	86		88									
*12:72											84	85			87									
*12:81											84	85	86				89							
*14:02:01-14:02:07, 14:02:09-14:03, 14:05, 14:07N, 14:11, 14:13-14:14, 14:18-14:24:02, 14:26-14:27, 14:29-14:44, 14:46-14:48, 14:50-14:51																88				92				
*14:02:08											84					88				92				
*14:04											83					88				92				
*14:06, 14:08-14:09, 14:28, A*30:62 ⁸																88								
*14:10																88		90		92				
*14:12, 14:49											83									92				
*14:15														86		88		90						
*14:16														86		88								
*14:17																88			91	92				
*14:25		74														88				92		94		
*14:45															87	88				92				
*15:02:01-15:02:09, 15:02:11-15:02:15, 15:08, 15:10:02, 15:13, 15:15, 15:17-15:18, 15:26, 15:28, 15:31-15:35, 15:38-15:39, 15:41, 15:44-15:45, 15:47-15:53, 15:56-15:57, 15:60, 15:64			75					80			83				87		89				93			
*15:02:10			75					80			83				87		89				93	94		
*15:03, 15:16			75					80			83		85		87		89				93			
*15:04-15:06:03, 15:09, 15:19, 15:24, 15:27, 15:29-15:30, 15:40, 15:46, 15:54, 15:59, 15:66			75								83				87		89				93			
*15:07			75					80									89				93			
*15:10:01								80			83				87		89				93			
*15:11			75			78		80			83				87		89				93			
*15:12					77			80			83				87		89	90			93			
*15:21			75					80							87		89				93			
*15:22, 15:55			75								83				87		89							
*15:23											83						89				93			
*15:25			75										85					90	91		93			
*15:36						78					83						89				93			
*15:37, 15:58			75					80			83				87		89							
*15:42		74	75					80			83				87		89				93			
*15:43			75					80									89				93	94		
*15:61											83				87		89				93			
*15:62			75					80			83				87		89	90			93			
*15:63								80			83						89				93			
*15:65			75								83				87		89	90	91					
Well No.	73	74	75	76	77	78	79	80	81	82	83	84	85	86	87	88	89	90	91	92	93	94	95	96

Negative Control

101.702.24/06– including *Taq* pol., IFU-01
101.702.24u/06u – without *Taq* pol., IFU-02

Visit www.olerup-ssp.com for
“Instructions for Use” (IFU)

Lot No.: **64S**

Lot-specific information

Well No.	73	74	75	76	77	78	79	80	81	82	83	84	85	86	87	88	89	90	91	92	93	94	95	96
HLA-C allele ⁴																								
*16:01:01-16:01:13, 16:06-16:08, 16:10-16:11, 16:13-16:15:01, 16:16Q-16:17, 16:21-16:24, 16:26-16:28, 16:30N-16:32, 16:36, 16:38-16:39:01, 16:41, 16:44, 16:49, 16:51-16:52, 16:54, 16:56													85					90					95	
*16:02:01-16:02:09, 16:09, 16:12, 16:19, 16:25, 16:46-16:47											83		85		87			90						95
*16:04:01, 16:33, 16:42, 16:55															86			90		92				
*16:15:02												84	85					90						95
*16:18, 16:37													85		87			90						95
*16:20													85				89	90						95
*16:29		74													86			90		92				
*16:34			75			78							85					90						95
*16:35															86			90						
*16:40							79									88								
*16:43													85											95
*16:45													85					90			93			95
*16:48											83			86	87			90						
*16:50		74											85					90						95
*16:53							79									88				92				
*16:57											83		85					90						95
*17:01:01:01-17:01:03, 17:01:05- 17:04, 17:06, 17:08-17:16, 17:18- 17:19		74										83			87			91			93			
*17:01:04		74									83		85		87			91			93			
*17:05		74					79				83				87			91			93			
*17:07, 17:17											83				87			91			93			
*18:01-18:02, 18:04-18:06												83									92	93		95
*18:03		74										83									92	93	94	95
A*24:96, A*24:106, A*24:174, B*08:16, B*46:25																								95
B*14:03																					92			
B*35:222															87									
Well No.	73	74	75	76	77	78	79	80	81	82	83	84	85	86	87	88	89	90	91	92	93	94	95	96

Negative Control

¹The internal positive control primer pairs amplify segments of the human growth hormone gene. The two different control primer pairs give rise to either an internal positive control band of 1070 base pairs, for most wells, or a band of 800 base pairs, for some wells.

Well number 1 contains the primer pair giving rise to the shorter, 800 bp, internal positive control band in order to help in the correct orientation of the HLA-C low resolution SSP typing.

In addition, wells number 74, 75, 77, 78, 80 to 82, 84 to 86, 91 and 92 contain the primer pair giving rise to the shorter, 800 bp, internal positive control band in order to allow kit identification.

²The nucleotide position, in the 1st, 2nd, 3rd or 4th exon or the 1st or 2nd intron, matching the specificity-determining 3'-end of the primer is given. Nucleotide numbering as on the www.ebi.ac.uk, imgt, hla web site. The sequence of the 3 terminal nucleotides of the primer is given.

101.702.24/06– including *Taq* pol., IFU-01
101.702.24u/06u – without *Taq* pol., IFU-02

Visit www.olerup-ssp.com for
“Instructions for Use” (IFU)

Lot No.: 64S**Lot-specific information**

³The nucleotide position, in the 2nd, 3rd or 4th exon or the 3rd intron, matching the specificity-determining 3'-end of the primer is given in the anti-sense direction. Nucleotide numbering as on the [www.ebi.ac.uk, imgt, hla](http://www.ebi.ac.uk/imgt/hla) web site. The sequence of the 3 terminal nucleotides of the primer is given.

⁴The sequence of the Cw*0101 allele has been shown to be identical to C*01:02:01.

The sequence of the Cw*0201 allele has been shown to be identical to C*02:02:02.

The sequence of the Cw*020204 allele has been shown to be identical to C*02:10.

The sequence of the Cw*021603 allele has been shown to be identical to C*02:16:02.

The sequence of the Cw*0301 allele has been shown to be identical to C*03:04:01:01.

The sequence of the C*03:12 allele has been shown to be identical to C*03:19.

The sequence of the Cw*0402 allele has been shown to be identical to C*04:01:01:01.

The sequence of the Cw*0421 allele has been renamed to C*04:15:02.

The sequence of the Cw*0422 allele has been renamed to C*04:21.

The sequence of the Cw*0502 allele has been shown to be identical to C*05:09.

The sequence of the Cw*0601 allele has been shown to be identical to C*06:02:01:01.

The sequence of the Cw*060202 allele has been renamed to C*06:17.

The C*07:295 allele has never been assigned.

The sequence of the Cw*0734 allele has been renamed to C*07:27:02.

The sequence of the C*08:64 allele has been renamed to C*08:33:03.

The sequence of the Cw*1101 allele has been shown to be in error.

The sequence of the Cw*1201 allele has been shown to be identical to C*12:02:02.

The sequence of Cw*1301 has been shown to be in error.

The sequence of the Cw*1401 allele has been shown to be identical to C*14:02:01.

The sequence of the Cw*1501 allele has been shown to be identical to C*15:02:01.

The sequence of the Cw*1514 allele has been shown to be identical to C*15:10:02.

The sequence of the C*15:20 allele has been shown to be identical to C*15:27.

The sequence of the Cw*1603 allele has been shown to be identical to C*14:03.

The sequence of the Cw*16042 allele has been shown to be identical to C*16:04:01.

The sequence of the Cw*1605 allele has been shown to be identical to C*16:04:01.

⁵Primer mix 74 will for most C*02 alleles give rise to two specific PCR fragments.

Primer mix 76 will for most C*03 alleles give rise to two specific PCR fragments.

Primer mix 81 will for most C*07 alleles give rise to two specific PCR fragments.

Primer mix 82 will for most C*08 alleles give rise to multiple specific PCR fragments.

Primer mix 89 will for most C*15 alleles give rise to two specific PCR fragments.

⁶The C*01:05, 01:22, 01:35 and 01:36 and the B*39:76 and B*54:182 alleles give rise to identical amplification patterns with the HLA-C low resolution primer set. These alleles are separated by the HLA-B low primer set.

⁷The C*12:18:02 and the B*67:02 alleles give rise to identical amplification patterns with the HLA-C low resolution primer set. These alleles are separated by the HLA-B low primer set.

⁸The C*14:06, 14:08-14:09 and 14:28 and the A*30:62 alleles give rise to identical amplification patterns with the HLA-C low resolution primer set. These alleles are separated by the HLA-A low primer set.

'w', might be weakly amplified.

101.702.24/06– including *Taq* pol., IFU-01
 101.702.24u/06u – without *Taq* pol., IFU-02

Visit www.olerup-ssp.com for
 “Instructions for Use” (IFU)

Lot No.: **64S**

Lot-specific information

CELL LINE VALIDATION SHEET																				
HLA-A low resolution primer set																				
				Lot No.:	Well															
					1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
	IHWC cell line	A*	A*		201321701	201211702	201321703	201211704	201321705	201211706	201211707	201211708	201211709	201211710	201211711	201322012	201211713	201321714	201321715	201211716
1	9001 SA	*24:02			-	-	-	-	+	-	+	-	-	-	-	-	-	-	-	-
2	9280 LK707	*02:01			-	+	-	-	-	-	-	-	-	-	-	-	-	-	-	-
3	9011 E4181324	*01:01			+	-	-	+	-	-	-	-	-	-	-	-	-	-	-	-
4	9275 GU373	*30:01			-	-	-	-	-	-	-	-	-	-	-	-	-	-	+	-
5	9009 KAS011	*01:01			+	-	-	+	-	-	-	-	-	-	-	-	-	-	-	-
6	9353 SM	*02:01	*26:03		-	+	-	-	-	-	-	+	-	-	+	-	+	-	-	-
7	9020 QBL	*26:01			-	-	-	-	-	-	-	+	-	+	-	-	+	-	-	-
8	9025 DEU	*31:01			-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	+
9	9026 YAR	*26:01			-	-	-	-	-	-	-	+	-	+	-	-	+	-	-	-
10	9107 LKT3	*24:02			-	-	-	-	+	-	+	-	-	-	-	-	-	-	-	-
11	9051 PITOUT	*29:02			-	-	-	-	-	-	-	-	-	-	-	-	-	+	-	-
12	9052 DBB	*02:01			-	+	-	-	-	-	-	-	-	-	-	-	-	-	-	-
13	9004 JESTHOM	*02:01			-	+	-	-	-	-	-	-	-	-	-	-	-	-	-	-
14	9071 OLGA	*31:01			-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	+
15	9075 DKB	*24:02			-	-	-	-	+	-	+	-	-	-	-	-	-	-	-	-
16	9037 SWEIG007	*29:02			-	-	-	-	-	-	-	-	-	-	-	-	-	+	-	-
17	9282 CTM3953540	*03:01	*80:01		-	-	+	-	-	+	-	-	-	-	-	-	+	-	-	-
18	9257 32367	*33:03	*74:01		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
19	9038 BM16	*02:01			-	+	-	-	-	-	-	-	-	-	-	-	-	-	-	-
20	9059 SLE005	*02:01			-	+	-	-	-	-	-	-	-	-	-	-	-	-	-	-
21	9064 AMALA	*02:17			-	+	-	-	-	-	W	-	-	-	-	-	-	-	-	-
22	9056 KOSE	*02:01			-	+	-	-	-	-	-	-	-	-	-	-	-	-	-	-
23	9124 IHL	*02:01	*34:01		-	+	-	-	-	-	-	+	-	-	+	+	-	-	-	-
24	9035 JBUSH	*32:01			-	-	-	-	-	-	-	-	+	-	-	-	-	-	-	-
25	9049 IBW9	*33:01			-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
26	9285 WT49	*02:05			-	+	-	-	-	-	-	-	-	-	-	-	-	-	-	-
27	9191 CH1007	*24:10	*29:01		-	-	-	-	+	-	+	-	-	-	-	-	-	+	-	-
28	9320 BEL5GB	*02:01	*29:02		-	+	-	-	-	-	-	-	-	-	-	-	-	+	-	-
29	9050 MOU	*29:02			-	-	-	-	-	-	-	-	-	-	-	-	-	+	-	-
30	9021 RSH	*30:01	*68:02		-	-	-	-	-	-	-	+	-	-	-	-	-	-	+	-
31	9019 DUCAF	*30:02			-	-	-	-	-	-	-	-	-	-	-	-	-	-	+	-
32	9297 HAG	*02:01			-	+	-	-	-	-	-	-	-	-	-	-	-	-	-	-
33	9098 MT14B	*31:01			-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	+
34	9104 DHIF	*31:01			-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	+
35	9302 SSTO	*32:01			-	-	-	-	-	-	-	-	+	-	-	-	-	-	-	-
36	9024 KT17	*02:06	*11:01		-	+	-	+	-	-	-	-	-	+	-	-	-	-	-	-
37	9065 HHKB	*03:01			-	-	+	-	-	-	-	-	-	-	-	-	+	-	-	-
38	9099 LZL	*02:17			-	+	-	-	-	-	W	-	-	-	-	-	-	-	-	-
39	9315 CML	*01:01	*03:01		+	-	+	+	-	-	-	-	-	-	-	-	+	-	-	-
40	9134 WHONP199	*02:07	*30:01		-	+	-	-	-	-	-	-	-	-	-	-	-	-	+	-
41	9055 H0301	*03:01			-	-	+	-	-	-	-	-	-	-	-	-	+	-	-	-
42	9066 TAB089	*02:07			-	+	-	-	-	-	-	-	-	-	-	-	-	-	-	-
43	9076 T7526	*02:06	*02:07		-	+	-	-	-	-	-	-	-	-	-	-	-	-	-	-
44	9057 TEM	*66:01			-	-	-	-	-	-	-	+	-	-	+	-	+	-	-	-
45	9239 SHJO	*23:01	*24:02		-	-	-	-	+	+	+	-	-	-	-	-	-	-	-	-
46	9013 SCHU	*03:01			-	-	+	-	-	-	-	-	-	-	-	-	+	-	-	-
47	9045 TUBO	*02:16	*03:01		-	+	+	-	-	-	-	-	-	-	-	-	+	-	-	-
48	9303 TER-ND	*02:01	*11:01		-	+	-	+	-	-	-	-	-	-	+	-	-	-	-	-



101.702.24/06– including *Taq* pol., IFU-01
 101.702.24u/06u – without *Taq* pol., IFU-02

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 “Instructions for Use” (IFU)

Lot No.: **64S**

Lot-specific information

CELL LINE VALIDATION SHEET											
HLA-A low resolution primer set											
				Well							
				17	18	19	20	21	22	23	24
				201211717	201321718	201321719	201211720	201321721	201211722	201211723	201211724
			Lot No.:								
	IHWC cell line	A*	A*								
1	9001 SA	*24:02		-	-	-	-	-	-	-	-
2	9280 LK707	*02:01		-	-	-	-	-	-	-	-
3	9011 E4181324	*01:01		-	-	-	-	-	-	-	-
4	9275 GU373	*30:01		-	-	-	-	-	-	-	-
5	9009 KAS011	*01:01		-	-	-	-	-	-	-	-
6	9353 SM	*02:01	*26:03	-	-	-	-	-	-	+	-
7	9020 QBL	*26:01		-	-	-	-	-	-	-	-
8	9025 DEU	*31:01		-	-	-	-	-	-	-	-
9	9026 YAR	*26:01		-	-	-	-	-	-	-	-
10	9107 LKT3	*24:02		-	-	-	-	-	-	-	-
11	9051 PITOUT	*29:02		-	-	-	-	-	-	-	-
12	9052 DBB	*02:01		-	-	-	-	-	-	-	-
13	9004 JESTHOM	*02:01		-	-	-	-	-	-	-	-
14	9071 OLGA	*31:01		-	-	-	-	-	-	-	-
15	9075 DKB	*24:02		-	-	-	-	-	-	-	-
16	9037 SWEIG007	*29:02		-	-	-	-	-	-	-	-
17	9282 CTM3953540	*03:01	*80:01	-	-	-	-	-	-	+	-
18	9257 32367	*33:03	*74:01	-	+	+	-	-	-	-	-
19	9038 BM16	*02:01		-	-	-	-	-	-	-	-
20	9059 SLE005	*02:01		-	-	-	-	-	-	-	-
21	9064 AMALA	*02:17		-	-	-	-	-	-	-	-
22	9056 KOSE	*02:01		-	-	-	-	-	-	-	-
23	9124 IHL	*02:01	*34:01	-	-	-	-	-	-	-	-
24	9035 JBUSH	*32:01		+	-	-	-	-	-	-	-
25	9049 IBW9	*33:01		-	+	-	-	-	-	-	-
26	9285 WT49	*02:05		-	-	-	-	-	-	-	-
27	9191 CH1007	*24:10	*29:01	-	-	-	-	-	-	-	-
28	9320 BEL5GB	*02:01	*29:02	-	-	-	-	-	-	-	-
29	9050 MOU	*29:02		-	-	-	-	-	-	-	-
30	9021 RSH	*30:01	*68:02	-	-	-	+	-	-	-	-
31	9019 DUCAF	*30:02		-	-	-	-	-	-	-	-
32	9297 HAG	*02:01		-	-	-	-	-	-	-	-
33	9098 MT14B	*31:01		-	-	-	-	-	-	-	-
34	9104 DHIF	*31:01		-	-	-	-	-	-	-	-
35	9302 SSTO	*32:01		+	-	-	-	-	-	-	-
36	9024 KT17	*02:06	*11:01	-	-	-	-	-	-	-	-
37	9065 HHKB	*03:01		-	-	-	-	-	-	-	-
38	9099 LZL	*02:17		-	-	-	-	-	-	-	-
39	9315 CML	*01:01	*03:01	-	-	-	-	-	-	-	-
40	9134 WHONP199	*02:07	*30:01	-	-	-	-	-	-	-	-
41	9055 H0301	*03:01		-	-	-	-	-	-	-	-
42	9066 TAB089	*02:07		-	-	-	-	-	-	-	-
43	9076 T7526	*02:06	*02:07	-	-	-	-	-	-	-	-
44	9057 TEM	*66:01		-	-	-	-	-	-	-	-
45	9239 SHJO	*23:01	*24:02	-	-	-	-	-	-	-	-
46	9013 SCHU	*03:01		-	-	-	-	-	-	-	-
47	9045 TUBO	*02:16	*03:01	-	-	-	-	-	-	-	-
48	9303 TER-ND	*02:01	*11:01	-	-	-	-	-	-	-	-

101.702.24/06– including *Taq* pol., IFU-01
 101.702.24u/06u – without *Taq* pol., IFU-02

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 “Instructions for Use” (IFU)

Lot No.: **64S**

Lot-specific information

CELL LINE VALIDATION SHEET																				
HLA-B low resolution SSP kit																				
				Well																
				25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	
				Prod. No.:	201318701	201318702	201321803	201318704	201318705	201320806	201318707	201322108	201322109	201318710	201318711	201318712	201318713	201318714	201318715	201318716
	IHWC cell line	B*																		
1	9001 SA	*07:02		+	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
2	9280 LK707	*52:01	*73:01	-	-	-	-	-	-	-	-	-	+	-	-	-	-	-	-	-
3	9011 E4181324	*52:01		-	-	-	-	-	-	-	-	-	+	-	-	-	-	-	-	-
4	9275 GU373	*15:10	*53:01	-	-	-	-	-	-	-	-	+	-	-	-	+	-	+	-	-
5	9009 KAS011	*37:01		-	-	-	-	-	-	-	-	-	-	-	-	+	-	-	-	-
6	9353 SM	*39:01	*51:01	-	-	-	-	+	-	-	-	-	+	-	-	-	-	-	-	-
7	9020 QBL	*18:01		-	-	-	-	-	-	-	-	-	-	-	-	+	-	-	+	-
8	9025 DEU	*35:01		-	-	-	-	-	-	-	-	-	-	-	-	+	-	-	-	-
9	9026 YAR	*38:01		-	-	-	-	+	-	-	-	-	-	-	-	-	-	-	-	-
10	9107 LKT3	*54:01		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
11	9051 PITOUT	*44:03		-	-	-	+	-	-	-	-	-	-	-	-	-	-	-	-	-
12	9052 DBB	*57:01		-	-	-	-	-	-	-	-	-	-	-	-	+	-	-	-	-
13	9004 JESTHOM	*27:05		-	-	-	-	+	-	-	-	-	-	-	-	-	-	-	-	+
14	9071 OLGA	*15:01	*15:20	-	-	-	-	-	-	-	+	-	-	-	-	+	-	-	-	-
15	9075 DKB	*40:01		-	-	-	+	-	-	-	-	-	-	-	-	-	-	-	-	-
16	9037 SWEIG007	*40:02		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
17	9282 CTM3953540	*08:01	*55:01	-	+	-	-	-	-	-	-	+	-	-	-	-	-	-	-	-
18	9257 32367	*14:01	*56:01	-	-	-	+	+	-	-	-	-	-	-	-	-	-	-	-	-
19	9038 BM16	*18:01		-	-	-	-	-	-	-	-	-	-	-	-	+	-	-	+	-
20	9059 SLE005	*40:01		-	-	-	+	-	-	-	-	-	-	-	-	-	-	-	-	-
21	9064 AMALA	*15:01		-	-	-	-	-	-	-	+	-	-	-	-	+	-	-	-	-
22	9056 KOSE	*35:03		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
23	9124 IHL	*40:02	*56:02	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
24	9035 JBUSH	*38:01		-	-	-	-	+	-	-	-	-	-	-	-	-	-	-	-	-
25	9049 IBW9	*14:02		-	-	-	+	-	+	-	-	-	-	-	-	-	-	-	-	-
26	9285 WT49	*58:01		-	-	-	-	-	-	-	-	-	-	-	-	+	-	-	-	-
27	9191 CH1007	*07:05	*51:01	+	-	-	-	-	-	-	-	-	+	-	-	-	-	-	-	-
28	9320 BEL5GB	*44:02	*44:03	-	-	-	+	-	-	-	-	-	-	-	-	-	-	-	-	-
29	9050 MOU	*44:03		-	-	-	+	-	-	-	-	-	-	-	-	-	-	-	-	-
30	9021 RSH	*42:01		-	-	-	-	-	-	-	-	+	-	-	-	-	-	-	-	-
31	9019 DUCAF	*18:01		-	-	-	-	-	-	-	-	-	-	-	-	+	-	-	+	-
32	9297 HAG	*41:02		-	-	-	+	-	-	-	-	+	-	-	-	-	-	-	-	-
33	9098 MT14B	*40:01		-	-	-	+	-	-	-	-	-	-	-	-	-	-	-	-	-
34	9104 DHIF	*38:01		-	-	-	-	+	-	-	-	-	-	-	-	-	-	-	-	-
35	9302 SSTO	*44:02		-	-	-	+	-	-	-	-	-	-	-	-	-	-	-	-	-
36	9024 KT17	*15:01	*35:01	-	-	-	-	-	-	-	+	-	-	-	-	+	-	-	-	-
37	9065 HHKB	*07:02		+	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
38	9099 LZL	*15:01		-	-	-	-	-	-	-	+	-	-	-	-	+	-	-	-	-
39	9315 CML	*08:01	*27:05	-	+	-	-	+	-	-	-	+	-	-	-	-	-	-	-	+
40	9134 WHONP199	*13:02	*46:01	-	-	+	+	-	-	+	-	-	-	+	-	+	-	-	-	-
41	9055 H0301	*14:02		-	-	-	+	-	+	-	-	-	-	-	-	-	-	-	-	-
42	9066 TAB089	*46:01		-	-	-	-	-	-	-	+	-	-	-	-	+	-	-	-	-
43	9076 T7526	*46:01		-	-	-	-	-	-	-	+	-	-	-	-	+	-	-	-	-
44	9057 TEM	*38:01		-	-	-	-	+	-	-	-	-	-	-	-	-	-	-	-	-
45	9239 SHJO	*42:01	*50:01	-	-	-	+	-	-	-	+	-	-	-	-	-	-	-	-	-
46	9013 SCHU	*07:02		+	-	-	-	-	-	-	-	-	+	-	-	-	-	-	-	-
47	9045 TUBO	*51:01		-	-	-	-	-	-	-	-	-	+	-	-	-	-	-	-	-
48	9303 TER-ND	*35:01	*44:03	-	-	-	+	-	-	-	-	-	-	-	-	+	-	-	-	-



101.702.24/06– including *Taq* pol., IFU-01
 101.702.24u/06u – without *Taq* pol., IFU-02

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 “Instructions for Use” (IFU)

Lot No.: **64S**

Lot-specific information

CELL LINE VALIDATION SHEET																				
HLA-B low resolution SSP kit																				
				Well																
				41	42	43	44	45	46	47	48	49	50	51	52	53	54	55	56	
				Prod. No.:	201318717	201321818	201318719	201318720	201318721	201320822	201320823	201320824	201318725	201318726	201318727	201318728	201322129	201318730	201318731	201318732
IHCW cell line		B*																		
1	9001	SA	*07:02	-	-	-	-	-	-	-	-	+	-	-	-	+	-	-	-	
2	9280	LK707	*52:01	*73:01	-	-	-	-	-	-	-	+	-	-	-	+	-	-	-	
3	9011	E4181324	*52:01		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
4	9275	GU373	*15:10	*53:01	+	-	+	-	-	-	-	-	-	-	-	-	-	-	-	
5	9009	KAS011	*37:01		+	-	-	+	-	-	-	-	-	-	-	+	-	-	-	
6	9353	SM	*39:01	*51:01	-	-	-	-	+	-	+	+	-	-	-	-	+	-	-	
7	9020	QBL	*18:01		-	+	-	-	-	-	-	-	-	-	-	-	-	-	-	
8	9025	DEU	*35:01		+	+	-	-	-	-	-	-	-	-	-	-	-	-	-	
9	9026	YAR	*38:01		-	-	-	-	+	+	+	-	-	-	-	-	-	-	-	
10	9107	LKT3	*54:01		-	-	-	-	-	-	-	-	-	-	-	+	-	-	+	
11	9051	PITOUT	*44:03		+	-	-	-	-	-	-	-	-	-	-	-	+	-	-	
12	9052	DBB	*57:01		+	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
13	9004	JESTHOM	*27:05		-	-	-	-	-	-	-	-	-	-	-	+	-	-	+	
14	9071	OLGA	*15:01	*15:20	+	-	+	-	-	-	-	-	-	-	-	-	-	-	-	
15	9075	DKB	*40:01		-	-	-	-	-	-	-	+	+	-	-	-	-	-	-	
16	9037	SWEIG007	*40:02		-	-	-	-	-	-	-	-	-	+	-	-	-	-	-	
17	9282	CTM3953540	*08:01	*55:01	-	-	-	-	-	-	-	+	-	-	+	+	-	-	+	
18	9257	32367	*14:01	*56:01	-	-	-	-	-	-	+	+	-	-	-	+	-	-	+	
19	9038	BM16	*18:01		-	+	-	-	-	-	-	-	-	-	-	-	-	-	-	
20	9059	SLE005	*40:01		-	-	-	-	-	-	-	+	+	-	-	-	-	-	-	
21	9064	AMALA	*15:01		-	-	+	-	-	-	-	-	-	-	-	-	-	-	-	
22	9056	KOSE	*35:03		+	+	-	-	-	-	-	-	-	-	-	-	-	-	-	
23	9124	IHL	*40:02	*56:02	-	-	-	-	-	-	-	-	-	+	-	+	-	-	+	
24	9035	JBUSH	*38:01		-	-	-	-	+	+	+	-	-	-	-	-	-	-	-	
25	9049	IBW9	*14:02		-	-	-	-	-	-	+	+	-	-	-	-	-	-	-	
26	9285	WT49	*58:01		+	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
27	9191	CH1007	*07:05	*51:01	-	-	-	-	-	-	-	+	-	-	-	+	-	+	-	
28	9320	BEL5GB	*44:02	*44:03	+	-	-	-	-	-	-	-	-	-	-	-	+	-	-	
29	9050	MOU	*44:03		+	-	-	-	-	-	-	-	-	-	-	+	-	-	-	
30	9021	RSH	*42:01		-	-	-	-	-	-	-	+	-	-	+	+	-	-	-	
31	9019	DUCAF	*18:01		-	+	-	-	-	-	-	-	-	-	-	-	-	-	-	
32	9297	HAG	*41:02		-	-	-	-	-	-	-	+	-	-	+	-	-	-	-	
33	9098	MT14B	*40:01		-	-	-	-	-	-	-	+	+	-	-	-	-	-	-	
34	9104	DHIF	*38:01		-	-	-	-	+	+	+	-	-	-	-	-	-	-	-	
35	9302	SSTO	*44:02		+	-	-	-	-	-	-	-	-	-	-	-	+	-	-	
36	9024	KT17	*15:01	*35:01	+	+	+	-	-	-	-	-	-	-	-	-	-	-	-	
37	9065	HHKB	*07:02		-	-	-	-	-	-	-	+	-	-	-	+	-	-	-	
38	9099	LZL	*15:01		-	-	+	-	-	-	-	-	-	-	-	-	-	-	-	
39	9315	CML	*08:01	*27:05	-	-	-	-	-	-	-	+	-	-	+	+	-	-	+	
40	9134	WHONP199	*13:02	*46:01	-	-	-	-	-	-	-	-	-	-	-	+	-	-	+	
41	9055	H0301	*14:02		-	-	-	-	-	-	+	+	-	-	-	-	-	-	-	
42	9066	TAB089	*46:01		-	-	-	-	-	-	-	-	-	-	-	+	-	-	+	
43	9076	T7526	*46:01		-	-	-	-	-	-	-	-	-	-	-	+	-	-	+	
44	9057	TEM	*38:01		-	-	-	-	+	+	+	-	-	-	-	-	-	-	-	
45	9239	SHJO	*42:01	*50:01	-	-	-	-	-	-	-	+	-	-	+	+	-	-	-	
46	9013	SCHU	*07:02		-	-	-	-	-	-	-	+	-	-	-	+	-	-	-	
47	9045	TUBO	*51:01		-	-	-	-	-	-	-	-	-	-	-	-	-	+	-	
48	9303	TER-ND	*35:01	*44:03	+	+	-	-	-	-	-	-	-	-	-	+	-	-	-	

101.702.24/06– including *Taq* pol., IFU-01
 101.702.24u/06u – without *Taq* pol., IFU-02

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 “Instructions for Use” (IFU)

Lot No.: **64S**

Lot-specific information

CELL LINE VALIDATION SHEET																				
HLA-B low resolution SSP kit																				
				Well																
				57	58	59	60	61	62	63	64	65	66	67	68	69	70	71	72	
				Prod. No.:	201318733	201318734	201318735	201318736	201318737	201318738	201318739	201318740	201318741	201321842	201318743	201318744	201318745	201318746	201318747	201321848
	IHWC cell line		B*																	
1	9001 SA		*07:02		-	-	-	-	-	-	-	-	-	-	-	-	-	-	+	+
2	9280 LK707		*52:01	*73:01	-	-	+	+	-	+	-	-	-	-	-	-	+	+	+	-
3	9011 E4181324		*52:01		-	-	+	+	-	+	-	-	-	-	-	-	-	+	-	-
4	9275 GU373		*15:10	*53:01	-	-	-	+	-	-	-	-	-	-	-	+	-	+	+	-
5	9009 KAS011		*37:01		-	-	-	-	-	+	-	-	-	-	-	-	-	+	-	-
6	9353 SM		*39:01	*51:01	-	-	+	+	-	-	-	-	-	-	-	+	-	+	+	-
7	9020 QBL		*18:01		-	-	-	-	-	-	-	-	-	-	-	+	-	-	+	-
8	9025 DEU		*35:01		-	-	-	-	-	-	-	-	-	-	-	+	-	-	+	-
9	9026 YAR		*38:01		-	-	-	-	-	-	-	-	-	-	-	-	-	+	-	-
10	9107 LKT3		*54:01		-	-	-	-	-	-	+	+	-	-	-	-	-	-	+	-
11	9051 PITOUT		*44:03		-	-	-	-	-	+	-	-	-	-	-	-	-	+	-	-
12	9052 DBB		*57:01		-	-	-	+	-	-	-	-	-	+	-	-	-	+	-	-
13	9004 JESTHOM		*27:05		-	-	-	-	-	+	-	-	-	-	-	-	-	+	-	-
14	9071 OLGA		*15:01	*15:20	-	-	-	-	-	+	-	-	-	-	-	-	+	-	+	-
15	9075 DKB		*40:01		-	-	-	-	+	+	-	-	-	-	-	-	-	-	+	-
16	9037 SWEIG007		*40:02		-	-	-	-	+	+	-	-	-	-	-	-	-	-	+	-
17	9282 CTM3953540		*08:01	*55:01	-	-	+	-	-	-	-	+	-	-	-	-	-	-	+	+
18	9257 32367		*14:01	*56:01	-	-	-	-	-	-	-	-	+	-	-	-	-	-	+	-
19	9038 BM16		*18:01		-	-	-	-	-	-	-	-	-	-	-	+	-	-	+	-
20	9059 SLE005		*40:01		-	-	-	-	+	+	-	-	-	-	-	-	-	-	+	-
21	9064 AMALA		*15:01		-	-	-	-	-	+	-	-	-	-	-	-	+	-	+	-
22	9056 KOSE		*35:03		-	-	-	-	-	-	-	-	-	-	-	+	-	-	+	-
23	9124 IHL		*40:02	*56:02	-	-	-	-	+	+	-	-	+	-	+	-	-	-	+	-
24	9035 JBUSH		*38:01		-	-	-	-	-	-	-	-	-	-	-	-	-	+	-	-
25	9049 IBW9		*14:02		-	-	-	-	-	-	-	-	-	-	-	-	-	-	+	-
26	9285 WT49		*58:01		-	-	-	+	-	-	-	-	-	-	+	-	-	+	-	-
27	9191 CH1007		*07:05	*51:01	-	-	+	+	-	-	-	-	-	-	-	+	-	+	+	+
28	9320 BEL5GB		*44:02	*44:03	-	-	-	-	-	+	+	-	-	-	-	-	-	+	-	-
29	9050 MOU		*44:03		-	-	-	-	-	+	-	-	-	-	-	-	-	+	-	-
30	9021 RSH		*42:01		-	-	-	-	-	-	-	-	-	-	-	-	-	-	+	+
31	9019 DUCAF		*18:01		-	-	-	-	-	-	-	-	-	-	-	+	-	-	+	-
32	9297 HAG		*41:02		-	-	-	-	+	+	-	-	-	-	-	-	-	-	+	+
33	9098 MT14B		*40:01		-	-	-	-	+	+	-	-	-	-	-	-	-	-	+	-
34	9104 DHIF		*38:01		-	-	-	-	-	-	-	-	-	-	-	-	-	-	+	-
35	9302 SSTO		*44:02		-	-	-	-	-	+	+	-	-	-	-	-	-	+	-	-
36	9024 KT17		*15:01	*35:01	-	-	-	-	-	+	-	-	-	-	-	+	+	-	+	-
37	9065 HHKB		*07:02		-	-	-	-	-	-	-	-	-	-	-	-	-	-	+	+
38	9099 LZL		*15:01		-	-	-	-	-	+	-	-	-	-	-	-	+	-	+	-
39	9315 CML		*08:01	*27:05	-	-	-	-	-	+	-	-	-	-	-	-	-	+	+	+
40	9134 WHONP199		*13:02	*46:01	-	-	-	-	-	+	-	-	-	-	-	-	+	+	+	-
41	9055 H0301		*14:02		-	-	-	-	-	-	-	-	-	-	-	-	-	-	+	-
42	9066 TAB089		*46:01		-	-	-	-	-	-	-	-	-	-	-	-	+	-	+	-
43	9076 T7526		*46:01		-	-	-	-	-	-	-	-	-	-	-	-	+	-	+	-
44	9057 TEM		*38:01		-	-	-	-	-	-	-	-	-	-	-	-	-	+	-	-
45	9239 SHJO		*42:01	*50:01	-	-	+	-	+	+	-	-	+	-	-	-	-	-	+	+
46	9013 SCHU		*07:02		-	-	-	-	-	-	-	-	-	-	-	-	-	-	+	+
47	9045 TUBO		*51:01		-	-	+	+	-	-	-	-	-	-	-	-	-	-	+	-
48	9303 TER-ND		*35:01	*44:03	-	-	-	-	-	+	-	-	-	-	-	+	-	+	+	-



101.702.24/06– including *Taq* pol., IFU-01
 101.702.24u/06u – without *Taq* pol., IFU-02

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 “Instructions for Use” (IFU)

Lot No.: **64S**

Lot-specific information

CELL LINE VALIDATION SHEET																			
HLA-C low resolution SSP primer set																			
			Prod. No.:	Well															
				73	74	75	76	77	78	79	80	81	82	83	84	85	86	87	88
	IHWC cell line	C*		201322201	201322202	201322203	201322204	201322205	201322206	201322207	201322208	201322209	201322210	201322211	201322212	201322213	201322214	201322215	201322216
1	9001 SA	*07:02		-	-	-	-	-	-	-	-	+	-	-	-	-	-	-	-
2	9280 LK707	*07:01	*15:05	-	-	+	-	-	-	-	-	+	-	+	-	-	-	+	-
3	9011 E4181324	*12:02		-	-	-	-	-	-	-	-	-	-	-	+	+	-	-	-
4	9275 GU373	*03:04	*04:01	-	-	+	+	-	+	-	-	-	-	+	-	+	-	-	-
5	9009 KAS011	*06:02		-	-	-	-	-	-	-	+	-	-	+	-	-	+	-	-
6	9353 SM	*03:04	*07:02	-	-	+	+	-	-	-	-	+	-	-	-	-	-	-	-
7	9020 QBL	*05:01		-	-	-	-	-	-	+	-	-	-	+	-	-	-	+	-
8	9007 DEM	*04:01		-	-	-	-	-	+	-	-	-	-	+	-	+	-	-	-
9	9026 YAR	*12:03		-	-	-	-	-	-	-	-	-	-	-	+	+	+	-	-
10	9107 LKT3	*01:02		+	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
11	9051 PITOUT	*16:01		-	-	-	-	-	-	-	-	-	-	-	-	+	-	-	-
12	9052 DBB	*06:02		-	-	-	-	-	-	-	+	-	-	+	-	-	+	-	-
13	9004 JESTHOM	*01:02		+	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
14	9071 OLGA	*01:02	*03:04	+	-	+	+	-	-	-	-	-	-	-	-	-	-	-	-
15	9075 DKB	*03:04		-	-	+	+	-	-	-	-	-	-	-	-	-	-	-	-
16	9037 SWEIG007	*02:02		-	+	+	-	-	+	-	-	-	-	+	-	-	-	+	-
17	9282 CTM3953540	*03:03	*07:01	-	-	-	+	+	-	-	-	+	-	-	-	-	-	-	-
18	9257 32367	*01:02	*07:05	+	-	-	-	-	-	-	-	+	-	-	-	-	-	-	-
19	9038 BM16	*07:01		-	-	-	-	-	-	-	-	+	-	-	-	-	-	-	-
20	9059 SLE005	*03:04		-	-	+	+	-	-	-	-	-	-	-	-	-	-	-	-
21	9064 AMALA	*03:03		-	-	-	+	+	-	-	-	-	-	-	-	-	-	-	-
22	9056 KOSE	*12:03		-	-	-	-	-	-	-	-	-	-	-	+	+	+	-	-
23	9124 IHL	*01:02	*15:02	+	-	+	-	-	-	-	+	-	-	+	-	-	-	+	-
24	9035 JBUSH	*12:03		-	-	-	-	-	-	-	-	-	-	-	+	+	+	-	-
25	9049 IBW9	*08:02		-	-	-	-	-	-	-	-	-	+	-	-	-	-	-	-
26	9285 WT49	*07:01		-	-	-	-	-	-	-	-	+	-	-	-	-	-	-	-
27	9191 CH1007	*07:04	*15:05	-	-	+	-	-	-	-	-	+	-	+	-	-	-	+	-
28	9320 BEL5GB	*05:01	*16:01	-	-	-	-	-	-	+	-	-	-	+	-	+	-	+	-
29	9050 MOU	*16:01		-	-	-	-	-	-	-	-	-	-	-	-	+	-	-	-
30	9021 RSH	*17:01		-	+	-	-	-	-	-	-	-	-	+	-	-	-	+	-
31	9019 DUCAF	*05:01		-	-	-	-	-	-	+	-	-	-	+	-	-	-	+	-
32	9297 HAG	*17:01	*17:03	-	+	-	-	-	-	-	-	-	-	+	-	-	-	+	-
33	9098 MT14B	*03:04		-	-	+	+	-	-	-	-	-	-	-	-	-	-	-	-
34	9104 DHIF	*12:03		-	-	-	-	-	-	-	-	-	-	-	+	+	+	-	-
35	9302 SSTO	*05:01		-	-	-	-	-	-	+	-	-	-	+	-	-	-	+	-
36	9024 KT17	*03:03	*04:01	-	-	-	+	+	+	-	-	-	-	+	-	-	+	-	-
37	9065 HHKB	*07:02		-	-	-	-	-	-	-	-	+	-	-	-	-	-	-	-
38	9099 LZL	*03:03		-	-	-	+	+	-	-	-	-	-	-	-	-	-	-	-
39	9315 CML	*02:02	*07:01	-	+	+	-	-	+	-	-	+	-	+	-	-	-	+	-
40	9134 WHONP199	*01:02	*06:02	+	-	-	-	-	-	-	+	-	-	+	-	-	+	-	-
41	9055 H0301	*08:02		-	-	-	-	-	-	-	-	-	+	-	-	-	-	-	-
42	9066 TAB089	*01:02		+	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
43	9076 T7526	*01:02	*08:01	+	-	-	-	-	-	-	-	-	+	-	-	-	-	-	-
44	9057 TEM	*12:03		-	-	-	-	-	-	-	-	-	-	-	+	+	+	-	-
45	9239 SHJO	*06:02	*17:01	-	+	-	-	-	-	-	+	-	-	+	-	-	+	+	-
46	9013 SCHU	*07:02		-	-	-	-	-	-	-	-	+	-	-	-	-	-	-	-
47	9045 TUBO	*07:04	*15:02	-	-	+	-	-	-	-	+	+	-	+	-	-	-	+	-
48	9303 TER-ND	*04:01	*16:01	-	-	-	-	-	+	-	-	-	-	+	-	+	-	-	-

101.702.24/06– including *Taq* pol., IFU-01
 101.702.24u/06u – without *Taq* pol., IFU-02

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Lot No.: **64S**

Lot-specific information

CELL LINE VALIDATION SHEET											
HLA-C low resolution SSP primer set											
				Well							
				89	90	91	92	93	94	95	
				Prod. No.:	201322217	201322218	201322219	201322220	201322221	201322222	201322223
	IHWC cell line	C*									
1	9001 SA	*07:02		-	-	-	-	-	-	-	+
2	9280 LK707	*07:01	*15:05	+	-	-	-	+	-	+	
3	9011 E4181324	*12:02		-	-	-	-	-	-	-	-
4	9275 GU373	*03:04	*04:01	-	+	-	-	+	+	-	
5	9009 KAS011	*06:02		-	-	-	-	-	-	-	+
6	9353 SM	*03:04	*07:02	-	-	-	-	+	+	+	
7	9020 QBL	*05:01		-	-	-	-	+	-	-	
8	9007 DEM	*04:01		-	+	-	-	+	-	-	
9	9026 YAR	*12:03		-	-	-	-	-	-	-	-
10	9107 LKT3	*01:02		-	-	-	+	-	-	-	
11	9051 PITOUT	*16:01		-	+	-	-	-	-	-	+
12	9052 DBB	*06:02		-	-	-	-	-	-	-	+
13	9004 JESTHOM	*01:02		-	-	-	+	-	-	-	
14	9071 OLGA	*01:02	*03:04	-	-	-	+	+	+	-	
15	9075 DKB	*03:04		-	-	-	-	+	+	-	
16	9037 SWEIG007	*02:02		-	-	-	-	-	-	-	-
17	9282 CTM3953540	*03:03	*07:01	-	-	-	-	+	+	+	
18	9257 32367	*01:02	*07:05	-	-	-	+	-	-	+	
19	9038 BM16	*07:01		-	-	-	-	-	-	-	+
20	9059 SLE005	*03:04		-	-	-	-	+	+	-	
21	9064 AMALA	*03:03		-	-	-	-	+	+	-	
22	9056 KOSE	*12:03		-	-	-	-	-	-	-	-
23	9124 IHL	*01:02	*15:02	+	-	-	+	+	-	-	
24	9035 JBUSH	*12:03		-	-	-	-	-	-	-	-
25	9049 IBW9	*08:02		-	-	-	-	+	-	-	
26	9285 WT49	*07:01		-	-	-	-	-	-	-	+
27	9191 CH1007	*07:04	*15:05	+	-	-	-	+	-	+	
28	9320 BEL5GB	*05:01	*16:01	-	+	-	-	+	-	+	
29	9050 MOU	*16:01		-	+	-	-	-	-	+	
30	9021 RSH	*17:01		-	-	+	-	+	-	-	
31	9019 DUCAF	*05:01		-	-	-	-	+	-	-	
32	9297 HAG	*17:01	*17:03	-	-	+	-	+	-	-	
33	9098 MT14B	*03:04		-	-	-	-	-	+	-	
34	9104 DHIF	*12:03		-	-	-	-	-	-	-	-
35	9302 SSTO	*05:01		-	-	-	-	+	-	-	
36	9024 KT17	*03:03	*04:01	-	+	-	-	+	+	-	
37	9065 HHKB	*07:02		-	-	-	-	-	-	+	
38	9099 LZL	*03:03		-	-	-	-	+	+	-	
39	9315 CML	*02:02	*07:01	-	-	-	-	-	-	+	
40	9134 WHONP199	*01:02	*06:02	-	-	-	+	-	-	+	
41	9055 H0301	*08:02		-	-	-	-	+	-	-	
42	9066 TAB089	*01:02		-	-	-	+	-	-	-	
43	9076 T7526	*01:02	*08:01	-	+	-	+	+	-	-	
44	9057 TEM	*12:03		-	-	-	-	-	-	-	-
45	9239 SHJO	*06:02	*17:01	-	-	+	-	+	-	+	
46	9013 SCHU	*07:02		-	-	-	-	-	-	+	
47	9045 TUBO	*07:04	*15:02	+	-	-	-	+	-	+	
48	9303 TER-ND	*04:01	*16:01	-	+	-	-	+	-	+	

101.702.24/06– including *Taq* pol., IFU-01
 101.702.24u/06u – without *Taq* pol., IFU-02

Visit www.olerup-ssp.com for
 “Instructions for Use” (IFU)

Lot No.: **64S**

Lot-specific information

CERTIFICATE OF ANALYSIS

Olerup SSP® HLA-A-B-C SSP Combi Tray

Product number: 101.702-24/06 – including *Taq* pol.
 101.702-24u/06u – without *Taq* pol.

Lot number: 64S

Expiry date: 2016-March-01

Number of tests: 24 tests – Product No. 101.702-24/24u
 6 tests – Product No. 101.702-06/06u

Number of wells per test: 95 + 1

Well specifications:

Well No.	Production No.	Well No.	Production No.	Well No.	Production No.
1	2013-217-01	9	2012-117-09	17	2012-117-17
2	2012-117-02	10	2012-117-10	18	2013-217-18
3	2013-217-03	11	2012-117-11	19	2013-217-19
4	2012-117-04	12	2013-220-12	20	2012-117-20
5	2013-217-05	13	2012-117-13	21	2013-217-21
6	2012-117-06	14	2013-217-14	22	2012-117-22
7	2012-117-07	15	2013-217-15	23	2012-117-23
8	2012-117-08	16	2012-117-16	24	2012-117-24

The specificity of each primer solution of the kit has been tested against 48 well characterized IHWC cell line DNAs.

Additional 5'- and 3'-primers in primer solutions 4, 5, 7, 8, 12, 14 to 17 and 20 to 23 were tested by separately adding one 3'-primer, respectively one 5'-primer. Additional 5'-primers in primer solution 1 and 19 were tested by separately adding one 3'-primer. Additional 3'-primers in primer solutions 3 and 18 were tested by separately adding one 5'-primer.

In primer solutions 2, 11, 12 and 15 one or two 5'-primers were not possible to test, and in primer solutions 3, 6, 8, 12, 13, 16 and 18 one 3'-primer was not possible to test.

Well No.	Production No.	Well No.	Production No.	Well No.	Production No.
25	2013-187-01	41	2013-187-17	57	2013-187-33
26	2013-187-02	42	2013-218-18	58	2013-187-34
27	2013-218-03	43	2013-187-19	59	2013-187-35
28	2013-187-04	44	2013-187-20	60	2013-187-36
29	2013-187-05	45	2013-187-21	61	2013-187-37
30	2013-208-06	46	2013-208-22	62	2013-187-38
31	2013-187-07	47	2013-208-23	63	2013-187-39
32	2013-221-08	48	2013-208-24	64	2013-187-40
33	2013-221-09	49	2013-187-25	65	2013-187-41
34	2013-187-10	50	2013-187-26	66	2013-218-42
35	2013-187-11	51	2013-187-27	67	2013-187-43
36	2013-187-12	52	2013-187-28	68	2013-187-44
37	2013-187-13	53	2013-221-29	69	2013-187-45
38	2013-187-14	54	2013-187-30	70	2013-187-46
39	2013-187-15	55	2013-187-31	71	2013-187-47
40	2013-187-16	56	2013-187-32	72	2013-218-48

101.702.24/06– including *Taq* pol., IFU-01
 101.702.24u/06u – without *Taq* pol., IFU-02

Visit www.olerup-ssp.com for
 “Instructions for Use” (IFU)

Lot No.: **64S**

Lot-specific information

The specificity of each primer solution of the kit has been tested against 48 well characterized IHWC cell line DNAs.

Additional 5'-primers and 3'-primers in primer solutions 27, 30, 38, 43, 53, 55 and 64 were tested by separately adding one additional 3'-primer, respectively one additional 5'-primer. Additional 3'-primers in primer solutions 26, 32, 37, 39, 42 and 59 were tested by separately adding one additional 5'-primer. Additional 5'-primers in primer solutions 25, 45, 49 and 72 were tested by separately adding one additional 3'-primer.

In primer mixes 55, 66 and 67 one 5'-primer was not possible to test, and in primer mixes 27, 53, 62 and 66 one or two 3'-primer was not possible to test.

Well No.	Production No.	Well No.	Production No.	Well No.	Production No.
73	2013-222-01	81	2013-222-09	89	2013-222-17
74	2013-222-02	82	2013-222-10	90	2013-222-18
75	2013-222-03	83	2013-222-11	91	2013-222-19
76	2013-222-04	84	2013-222-12	92	2013-222-20
77	2013-222-05	85	2013-222-13	93	2013-222-21
78	2013-222-06	86	2013-222-14	94	2013-222-22
79	2013-222-07	87	2013-222-15	95	2013-222-23
80	2013-222-08	88	2013-222-16		

The specificity of each primer solution of the kit has been tested against 48 well characterized IHWC cell line DNAs.

Additional 5'-primers and 3'-primers in primer solutions 73, 74, 79, 86 to 88 and 94 were tested by separately adding one additional 3'-primer, respectively one additional 5'-primer. Additional 3'-primers in primer solution 90 and 91 were tested by separately adding one additional 5'-primer. Additional 5'-primers in primer solutions 78, 85 and 95 were tested by separately adding one additional 3'-primer.

In primer solution 95 one 5'-primer was not possible to test, and in primer solutions 75, 83, 84, 86, 88 and 90 one or two 3'-primers were not possible to test.

The negative control primer pairs, **Production No. 2013-271-01**, can detect contamination with PCR products diluted 10^{-7} .

Results: No false positive or false negative amplifications were obtained.

Date of approval: 2013-October-15

Approved by:

Production Quality Control

101.702.24/06– including *Taq* pol., IFU-01
101.702.24u/06u – without *Taq* pol., IFU-02

Visit www.olerup-ssp.com for
“Instructions for Use” (IFU)

Lot No.: **64S**

Lot-specific information

Declaration of Conformity

Product name: *Olerup* SSP® HLA-A-B-C SSP Combi Tray
Product number: 101.702-24/24u, -06/06u
Lot number: 64S

Intended use: HLA-A, HLA-B and HLA-C low resolution histo-
compatibility testing

Manufacturer: *Olerup* SSP AB
Franzengatan 5
SE-112 51 Stockholm, Sweden
Phone: +46-8-717 88 27
Fax: +46-8-717 88 18

We, *Olerup* SSP AB, hereby declare that this product, to which this Declaration of Conformity relates is in conformity with the following Standard(s) and other normative document(s) ISO 9001:2008 and ISO 13485:2012, following the provisions of the 98/79/EC Directive on *in vitro* diagnostic medical devices, Annex II List B, conformity assessed using Annex IV, as transposed into the national laws of the Member States of the European Union.

The Technical Documentation File is maintained at *Olerup* SSP AB, Franzengatan 5, SE-112 51 Stockholm, Sweden.

The Authorized Representative located within the Community is: *Olerup* SSP AB.

Notified Body: Lloyd's Register Quality Assurance Limited, Hiramford, Middlemarch Office Village, Siskin Drive, Coventry CV3 4FJ, United Kingdom. (Notified Body number: 0088.)

Stockholm, Sweden
2013-October-15

Ann-Cathrin Jareman
Head of QA and Regulatory Affairs

101.702.24/06– including *Taq* pol., IFU-01
101.702.24u/06u – without *Taq* pol., IFU-02

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Lot No.: **64S**

Lot-specific information

101.702.24/06– including *Taq* pol., IFU-01
101.702.24u/06u – without *Taq* pol., IFU-02

Visit www.olerup-ssp.com for
“Instructions for Use” (IFU)

Lot No.: **64S**

Lot-specific information

101.702.24/06– including *Taq* pol., IFU-01
101.702.24u/06u – without *Taq* pol., IFU-02

Visit www.olerup-ssp.com for
“Instructions for Use” (IFU)

Lot No.: **64S**

Lot-specific information

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E-mail: info-ssp@olerup.com

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Olerup Inc., 901 S. Bolmar St., Suite R, West Chester, PA 19382

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E-mail: info.us@olerup.com

Web page: <http://www.olerup.com>

For information on *Olerup* SSP distributors worldwide, contact **Olerup GmbH**.

101.702.24/06 – including *Taq* pol., IFU-01
 101.702.24u/06u – without *Taq* pol., IFU-02

Visit www.olerup-ssp.com for
 “Instructions for Use” (IFU)

Lot No.: **63V**

Lot-specific information

Olerup SSP® HLA-A-B-C SSP Combi Tray

Product number: 101.702-24/06 – including *Taq* pol.
 101.702-24u/06u – without *Taq* pol.
Lot number: 63V
Expiry date: 2016-September-01
Number of tests: 24 tests – Product No. 101.702-24/24u
 6 tests – Product No. 101.702-06/06u
Number of wells per test: 95 +1
Storage - pre-aliquoted primers: dark at -20°C
 - PCR Master Mix: -20°C
 - Adhesive PCR seals RT
 - Product Insert RT

This Product Description is only valid for Lot No. 63V.

Complete product documentation consists of generic Instructions for Use (IFU), lot specific Product Insert, Worksheet and Certificate.

CHANGES COMPARED TO THE PREVIOUS OLERUP SSP® HLA-A-B-C SSP COMBI TRAY LOT (64S)

The format of the Product Insert and Worksheet have been changed.

As of lot series V, the Specificity Table is included in the lot-specific Product Insert, and the Interpretation Table is included in the Worksheet.

The **HLA-A low resolution** specificity and interpretation tables have been updated for the HLA-A alleles described since the previous *Olerup SSP®* HLA-A-B-C SSP Combi Tray lot was made (**Lot No. 64S**).

The primers of the wells detailed below have been exchanged, added or modified compared to the previous lot.

Well	5'-primer	3'-primer	rationale
3	-	Added	3'-primer added for improved resolution of the A*03:167 allele.

101.702.24/06– including *Taq* pol., IFU-01
 101.702.24u/06u – without *Taq* pol., IFU-02

Visit www.olerup-ssp.com for
 “Instructions for Use” (IFU)

Lot No.: **63V**

Lot-specific information

The **HLA-B low resolution** specificity and interpretation tables have been updated for the HLA-B alleles described since the previous *Olerup SSP*® HLA-A-B-C SSP Combi Tray lot was made (**Lot No. 64S**).

The primers of the wells detailed below have been exchanged, added or modified compared to the previous lot.

Well	5'-primer	3'-primer	rationale
35	-	Added	3'-primer added for the B*58:44 allele.

The **HLA-C low resolution** specificity and interpretation tables have been updated for the HLA-DRB alleles described since the previous *Olerup SSP*® HLA-A-B-C SSP Combi Tray lot was made (**Lot No. 64S**).

The primers of the wells detailed below have been exchanged, added or modified compared to the previous lot.

Well	5'-primer	3'-primer	rationale
85	-	Added	3'-primer added for the C*04:03:02 allele.
88	-	Added	3'-primer added for the C*14:42 allele, 3'-primer added for the C*14:58 allele.

Change in revision R01 compared to R00:

1. Primer mix 19 does not amplify the A*74:07 allele, and primer mix 11 does not amplify the A*31:03 and A*66:15 alleles. This has been corrected in the Specificity and Interpretation tables.

The A*32:01:14, 32:03, 32:38 and the A*74:07 alleles give rise to identical amplification patterns with this lot of the HLA-A low resolution primer set. These alleles can be separated by the respective high resolution primer sets.

101.702.24/06– including *Taq* pol., IFU-01
101.702.24u/06u – without *Taq* pol., IFU-02

Visit www.olerup-ssp.com for
“Instructions for Use” (IFU)

Lot No.: **63V**

Lot-specific information

Well 96 contains Negative Control primer pairs, that will amplify more than 95% of the Olerup SSP® HLA Class I, DRB, DQB1 and DPB1 amplicons as well as the amplicons generated by control primer pairs.

PCR product sizes range from 75 to 430 base pairs.
The PCR product generated by the control primer pair is 430 base pairs.

Length of PCR product	105	200	105	80	75	80
5'-primer¹	164	340	440	45	45	43
	⁵ -CAC ³	⁵ -Agg ³	⁵ -TTA ³	⁵ -Tg g ³	⁵ -Tgg ³	⁵ -Tgg ³
3'-primer²	231	2nd I	507	59	58	57
	⁵ -TgC ³	⁵ -AAA ³	⁵ -TTg ³	⁵ -CTC ³	⁵ -ggC ³	⁵ -CTC ³
A*	+	+	+			
B*	+	+	+			
C*	+	+	+			
DRB1				+	+	
DRB3				+	+	
DRB5				+		
DQB1					+	
DPB1						+

¹The nucleotide position for HLA class I genes and the codon for HLA class II genes, in the 2nd or 3rd exon, matching the specificity-determining 3'-end of the primer is given. Nucleotide and codon numbering as on the www.ebi.ac.uk/imgt/hla web site. The sequence of the 3 terminal nucleotides of the primer is given.

²The nucleotide position for HLA class I genes and the codon for HLA class II genes, in the 2nd or 3rd exon or the 2nd intron, matching the specificity-determining 3'-end of the primer is given in the anti-sense direction. Nucleotide and codon numbering as on the www.ebi.ac.uk/imgt/hla web site. The sequence of the 3 terminal nucleotides of the primer is given.

101.702.24/06– including *Taq* pol., IFU-01
 101.702.24u/06u – without *Taq* pol., IFU-02

Visit www.olerup-ssp.com for
 “Instructions for Use” (IFU)

Lot No.: **63V**

Lot-specific information

PRODUCT DESCRIPTION

HLA-A-B-C SSP Combi Tray

CONTENT

The primer set contains 5'- and 3'-primers for grouping the HLA-A*01:01 to A*80:03 alleles into the corresponding serological groups A1 to A80.

The primer set contains 5'- and 3'-primers for grouping the B*07:02 to B*83:01 alleles into the corresponding serological groups B7 to B81 as well as primer pairs for recognizing the Bw4 and Bw6 sequence motifs.

The primer set contains 5'- and 3'-primers for grouping the HLA-C*01:02 to C*18:07N alleles into the groups C*01:xx to C*18:xx.

PLATE LAYOUT

Each test consists of 96 PCR reactions in a 96 well PCR plate.

1	2	3	4	5	6	7	8
9	10	11	12	13	14	15	16
17	18	19	20	21	22	23	24
25	26	27	28	29	30	31	32
33	34	35	36	37	38	39	40
41	42	43	44	45	46	47	48
49	50	51	52	53	54	55	56
57	58	59	60	61	62	63	64
65	66	67	68	69	70	71	72
73	74	75	76	77	78	79	80
81	82	83	84	85	86	87	88
89	90	91	92	93	94	95	NC

The 96 well PCR plate is marked with 'A-B-C' in silver/gray ink.

Well No. 1 is marked with the Lot No. '63V'.

Wells 1 to 24 – HLA-A low resolution primers.

Wells 25 to 72 – HLA-B low resolution primers.

Wells 73 to 95 – HLA-C low resolution primers.

Well 96 – Negative Control.

A faint row of numbers is seen between wells 1 and 2 or wells 7 and 8 of the PCR trays. These stem from the manufacture of the trays, and should be disregarded.

The PCR plates are covered with a PCR-compatible foil.

INTERPRETATION

Only HLA-A alleles will be amplified by the 24 wells of the HLA-A low resolution primer set, **wells 1 to 24**, except that a few HLA-B and HLA-C alleles will be amplified by primer mixes 5, 6 and 9.

For further details see Specificity Table.

Only HLA-B alleles will be amplified by the 48 wells of the HLA-B low resolution primer set, **wells 25 to 72**, except that a few HLA-A and HLA-C alleles will be amplified by primer mixes 25, 27, 28, 30, 31,32, 37, 41, 43, 44, 45, 49, 50, 53, 55, 64, 65, 66, 67, 69.

101.702.24/06– including *Taq* pol., IFU-01
 101.702.24u/06u – without *Taq* pol., IFU-02

Visit www.olerup-ssp.com for
 “Instructions for Use” (IFU)

Lot No.: **63V**

Lot-specific information

For further details see Specificity Table.

Only HLA-C alleles will be amplified by the 23 wells of the HLA-C low resolution primer set, **wells 73 to 95**, except that a few HLA-A and HLA-B alleles will be amplified by primer mixes 73, 85, 87, 88, 92 and 95.
 For further details see Specificity Table.

UNIQUELY IDENTIFIED ALLELES

All the HLA-A alleles, i.e. **A*01:01 to A*80:03**, recognized by the HLA Nomenclature Committee in October 2013^{1,2} will be amplified by the primers in the HLA-A low resolution primer set, **wells 1 to 24**. The HLA-A alleles will be grouped into their corresponding serological specificities^{3,4}.

All the HLA-B alleles, i.e. **B*07:02 to B*83:01**, recognized by the HLA Nomenclature Committee in October 2013^{1,2} will be amplified by the primers in the HLA-B low resolution primer set, **wells 25 to 72**. The HLA-B alleles will be grouped into their corresponding serological specificities³.

All the HLA-C alleles, i.e. **C*01:02 to C*18:07N**, recognized by the HLA Nomenclature Committee in October 2013^{1,2} will be amplified by the primers in the HLA-C low resolution primer set, **wells 73 to 95**. The HLA-C alleles will be grouped into the C*01:xx to C*18:xx groups³.

¹HLA-A, HLA-B and HLA-C alleles listed on the IMGT/HLA web page 2013-October-11, release 3.14.0, www.ebi.ac.uk/imgt/hla.

²Alleles that have been deleted from or renamed in the official WHO HLA Nomenclature up to and including the last IMGT/HLA database release can be retrieved from web page <http://hla.alleles.org/alleles/deleted.html>.

³The HLA-A, HLA-B, HLA-C alleles will be grouped into their corresponding serological specificities, except that following alleles give rise to identical amplification patterns. These alleles can be separated by the respective high resolution SSP primer sets.

Alleles	Alleles
A*03:88, A*11:130	B*41:09, 41:29, B*45:02-45:03
A*03:152, A*24:92	B*53:30, B*57:45, 57:51
A*23:14:01-23:14:02, A*24:24, 24:71	B*54:01:02, B*55:01:07, 55:02:01-55:02:06, 55:07, 55:10, 55:12, 55:16, 55:19, 55:26, 55:30, 55:35, 55:37, 55:39, 55:41-55:43, 55:47-55:48, 55:50, 55:57
A*24:14-24:15, 24:51-24:53, 24:57, 24:64, 24:94, 24:114, 24:138, 24:188, 24:222N, 24:228, C*04:01:03	B*55:04, 55:08, 55:13, 55:27, 55:46, 55:49, B*56:01:05, 56:15, 56:19N, 56:22
A*31:08, A*33:53	B*55:23, 55:32, B*56:18, 56:31-56:32
B*07:202, B*81:02	B*57:67, 58:36
B*08:26, 08:50, 08:62, 08:85, 08:94, B*42:07	C*01:05, 01:22, 01:35-01:36, 01:79:01-01:79:02, B*39:76, B*54:18
B*13:21, 13:35, 13:59, 13:71, B*44:135, 44:158	C*01:67, C*14:58
B*14:08, B*39:25N, 39:30, 39:32-39:34, 39:47, 39:50, 39:74, 39:82	C*12:18:02, B*67:02
B*18:29, 18:72, 18:92, B*35:32:01-35:32:02, 35:37, 35:53N, 35:64:01-35:64:02, 35:68:01-35:68:02, 35:99, 35:118-35:119, 35:174	C*14:06, 14:08-14:09, 14:28, 14:53, A*30:62

⁴The A*01:136 and the A*11:94 and A*11:112 alleles may be distinguished by the different sizes of the specific PCR products generated by primer mixes 1 and 11.

101.702.24/06– including *Taq* pol., IFU-01
 101.702.24u/06u – without *Taq* pol., IFU-02

Visit www.olerup-ssp.com for
 “Instructions for Use” (IFU)

Lot No.: **63V**

Lot-specific information

SPECIFICITY TABLE

HLA-A low resolution primer set

Specificities and sizes of the PCR products of the 24 primer mixes used for HLA-A low resolution SSP typing

Primer Mix	Size of spec. PCR product ¹	Size of control band ²	HLA-A serology ³	Amplified HLA-A alleles ^{4,5}
1^{6,7}	120 bp, 145 bp, 225 bp	800 bp	A1, A36	*01:01:01:01-01:04N, 01:06-01:33, 01:35-01:142, 03:18, 03:135, 11:94, 11:112, 36:01-36:05
2⁷	175 bp, 215 bp, 255 bp, 365 bp, 415 bp	800 bp	A2, A203, A210, A19, A28	*02:01:01:01-02:01:15, 02:01:17-02:01:19, 02:01:21-02:01:81, 02:01:83-02:22:02, 02:24:01-02:35:01, 02:35:03-02:47, 02:49-02:77, 02:78 ^w , 02:79:01-02:97:02, 02:99, 02:101:01-02:128, 02:130-02:454, 02:456
3⁸	205 bp, 235 bp	1070 bp	A1, A3, A11, A32, A34, A36	*01:12, 01:19, 01:21, 01:126, 02:338, 03:01:01:01-03:17:02, 03:19-03:74, 03:76-03:94, 03:96-03:134, 03:136-03:175, 11:03, 11:20, 11:25, 11:60, 11:130, 11:158, 24:92, 32:04, 34:02:01-34:04, 34:07-34:10N, 36:02
4	190 bp	800 bp	A1, A3, A11, A30, A36, A68	*01:01:01:01-01:01:22, 01:01:24-01:01:47, 01:01:49-01:04N, 01:06-01:07, 01:09-01:11N, 01:13, 01:16N-01:18N, 01:20-01:29, 01:31N-01:33, 01:35-01:78, 01:80-01:98, 01:100-01:142, 02:78, 02:169, 03:12, 03:18, 03:88, 03:135, 11:01:01-11:27, 11:29-11:52Q, 11:54-11:158, 26:19, 26:72, 30:08, 36:04, 68:13:01, 68:66, 74:19
5	160 bp, 335 bp, 505 bp	1070 bp	A3, A9, A23, A24, A2403, A29, A31, A32	*03:15, 03:19, 03:30, 03:152, 11:139, 23:01:01-23:60, 24:02:01:01-24:11N, 24:13:01-24:15, 24:17-24:64, 24:66-24:210, 24:212-24:252N, 29:07, 29:49, 31:08, 31:29, 32:05, 33:19, 33:53, C*04:01:03
6^{9,11}	135 bp, 200 bp	800 bp	A9, A23, A24, A29, A80	*23:01:01-23:56, 23:58-23:60, 24:24, 24:71, 29:07, 29:49, 31:29, 80:01:01:01-80:03, B*18:27
7	175 bp, 205 bp	1070 bp	A2, A3, A9, A23, A24, A2403, A26	*02:17:01 ^w -02:17:03 ^w , 11:139, 23:14:01-23:14:02, 24:02:01:01-24:11N, 24:13:01-24:13:02, 24:17-24:50, 24:54-24:56, 24:58-24:63, 24:66-24:91, 24:93, 24:95-24:113, 24:115-24:137, 24:139-24:187, 24:189-24:210, 24:212-24:221, 24:223-24:227, 24:229-24:252N, 26:16, 33:19, 68:45
8	165 bp, 200 bp	800 bp	A2, A3, A10, A11, A25, A26, A28, A32, A34, A66, A68, A69	*01:51, 02:55, 03:24, 03:50, 11:10, 25:01:01-25:16, 25:18-25:23, 26:01:01-26:06, 26:08-26:15, 26:17-26:18, 26:20-26:43:02, 26:45-26:63, 26:65-26:71N, 26:73-26:88, 26:90-26:91, 26:93-26:94, 29:28, 32:15, 33:51, 34:01:01-34:11, 66:01:01-66:19, 68:01:01:01-68:106, 69:01-69:02
9^{6,10}	75 bp	800 bp	A3, A25, A32	*25:01:01-25:23, 32:01:01-32:01:13, 32:01:15-32:02, 32:04, 32:06-32:37, 32:39-32:59, B*07:81, B*08:52, B*18:67, B*38:41, B*53:05, B*53:16

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10^{6,7,11}	80 bp, 240 bp	800 bp	A10, A26, A43	*01:43, 01:51, 11:17, 11:40, 26:01:01-26:02:02, 26:04, 26:07:01-26:20, 26:22-26:29, 26:31- 26:43:02, 26:45-26:77, 26:79-26:91, 26:93-26:94, 33:13, 33:48, 43:01, 68:84
11^{6,7}	80 bp, 175 bp, 500 bp	1070 bp	A1, A9, A10, A11, A26, A31, A34, A66	*01:13, 01:28, 01:136, 03:63, 03:88, 11:01:01- 11:27, 11:29-11:52Q, 11:54-11:158, 24:19, 24:44, 26:03:01-26:03:02, 26:06, 26:21, 26:78, 26:92, 34:01:01-34:08, 34:10N-34:11, 66:01:01, 66:04- 66:11, 66:13-66:14, 66:17-66:19, 69:02, 80:02
12⁶	125 bp, 190 bp	800 bp	A3, A10, A25, A26, A31, A34, A43, A66	*02:309, 02:454, 03:01:19, 11:11, 25:05-25:06, 26:09, 26:54, 26:91, 31:03-31:04, 34:01:01- 34:11, 43:01, 66:02-66:03, 66:16
13	175 bp, 225 bp	1070 bp	A1, A2, A3, A10, A25, A26, A34, A43, A66	*01:01:56 ^w , 01:13, 02:34-02:35:03, 02:56:01- 02:56:02, 02:62, 02:103, 02:135, 03:01:01:01- 03:01:22, 03:01:24-03:07, 03:09-03:11N, 03:13- 03:31, 03:33-03:35, 03:37-03:40, 03:42-03:56, 03:58, 03:60-03:71, 03:73-03:87, 03:90-03:106, 03:109-03:110, 03:112-03:141, 03:143-03:151, 03:153-03:171, 03:174-03:175, 25:01:01-25:05, 25:07-25:23, 26:01:01-26:01:20, 26:01:22- 26:01:29, 26:02:01 ^w , 26:03:01-26:03:02, 26:05- 26:08, 26:10-26:28, 26:29 ^w , 26:30-26:33, 26:35- 26:43:02, 26:45-26:48, 26:49 ^w , 26:50-26:72, 26:74-26:77, 26:79-26:90, 26:92-26:94, 30:55, 34:08, 43:01, 66:01:01, 66:04-66:09, 66:10 ^w , 66:11-66:15, 66:17-66:19, 68:71, 74:13
14^{6,7,11}	80 bp, 115 bp, 200 bp, 240 bp, 470 bp	1070 bp	A26, A29, A31, A34	*02:237, 02:309, 02:454, 03:95, 26:19, 26:22, 29:01:01:01-29:55, 31:03-31:04, 32:42, 34:04, 66:09
15^{6,7,13,14}	90 bp, 135 bp, 205 bp	1070 bp	A1, A30	*01:13, 01:28, 03:43, 03:82, 11:113, 30:01:01- 30:04:02, 30:06-30:20, 30:22-30:78N, 31:35
16	240 bp, 380 bp	1070 bp	A2, A24, A31, A32	*02:237, 03:95, 29:14, 31:01:02-31:79, 32:05, 33:53
17	140 bp, 180 bp	1070 bp	A32	*01:95, 03:43, 03:82, 24:243, 29:13, 29:39, 31:35, 32:01:01-32:03, 32:05-32:59, 74:07
18	200 bp, 390 bp	1070 bp	A33, A68	*02:243:01-02:243:02, 29:48, 32:15, 33:01:01- 33:01:07, 33:03:01-33:37, 33:39-33:52, 33:54- 33:74N, 68:29, 74:04
19	340 bp, 375 bp	800 bp	A2, A19, A68, A74	*01:121, 02:65, 02:407, 02:449, 68:25, 74:01- 74:06, 74:08-74:19
20¹¹	210 bp, 240 bp	800 bp	A2, A210, A25, A68	*02:34-02:35:03, 02:46, 02:48, 02:56:01- 02:56:02, 02:62, 02:70, 02:78, 02:103, 02:129, 25:05, 26:54, 68:01:01:01-68:106
21⁶	65 bp, 240 bp, 375 bp	800 bp	A2, A26, A28, A32, A66, A68, A69	*02:55, 02:149, 02:243:01-02:243:02, 02:309, 23:57, 24:82, 26:22, 31:41, 32:06, 33:22, 66:06, 66:09, 68:29, 68:105, 69:01-69:02
22^{6,12}	85 bp, 240 bp	800 bp	A2, A36	*02:34-02:35:03, 02:46, 02:48, 02:56:01- 02:56:02, 02:62, 02:70, 02:78, 02:103, 02:129, 11:155, 31:62, 36:01-36:05

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23 ^{6,11}	75 bp, 160 bp, 240 bp, 495 bp	800 bp	A2, A26, A28, A36, A68, A80	*02:55, 03:41, 03:63, 03:75, 03:88, 11:130, 24:18, 24:204, 24:213, 26:03:01-26:03:02, 26:05- 26:06, 26:21, 26:30, 26:78, 33:24, 36:02, 68:05, 68:15, 68:20, 80:01:01:01-80:01:01:02, 80:03
24 ¹³	360 bp	1070 bp	A10, A26, A31, A66	*02:135, 02:309, 02:454, 03:01:19, 25:13, 26:30, 26:65, 31:04, 34:09, 66:02-66:03, 66:12, 66:16

¹Alleles are assigned by the presence of specific PCR product(s). However, the sizes of the specific PCR products may be helpful in the interpretation of HLA-A low resolution SSP typings.

When the primers in a primer mix can give rise to HLA-specific PCR products of more than one length this is indicated if the size difference is more than 20 base pairs. Size differences of 20 base pairs or less are not given. For high resolution SSP kits, the alleles listed are specified according to amplicon length.

Nonspecific amplifications, i.e. a ladder or a smear of bands, may sometimes be seen. GC-rich primers have a higher tendency of giving rise to nonspecific amplifications than other primers.

PCR fragments longer than the control bands may sometimes be observed. Such bands should be disregarded and do not influence the interpretation of the SSP typings.

PCR fragments migrating faster than the control bands, but slower than a 400 bp fragment may be seen in some gel read-outs. Such bands can be disregarded and do not influence the interpretation of the SSP typings.

Some primers may give rise to primer oligomer artifacts. Sometimes this phenomenon is an inherent feature of the primer pair(s) of a primer mix. More often it is due to other factors such as too low amount of DNA in the PCR reactions, taking too long time in setting up the PCR reactions, working at elevated room temperature or using thermal cyclers that are not pre-heated.

²The internal positive control primer pairs amplify segments of the human growth hormone gene. The internal positive control bands are 1070 or 800 base pairs respectively, well distribution as outlined in the table. Well number 1 contains the shorter, 800 bp, internal positive control band. The well distribution of the internal controls can help in orientation of the kit on gel photo, as well as allow for kit identification. In the presence of a specific amplification the intensity of the control band often decreases.

³The serological reactivity of all HLA-A alleles is not known. In this table we use the expert-assigned serological grouping in Tissue Antigens (2009) 73:95-170 and the serological grouping of the sequence-defined allele.

⁴For several HLA Class I alleles 1st and/or 4th exon(s) and beyond, as well as intron nucleotide sequences, are not available. In these instances it is not known whether some of the primers of the SSP sets are completely matched with the target sequences or not. Assumption is made that unknown sequences in these regions are conserved within allelic groups.

⁵Only HLA-A alleles will be amplified by the 24 wells of the HLA-A low resolution primer set, except that a few HLA-B and HLA-C alleles will be amplified by primer mixes 5, 6 and 9.

⁶HLA-specific PCR products shorter than 125 base pairs have a lower intensity and are less sharp than longer PCR products.

⁷The primer pairs in wells 1, 2, 10, 11, 14 and 15 will in many samples give rise to two or three HLA-specific PCR fragments.

⁸Primer mix 3 may faintly amplify the A*30:04:01-30:04:02, 30:06, 30:17, 30:29, 30:46 and 30:77 alleles.

⁹Primer mix 6 may give rise to a lower yield of A*23 alleles than the other A low primer mixes.

¹⁰Primer mix 9 may weakly amplify the A*34 alleles.

¹¹Primer mixes 6, 10, 14, 20 and 23 have a tendency to giving rise to primer oligomer formation.

¹²Primer mix 22 might faintly amplify most A*11 alleles.

¹³Primer mixes 15 and 24 may give rise to a lower yield of HLA-specific PCR product than the other HLA-A low primer mixes.

¹⁴Primer mix 15 may have tendency of unspecific amplification.

'w', might be weakly amplified.

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SPECIFICITY TABLE

HLA-B low resolution primer set

Specificities and sizes of the PCR products of the 48 primer mixes used for HLA-B low resolution SSP typing

Primer Mix	Size of spec. PCR product ¹	Size of control band ²	HLA-B serol. ³	Amplified HLA-B alleles ^{4,5}
25^{6,10}	110 bp	800 bp	7, 703, 40, 41, 42, 48, 61	*07:02:01-07:18:02, 07:20-07:32, 07:34-07:39, 07:41-07:47, 07:49N-07:50, 07:52, 07:54-07:59, 07:61-07:99, 07:101-07:121, 07:123-07:138, 07:140-07:154, 07:156-07:163, 07:166-07:201N, 07:203-07:204, 08:79, 15:138, 15:230, 15:241, 37:07, 40:15-40:16, 40:23, 40:32, 40:98, 40:136, 40:158, 40:183, 40:198, 40:231, 41:08, 42:05:01-42:05:02, 44:150, 48:05, 48:08, 48:15, C*02:23, C*04:77
26	215 bp	1070 bp	8, 44	*08:01:01-08:05, 08:07-08:25, 08:27-08:49, 08:51-08:61, 08:63-08:64, 08:66-08:84, 08:86N-08:93, 08:95-08:113, 15:142, 15:180, 35:218, 44:49, 44:156, 49:25, 51:68
27	140 bp, 235 bp	1070 bp	7, 8, 13, 15, 35, 4005, 44, 50, 49, 61, 62, 77	*07:20, 07:24, 07:60, 07:100, 07:131, 08:21, 08:25, 13:01:01-13:04, 13:06-13:08, 13:10-13:23, 13:25-13:38, 13:40-13:57, 13:59-13:66, 13:68-13:71, 15:07:01-15:07:02, 15:36 ^w , 15:45, 15:55, 15:68, 15:89 ^w , 15:126, 15:207, 35:05:01-35:05:03, 35:16-35:17:01, 35:22, 35:30, 35:51, 35:58, 35:72, 35:89, 35:97, 35:113-35:114, 35:125, 35:164, 35:199, 35:232, 40:05, 40:71, 40:174, 44:08 ^w , 44:54, 44:57 ^w , 44:60, 44:106, 44:110, 44:135, 44:158, 46:12, 51:64, 51:148, 53:14, 55:51, 58:18, C*03:05, C*03:25, C*03:27, C*03:143, C*03:167
28⁷	130 bp, 265 bp	800 bp	12, 13, 14, 17, 21, 35, 40, 41, 44, 45, 47, 49, 50, 60, 61, 64, 65	*13:01:01-13:04, 13:06-13:13, 13:15-13:23, 13:25-13:57, 13:59-13:71, 14:01:01-14:02:08, 14:03-14:04, 14:07N, 14:09, 14:11-14:12, 14:14-14:36, 15:46, 15:53, 15:106, 15:212, 18:44:01-18:44:02, 35:46-35:47, 35:63, 35:154, 35:207, 35:217, 40:01:01-40:01:31, 40:07, 40:10:01-40:10:02, 40:14:01-40:16, 40:22N-40:23, 40:25, 40:30-40:34, 40:36, 40:38, 40:42-40:43, 40:45, 40:47-40:49, 40:51-40:55, 40:58-40:63, 40:65-40:67, 40:69, 40:72:01-40:73, 40:76-40:77, 40:79-40:81, 40:84, 40:87:01-40:88, 40:92, 40:100-40:102, 40:106, 40:108, 40:110, 40:112-40:114, 40:116-40:118N, 40:121, 40:123-40:126, 40:128-40:130:01, 40:132, 40:134-40:136, 40:139-40:141, 40:146-40:147, 40:150-40:156, 40:158, 40:160:01-40:160:02, 40:163-40:164, 40:166, 40:168, 40:171-40:172, 40:175, 40:178-40:179, 40:182-40:183, 40:186-40:188, 40:191-40:199, 40:204, 40:207-40:208, 40:212-40:213, 40:215-40:219, 40:221-40:223, 40:227-40:228, 40:231, 40:233-40:242, 40:245, 40:247, 40:249, 41:01-41:29, 44:02:01:01-44:03:06, 44:03:08-44:03:15, 44:03:17-44:03:18, 44:04-44:05:04, 44:09-44:39, 44:41:01-44:43:02, 44:45-44:56N, 44:58N-44:80, 44:82, 44:84:01-44:102, 44:104-44:110, 44:112-44:129, 44:132-44:133, 44:135-44:144, 44:146-44:155, 44:157-44:183, 45:01-45:14, 47:01:01:01-47:08, 49:01:01-49:02, 49:04-49:24, 50:01:01-50:02, 50:04-50:06, 50:08-50:20, 50:31-50:33, 53:30, 57:45, 57:51, C*01:30, C*12:87
29⁸	185 bp, 235 bp	800 bp	7, 16, 17, 27, 2708,	*07:02:32, 07:197, 14:01:01-14:01:04, 14:07N-14:08, 14:10, 14:12, 14:14, 14:19, 14:26, 14:32, 27:01-27:05:15,

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30	180 bp	800 bp	37, 38, 3901, 3902, 39, 64, 67	27:05:17-27:05:19, 27:05:21-27:06, 27:07:04-27:10, 27:12-27:13, 27:16-27:18, 27:20, 27:23, 27:26-27:27, 27:29, 27:31, 27:35-39:02, 39, 27:37, 27:39-27:42, 27:44-27:46, 27:48-27:61, 27:64N-27:69, 27:72-27:75, 27:77-27:80, 27:82-27:107, 37:02, 38:01:01-38:02:02, 38:02:04-38:03, 38:07-38:24, 38:26-38:32, 38:34N-38:45, 39:01:01:01-39:01:01:03, 39:01:03-39:01:08, 39:01:10-39:02:01, 39:03, 39:05:01-39:06:02, 39:07-39:09, 39:11, 39:14-39:15, 39:18, 39:19:02, 39:22, 39:24:01-39:39:01, 39:40:01N-39:44, 39:46-39:48, 39:50-39:62, 39:64-39:71, 39:73-39:75, 39:77, 39:79-39:82, 47:04-47:05, 48:21, 48:26, 67:01:01, 67:03
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31	290 bp	1070 bp	15, 22, 62, 63, 71, 72, 75, 76, 77, 46	*15:01:01:01-15:01:03, 15:01:06-15:02:06, 15:03:03, 15:04-15:08, 15:10:02-15:11:03, 15:11:05-15:15, 15:17:01:01-15:17:02, 15:19-15:21, 15:24:01-15:28, 15:30-15:36, 15:38:01-15:40, 15:42-15:46, 15:48, 15:50, 15:55-15:58, 15:60, 15:63, 15:65-15:66, 15:70-15:71, 15:73, 15:75-15:79N, 15:81-15:89, 15:92, 15:94N, 15:96-15:97, 15:101-15:102, 15:104-15:107, 15:109-15:113, 15:116-15:118, 15:120-15:122, 15:125-15:126, 15:128-15:129, 15:135-15:150, 15:152, 15:154-15:155, 15:157, 15:159-15:160, 15:162-15:172, 15:174-15:175, 15:177-15:179, 15:181N-15:185, 15:187-15:196, 15:199, 15:201-15:209N, 15:211, 15:213-15:219, 15:223-15:225, 15:227-15:228, 15:230-15:234, 15:236-15:237, 15:239-15:241, 15:244-15:251, 15:256-15:262N, 15:264-15:265, 15:267-15:273, 15:276-15:280, 15:283-15:289, 15:291, 46:01:01-46:43, C*01:73, C*07:02:30, C*08:16:02
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33 ^{8,9,11}	165 bp, 190 bp, 390 bp	1070 bp	5, 17, 21, 35, 51, 5102, 5103, 52, 56, 62, 63, 70, 78	*13:62, 15:01:02, 15:09, 15:16:01-15:17:02, 15:67, 15:95, 15:162, 15:168, 15:177, 15:196, 15:208, 15:216, 15:222, 15:230, 15:243, 15:254, 15:268, 15:273, 15:277-15:278, 35:01:10, 35:04:02, 40:26, 40:28, 44:62, 49:18, 50:14, 51:01:01-51:01:03, 51:01:05-51:02:03, 51:02:05-51:09:02, 51:11N-51:12, 51:13:02-51:14, 51:16-51:23, 51:24:03-51:24:05, 51:26-51:33, 51:37-51:41N, 51:43-51:44N, 51:46, 51:48-51:61:02, 51:63-51:80,

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53 ⁶	80 bp, 115 bp, 160 bp, 195 bp, 225 bp, 260 bp	1070 bp	12, 35, 37, 42, 44, 45, 47, 57	*08:49, 08:60, 08:76, 08:87, 35:38, 35:45, 35:71, 35:115, 35:169, 37:01:01-37:01:07, 37:01:09, 37:03N-37:06:01, 37:08, 37:10-37:38, 37:41-37:42N, 40:132, 40:178, 40:231, 42:13, 44:02:01:01-44:14, 44:16-44:17, 44:19N-44:36, 44:38-44:63, 44:65-44:134, 44:136-44:149N, 44:151-44:157, 44:159-44:165, 44:167-44:183, 51:42, 53:22, 57:07, 57:09, 57:24, 83:01, C*15:25
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55	130 bp, 270 bp	800 bp	17, 18, 22, 35, 37, 46, 51, 53, 62, 78	*14:10, 15:57 ^w , 15:289, 18:22, 18:69, 35:21, 35:24:01-35:24:02, 35:81, 35:96, 35:109, 35:157, 35:188, 35:190, 35:233, 37:04:01-37:04:02, 40:28, 46:01:01-46:39, 46:41N-46:43, 51:04, 51:46, 51:56:01-51:56:02, 51:139, 53:02, 53:06, 53:28, 57:14, 58:09, C*01:73, C*15:39
56^{6,13}	90 bp, 410 bp	1070 bp	15, 22, 27, 35, 47, 54, 55, 56, 78, 81, 82	*07:65, 27:01 ^w , 27:02:01-27:11, 27:13-27:15, 27:17, 27:19-27:21, 27:24-27:28, 27:30-27:38, 27:40-27:58, 27:60-27:76, 27:78-27:91, 27:93-27:107, 35:76, 35:186, 35:229, 44:90, 44:97, 47:01:01:01-47:03, 47:06-47:08, 54:01:01-54:29, 55:01:01-55:05, 55:07-55:17, 55:19-55:60, 56:01:01-56:16, 56:18-56:22, 56:24-56:32, 56:34-56:41, 56:43, 81:01, 82:01-82:03, 83:01
57⁶	90 bp, 175 bp	1070 bp	15, 27, 35, 48, 60, 62, 75, 77, 81	*07:174, 07:202, 13:36, 15:02:01-15:02:06, 15:08, 15:11:01-15:11:05, 15:13:01-15:13:02, 15:15, 15:21, 15:31, 15:44, 15:55, 15:76 ^w , 15:88-15:89, 15:112, 15:121, 15:139, 15:144, 15:148, 15:170, 15:189, 15:191, 15:194, 15:209N, 15:213-15:215, 15:223, 15:265, 15:283-15:284, 15:291, 27:24, 35:46, 40:31, 40:45, 40:80, 48:01:01-48:01:04, 48:04, 48:06-48:07, 48:09, 48:11, 48:15-48:16, 48:18-48:20, 48:22, 48:24, 48:27-48:32, 56:39 ^w , 81:01-81:06
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59⁶	120 bp, 210 bp	800 bp	5, 13, 15, 17, 22, 35, 45, 49, 50, 51, 5102, 5103, 52, 55, 56, 62, 63, 78	*07:78, 07:84, 13:16, 13:31 ^w , 13:48, 13:62, 14:37, 15:04 ^w , 15:16:01-15:16:03, 15:42, 15:67, 15:95, 15:137 ^w , 15:254, 40:95, 40:148, 40:161, 46:32 ^w , 49:01:01, 49:01:03-49:10, 49:12-49:26, 50:01:01-50:02, 50:04-50:11, 50:13-50:16, 50:18-50:20, 50:31-50:34, 51:01:01-51:03, 51:05, 51:07:01-51:09:02, 51:11N-51:14, 51:16-51:24:05, 51:26-51:41N, 51:43-51:44N, 51:48-51:55, 51:57-51:58, 51:60-51:61:02, 51:63, 51:65-51:80, 51:82-51:134, 51:136-51:138, 51:140-51:147, 51:149N-51:154, 52:01:01:01-52:32, 54:20, 55:01:01-55:01:06, 55:01:08-55:01:11, 55:03, 55:05, 55:09, 55:11, 55:15, 55:17, 55:21 ^w , 55:24-55:25, 55:28-55:29, 55:31, 55:33, 55:36, 55:38, 55:40, 55:44-55:45, 55:52-55:55N, 55:58-55:60, 56:05:01-56:06, 56:21, 56:25, 56:37, 58:08:01-58:08:02, 78:01:01-78:07
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61	145 bp	1070 bp	12, 21, 35, 40, 4005, 41, 45, 47, 50, 60, 61	*07:133, 15:46, 15:53, 15:106, 15:143, 15:212, 18:48, 35:19, 35:47, 35:63, 35:154, 35:217, 39:69, 40:01:01-40:11:02, 40:14:01-40:16, 40:18, 40:20, 40:22N-40:40, 40:42-40:45, 40:48-40:75, 40:77-40:92, 40:94-40:95, 40:97-40:108, 40:111-40:116, 40:118N-40:136, 40:138-40:156, 40:158-40:184, 40:186-40:187, 40:189-40:200, 40:202-40:207, 40:210-40:249, 41:01-41:04, 41:05 [?] , 41:06-41:25, 41:27-41:29, 44:09, 44:46, 44:75, 44:90, 44:129, 44:131, 45:01-45:14, 47:02, 47:03 ^w , 50:01:01-50:02,

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62⁹	300 bp	1070 bp	7, 12, 13, 15, 17, 18, 21, 27, 2708, 35, 37, 38, 39, 3902, 40, 4005, 41, 44, 45, 47, 48, 49, 50, 52, 60, 61, 62, 70, 72, 76	*07:54, 07:123, 08:17, 08:38, 08:54, 08:101, 13:01:01-13:04, 13:06, 13:08-13:23, 13:25-13:35, 13:37-13:71, 15:01:01-01-15:01:04, 15:01:06-15:01:18, 15:01:20-15:01:33, 15:03:01-15:07:02, 15:12, 15:14, 15:19-15:20, 15:24:01-15:27:03, 15:30, 15:32:01-15:36, 15:38:01-15:40, 15:42-15:43, 15:45-15:50, 15:53-15:54, 15:56-15:58, 15:60-15:63, 15:65-15:66, 15:68-15:71, 15:73-15:75, 15:77-15:79N, 15:81-15:87, 15:91-15:92, 15:94N, 15:96-15:98, 15:101-15:107, 15:109-15:111N, 15:113, 15:116-15:118, 15:122-15:123, 15:125-15:129, 15:131-15:132, 15:135-15:138, 15:140-15:142, 15:145-15:147, 15:150-15:152, 15:154-15:160, 15:163-15:167, 15:169, 15:171-15:175, 15:178-15:179, 15:181N-15:185, 15:187-15:188, 15:190N, 15:192-15:193, 15:195, 15:199, 15:201-15:207, 15:210-15:212, 15:217-15:220, 15:224-15:225, 15:227-15:228, 15:231-15:237, 15:239-15:245Q, 15:247-15:251, 15:253, 15:255-15:262N, 15:264, 15:266-15:267, 15:269-15:272N, 15:274, 15:276-15:282, 15:286-15:289, 18:12, 27:01-27:21, 27:24-27:91, 27:93-27:107, 35:10, 35:13, 35:16, 35:28, 35:63, 35:69, 35:80, 35:207, 35:226, 37:01:01-37:07, 37:09-37:42N, 38:03-38:04, 38:25, 39:02:01-39:02:02, 39:08, 39:13:01-39:13:02, 39:22-39:23, 39:49, 40:01:01-40:07, 40:09-40:16, 40:18-40:24, 40:26-40:40, 40:42-40:67, 40:70:01-40:105, 40:107-40:165, 40:167-40:231, 40:233-40:249, 41:01-41:29, 42:11, 44:02:01:01-44:02:21, 44:02:23-44:05:04, 44:07-44:11, 44:13-44:170, 44:172-44:183, 45:01-45:14, 47:01:01:01-47:08, 48:01:01-48:05, 48:07-48:15, 48:17-48:32, 49:01:01-49:25, 50:01:01-50:02, 50:04-50:14, 50:16-50:20, 50:31-50:34, 52:01:01:01-52:32, 53:17:01-53:17:02, 53:28, 55:18, 55:34, 55:40, 78:05-78:06
63^{8,14}	160 bp, 330 bp	1070 bp	22, 44, 45, 47, 54	*08:87, 44:02:01:01-44:02:29, 44:06, 44:08-44:09, 44:11-44:12, 44:16, 44:19N-44:24, 44:27:01-44:27:02, 44:33-44:34:02, 44:41:01-44:41:02, 44:44, 44:48-44:49, 44:52N-44:53, 44:55, 44:59:01-44:59:02, 44:63, 44:66-44:68, 44:71-44:74, 44:80, 44:83-44:84:02, 44:86-44:87, 44:89-44:91, 44:93, 44:95, 44:97, 44:99-44:102, 44:104, 44:106, 44:112-44:113, 44:116, 44:118-44:119, 44:121, 44:126:01-44:127, 44:131-44:132, 44:137-44:138Q, 44:142, 44:145, 44:148-44:149N, 44:151-44:152, 44:162, 44:168-44:173, 44:176-44:177, 44:179, 54:01:01, 54:01:03-54:30, 83:01
64	180 bp, 210 bp	1070 bp	13, 15, 18, 35, 39, 40, 54, 55, 56, 59, 78	*07:65, 13:06, 13:53, 14:37, 15:42, 15:86, 15:224, 18:04, 35:08:05, 35:42:02, 35:60, 35:185, 39:17, 39:63, 40:01:11, 40:58, 45:08, 46:18, 46:40, 54:01:01-54:02, 54:05N, 54:07-54:08N, 54:10, 54:12-54:13, 54:16-54:25, 54:27-54:30, 55:01:01-55:03, 55:05, 55:07, 55:10-55:12, 55:15-55:16, 55:18-55:19, 55:21, 55:25-55:26, 55:29-55:31, 55:33-55:45, 55:47-55:48, 55:50, 55:52-55:57, 55:59-55:60, 56:05:01, 56:06, 56:10, 56:23, 59:01:01:01-59:01:01:02, 59:05-59:06, 78:01:01-78:01:02, 78:02:02-78:03, 78:07, C*15:02:04
65	180 bp	1070 bp	12, 15, 21, 22, 44, 45, 49, 50, 51, 56, 61, 62, 82	*13:03, 13:48, 15:73, 40:71, 44:10, 44:15, 44:18, 44:140, 45:01, 45:04-45:07, 45:11-45:14, 46:11, 49:01:01-49:03, 49:06, 49:08-49:17, 49:19N-49:26, 50:01:01-50:02, 50:04-50:08, 50:10-50:13, 50:15-50:19, 50:32, 50:34, 51:15, 51:62, 51:106, 52:25, 54:03, 56:01:01-56:01:04, 56:01:06-56:02, 56:04, 56:07-56:08, 56:13-56:14, 56:16-56:17, 56:20:01-56:20:02, 56:24-56:30,

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66⁶	90 bp, 240 bp	800 bp	57	*55:14, 57:01:01-57:44, 57:46-57:50, 57:52-57:68, 58:36, C*06:72
67^{6,13}	90 bp	1070 bp	5, 13, 15, 17, 39, 55, 56, 58, 60, 61, 62, 71	*07:182N, 13:11, 15:18:03, 15:73, 15:224, 39:17, 40:48, 40:71, 51:62, 56:02, 56:04, 56:10, 58:01:01-58:01:13, 58:02, 58:04- 58:29, 58:31N-58:35, 58:37-58:43, 58:45:01-58:48, C*02:06^w, C*02:47^w
68⁶	95 bp	1070 bp	8, 18, 22, 35, 37, 38, 39, 44, 51, 5102, 5103, 53, 78	*07:65 ^w , 07:134 ^w , 08:32, 18:01:01:01-18:11, 18:13-18:15, 18:17N-18:36, 18:38-18:47, 18:49-18:65, 18:67-18:94N, 35:01:01:01-35:08:04, 35:08:06-35:09:03, 35:11:01-35:12:03, 35:14:01-35:15, 35:17:01-35:18, 35:20:01-35:24:02, 35:27, 35:29:01-35:45, 35:48, 35:50-35:62, 35:64:01-35:68:02, 35:70- 35:72, 35:74-35:75, 35:76 ^w , 35:77-35:79, 35:81-35:153, 35:155- 35:185, 35:187-35:190, 35:192-35:197, 35:199-35:206, 35:208- 35:209, 35:211-35:216N, 35:218-35:225, 35:227-35:240, 37:08, 38:06-38:07, 39:19:01-39:19:02, 44:06, 51:01:01-51:24:05, 51:26-51:46, 51:48-51:103, 51:105-51:111, 51:113-51:117, 51:119-51:146, 51:148-51:154, 53:01:01-53:16, 53:18-53:27, 53:29, 53:31, 56:06 ^w , 78:01:01-78:04, 78:07
69^{6,10}	115 bp, 150 bp	1070 bp	15, 18,22, 27, 35, 39, 46, 55, 62, 72, 73, 75, 76	*07:100, 13:31, 13:41, 15:01:01:01-15:01:04, 15:01:06-15:01:16, 15:01:18-15:01:30, 15:01:32-15:01:33, 15:04, 15:07:01-15:08, 15:11:01-15:12, 15:14-15:15, 15:19, 15:24:01-15:24:02, 15:26N- 15:28, 15:30, 15:32:01, 15:34-15:35, 15:38:01-15:38:02, 15:43, 15:45-15:46, 15:50, 15:53-15:54, 15:56-15:58, 15:60, 15:63, 15:66, 15:68, 15:70-15:71, 15:73, 15:75-15:77, 15:79N, 15:81- 15:82, 15:85, 15:87, 15:92, 15:94N, 15:96-15:97, 15:101-15:102, 15:104-15:105, 15:109-15:111N, 15:113, 15:117-15:118, 15:120, 15:122, 15:125-15:126, 15:128-15:129, 15:135, 15:137, 15:140, 15:142-15:149N, 15:152, 15:154, 15:157, 15:159-15:160, 15:163-15:167, 15:169, 15:171-15:172, 15:174-15:175, 15:178, 15:180-15:184, 15:187, 15:189-15:193, 15:201-15:203, 15:205- 15:207, 15:209N, 15:211-15:212, 15:215, 15:217, 15:225, 15:227-15:228, 15:231-15:234, 15:236, 15:239, 15:241, 15:244- 15:247, 15:251, 15:256-15:262N, 15:264, 15:267, 15:269-15:270, 15:272N, 15:276-15:280, 15:284-15:286, 18:19, 27:25, 27:75, 35:14:01-35:14:02, 35:43:01-35:44, 35:62, 35:67, 35:79, 35:86, 35:102, 35:117, 35:135, 35:163, 35:185, 35:213, 39:18, 39:36, 44:146, 46:01:01-46:02, 46:04-46:05, 46:07N, 46:09-46:10, 46:12, 46:14-46:17, 46:20, 46:22-46:24, 46:26-46:32, 46:34- 46:42, 51:61:01-51:61:02, 52:21, 54:06, 55:21, 56:03, 56:43, 73:01-73:02, A*26:68, A*68:56, C*02:56, C*06:20, C*12:50
70¹⁵	360 bp	1070 bp	Bw4	
71	350 bp	1070 bp	Bw6	
72	285 bp	800 bp	7, 703, 8, 35, 40, 41, 42, 48, 53, 60, 61, 81	*07:02:01-07:02:38, 07:03-07:06, 07:08-07:18:02, 07:20-07:32, 07:34-07:39, 07:41-07:52, 07:54-07:59, 07:61-07:76, 07:79- 07:83, 07:85-07:99, 07:101-07:121, 07:123-07:138, 07:140- 07:164, 07:166-07:192, 07:194-07:195, 07:199-07:204, 08:01:01- 08:01:20, 08:01:22-08:05, 08:07-08:08N, 08:10-08:11, 08:13- 08:15, 08:17-08:83, 08:85-08:88, 08:90-08:102, 08:104-08:106, 08:108-08:112, 35:66, 35:87, 37:07, 40:15-40:16, 40:30-40:32, 40:34, 40:45, 40:59, 40:80, 40:98, 40:137, 40:160:01-40:160:02, 41:02:01-41:02:05, 41:04, 41:10-41:11, 41:13, 41:18-41:19, 41:23-41:24, 41:27, 42:01:01-42:02, 42:05:01-42:07, 42:09- 42:13, 42:15-42:20, 44:150, 44:166, 48:01:01-48:01:04, 48:05- 48:12, 48:14-48:20, 48:22, 48:27-48:32, 53:15, 81:01-81:06

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Lot-specific information

¹Alleles are assigned by the presence of specific PCR product(s). However, the sizes of the specific PCR products may be helpful in the interpretation of HLA-B low resolution SSP typings.

When the primers in a primer mix can give rise to HLA-specific PCR products of more than one length this is indicated if the size difference is more than 20 base pairs. Size differences of 20 base pairs or less are not given. For high resolution SSP kits, the alleles listed are specified according to amplicon length.

Nonspecific amplifications, i.e. a ladder or a smear of bands, may sometimes be seen. GC-rich primers have a higher tendency of giving rise to nonspecific amplifications than other primers.

PCR fragments longer than the control bands may sometimes be observed. Such bands should be disregarded and do not influence the interpretation of the SSP typings.

PCR fragments migrating faster than the control bands, but slower than a 400 bp fragment may be seen in some gel read-outs. Such bands can be disregarded and do not influence the interpretation of the SSP typings.

Some primers may give rise to primer oligomer artifacts. Sometimes this phenomenon is an inherent feature of the primer pair(s) of a primer mix. More often it is due to other factors such as too low amount of DNA in the PCR reactions, taking too long time in setting up the PCR reactions, working at elevated room temperature or using thermal cyclers that are not pre-heated.

²The internal positive control primer pairs amplify segments of the human growth hormone gene. The internal positive control bands are 1070 or 800 base pairs respectively, well distribution as outlined in the table. Well number 25 contains the shorter, 800 bp, internal positive control band. The well distribution of the internal controls can help in orientation of the kit on gel photo, as well as allow for kit identification. In the presence of a specific amplification the intensity of the control band often decreases.

³The serological reactivity of all HLA-B alleles is not known. In this table we use the expert-assigned serological grouping in Tissue Antigens (2009) 73:95-170 and the serological grouping of the sequence-defined allele.

⁴For several HLA Class I alleles 1st and/or 4th exon(s) and beyond, as well as intron nucleotide sequences, are not available. In these instances it is not known whether some of the primers of the SSP sets are completely matched with the target sequences or not. Assumption is made that unknown sequences in these regions are conserved within allelic groups.

⁵Only HLA-B alleles will be amplified by the 48 wells of the HLA-B low resolution, primer set, except that a few HLA-A and HLA-C alleles will be amplified by primer mixes 25, 27, 28, 30, 31,32, 37, 41, 43, 44, 45, 49, 50, 53, 55, 64, 65, 66, 67, 69.

⁶HLA-specific PCR products shorter than 125 base pairs have a lower intensity and are less sharp than longer PCR products.

⁷Primer mix 28 may give rise to a lower yield of HLA-specific PCR product than the other HLA-B low resolution primer mixes in B*40, B*41, B*45, B*49 and B*50 alleles.

⁸Primer mixes 29, 33 and 63 may give rise to a lower yield of HLA-specific PCR product than the other HLA-B low resolution primer mixes.

⁹Primer mixes 33 and 62 may have tendencies of unspecific amplifications, most pronounced in primer mix 33.

¹⁰Primer mixes 25, 43, 44, 50 and 69 have a tendency to giving rise to primer oligomer formation.

¹¹The B*57 and B*58 alleles might be faintly amplified by primer mix 33.

¹²The C*17:01 to C*17:04 alleles might be faintly amplified by primer mix 49.

¹³Primer mixes 56 and 67 may generate a false positive band of about 800 base pairs. This band should be disregarded when interpreting HLA-B low resolution typings.

¹⁴Primer mix 63 may give rise to a lower yield of B*54 alleles than the other B low primer mixes.

¹⁵The Bw4-associated HLA-A specificities A9, A23, A24, A2403, A25 and A32 are not amplified by the primer pair in primer mix 70.

'w', might be weakly amplified.

'?', nucleotide sequence information not available for the primer matching sequence.

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Lot-specific information

SPECIFICITY TABLE

HLA-C low resolution SSP typing

Specificities and sizes of the PCR products of the 23+1 primer mixes used for HLA-C low resolution SSP typing

Primer Mix	Size of spec. PCR product ¹	Size of control band ²	Amplified HLA class I ^{3,4} alleles
73⁵	90bp, 150 bp	800 bp	*01:02:01-01:84, 04:71, 07:316, 14:58, B*39:76, B*54:18
74⁶	130 bp, 200 bp, 270 bp, 300 bp	800 bp	*01:10, 01:43, 02:02:01-02:02:03, 02:02:05-02:40, 02:42-02:57, 02:59-02:68, 02:70-02:72, 04:32, 04:77, 06:08, 07:101, 07:148, 07:161, 08:31, 14:25, 15:42, 16:29, 16:50, 17:01:01-01-17:06, 17:08-17:16, 17:18-17:22, 18:03
75¹³	280 bp	800 bp	*02:02:01-02:02:03, 02:02:05-02:03, 02:04 ^w , 02:05:01-02:13, 02:14 ^w , 02:15-02:25Q, 02:26:02-02:40, 02:42-02:68, 02:70-02:72, 03:02:01-03:02:09, 03:02:11, 03:04:01-01-03:04:25, 03:04:27-03:10, 03:14-03:17, 03:19, 03:23-03:29, 03:32-03:38:02, 03:40:01-03:42, 03:44-03:48, 03:51, 03:54, 03:57, 03:60, 03:63-03:64:01, 03:65, 03:70-03:74, 03:77-03:78, 03:80, 03:82, 03:84, 03:87, 03:89-03:95, 03:98, 03:100-03:101, 03:104-03:111, 03:113-03:115, 03:117-03:118, 03:121N, 03:123, 03:125, 03:128-03:131, 03:134-03:136, 03:138-03:140, 03:143, 03:145-03:149, 03:153-03:155, 03:157, 03:159, 03:162-03:164, 03:169Q, 03:172-03:174, 03:178-03:181, 03:183-03:184, 03:186, 03:190-03:191, 03:193-03:194, 03:197-03:201N, 03:208N-03:213, 03:215-03:216, 03:218, 04:03:01-04:03:02, 04:06, 04:16, 04:80, 04:107, 04:147, 04:160, 05:58:01, 06:03:01, 07:96:01-07:96:02, 12:03:23, 15:02:01-15:05:08, 15:06:01-15:09, 15:10:02-15:11, 15:13, 15:15-15:19, 15:21-15:22, 15:24-15:35, 15:37-15:60, 15:62, 15:64-15:82, 16:34
76⁷	170 bp, 275 bp	1070 bp	*03:02:01-03:04:06, 03:04:08-03:11:02, 03:13:01-03:15, 03:17-03:40:03, 03:42-03:57, 03:59-03:79, 03:81-03:85, 03:87-03:93, 03:95-03:98, 03:100-03:109, 03:111-03:112, 03:114-03:150, 03:152-03:164, 03:166-03:218, 03:220, 07:242
77	280 bp	800 bp	*03:03:01-03:03:20, 03:03:22, 03:11:01-03:11:02, 03:13:01-03:13:02, 03:20N-03:22Q, 03:30-03:31, 03:43:01-03:43:02, 03:49-03:50, 03:52-03:53, 03:55-03:56, 03:58-03:59, 03:61-03:62, 03:66, 03:67 ^w , 03:68-03:69, 03:75-03:76, 03:79, 03:81, 03:83, 03:85-03:86, 03:88, 03:96-03:97, 03:102-03:103, 03:112, 03:116:01-03:116:02, 03:119-03:120, 03:122, 03:124, 03:126-03:127, 03:132-03:133, 03:141-03:142, 03:150-03:152, 03:158, 03:160-03:161, 03:165, 03:167-03:168, 03:171, 03:175-03:177, 03:185, 03:187-03:189N, 03:192, 03:196, 03:202-03:207, 03:214, 03:217, 03:220, 15:12
78¹³	140 bp, 330 bp	800 bp	*02:02:01-02:02:03, 02:02:05-02:02:12, 02:02:14-02:02:25, 02:03-02:20, 02:22-02:25Q, 02:27:01-02:38N, 02:40, 02:42-02:44, 02:46-02:68, 02:70-02:72, 04:01:01-01-04:01:27, 04:01:29-04:01:54, 04:03:01-04:15:03, 04:17-04:20, 04:23-04:41, 04:43-04:102, 04:104-04:139, 04:141-04:160, 05:26, 05:78, 07:02:09, 07:125, 15:11, 15:36, 16:34

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79	165bp, 390 bp, 445 bp	1070 bp	*04:129, 05:01:01:01-05:01:27, 05:03-05:97, 06:05, 06:67, 08:10, 12:21, 12:33, 16:40, 16:53, 17:05
80	130 bp, 355 bp	800 bp	*02:06, 02:47, 06:02:01:01-06:02:01:03, 06:02:03-06:16N, 06:18-06:31, 06:33-06:76:01, 06:77-06:93, 06:96-06:98, 06:100-06:117, 12:03:09, 12:03:26, 12:15, 15:02:01-15:03, 15:07-15:08, 15:10:01-15:13, 15:15-15:18, 15:21, 15:26, 15:28, 15:31-15:35, 15:37-15:39, 15:41-15:45, 15:47-15:53, 15:56-15:58, 15:60, 15:62-15:64, 15:67-15:68, 15:71-15:75, 15:78-15:82
81⁸	245 bp, 425 bp	800 bp	*07:01:01:01-07:33N, 07:35-07:294, 07:296-07:337
82^{5,9,13}	110 bp, 165 bp, 390 bp	800 bp	*01:43, 07:101, 07:148, 07:161, 08:01:01-08:63, 08:65- 08:94
83	340 bp	1070 bp	*01:14, 01:59, 02:02:01-02:02:03, 02:02:05-02:11, 02:13- 02:26:03, 02:28-02:40, 02:42-02:68, 02:70-02:72, 03:07, 03:15, 03:45, 03:130, 03:140, 03:163, 04:01:01:01- 04:01:54, 04:03:01-04:10, 04:12-04:20, 04:23-04:28, 04:30- 04:35, 04:37-04:54, 04:56-04:160, 05:01:01:01-05:01:27, 05:03-05:97, 06:02:01:01-06:02:01:03, 06:02:03-06:02:11, 06:02:13-06:10, 06:12-06:51, 06:53:01-06:117, 07:07, 07:09, 07:49, 07:76, 07:210, 07:238, 07:247, 07:315, 07:328, 08:10, 12:04:01-12:05, 12:09, 12:21, 12:33, 12:41, 12:54, 12:60, 14:04, 14:12, 14:49, 15:02:01-15:06:03, 15:08-15:13, 15:15-15:19, 15:22-15:24, 15:26-15:42, 15:44- 15:70, 15:72-15:82, 16:02:01-16:02:11, 16:09, 16:12, 16:19, 16:25, 16:46-16:48, 16:57, 16:60, 17:01:01:01-17:21, 18:01-18:07N
84^{5,11}	100 bp, 160 bp, 220 bp	800 bp	*01:02:18, 01:04, 01:21, 06:76:02, 12:02:01-12:03:01:02, 12:03:03-12:03:07, 12:03:09-12:03:15, 12:03:17-12:03:19, 12:03:21-12:03:28, 12:04:02-12:08, 12:10:01-12:13, 12:14:02-12:18:01, 12:19-12:25, 12:27-12:32, 12:34-12:58, 12:60-12:111, 14:02:08, 16:15:02
85^{5,11}	120 bp, 250 bp	800 bp	*01:21, 02:12, 02:49, 02:55, 04:01:01:01-04:01:54, 04:03:01-04:09N, 04:12-04:20, 04:23-04:35, 04:37-04:54, 04:56-04:152, 04:154-04:160, 05:42, 05:46, 06:76:02, 07:02:09, 07:125, 08:05, 08:21, 08:25, 12:02:01-12:03:03, 12:03:05-12:03:08, 12:03:10-12:03:12, 12:03:13 ^w , 12:03:14- 12:03:23, 12:03:24 ^w , 12:03:25-12:03:28, 12:04:02, 12:06- 12:08, 12:10:01-12:20, 12:22-12:32, 12:34-12:48, 12:50- 12:97, 12:99-12:111, 15:03, 15:16, 15:25, 15:75, 16:01:01- 16:02:11, 16:06-16:28, 16:30N-16:32, 16:34, 16:36- 16:39:02, 16:41, 16:43-16:47, 16:49-16:52, 16:54, 16:56- 16:60, 17:01:04, B*67:02
86¹⁴	160 bp, 215 bp	800 bp	*01:04, 01:09, 02:05:01-02:05:02, 02:17, 04:42, 06:02:01:01-06:02:01:03, 06:02:03-06:02:15, 06:02:17- 06:03:02, 06:07-06:13, 06:15-06:34, 06:36-06:39, 06:41-06:71, 06:73-06:78, 06:80, 06:82-06:100, 06:102- 06:117, 07:31:01-07:31:02, 07:125, 07:177, 12:03:01:01- 12:07, 12:11-12:13, 12:15, 12:19, 12:23, 12:25-12:26, 12:28-12:29, 12:31-12:35, 12:37-12:39N, 12:42Q-12:43, 12:45-12:48, 12:50-12:55, 12:57-12:63, 12:65-12:66, 12:70- 12:71, 12:75-12:79, 12:81-12:82, 12:87-12:95, 12:97- 12:102, 12:107-12:111, 14:15-14:16, 16:04:01, 16:29,

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87¹³	130 bp, 255 bp	1070 bp	16:33, 16:35, 16:42, 16:48, 16:55 *02:02:01 ^w , 02:02:02:01-02:02:03, 02:02:05-02:13, 02:15-02:26:03, 02:28-02:40, 02:42-02:64, 02:66-02:68, 02:70-02:72, 03:07, 03:10, 03:15, 03:29, 03:45, 03:58, 03:86, 03:94, 03:99, 03:163, 03:209, 04:03:01-04:03:02, 04:06, 04:16, 04:37, 04:80, 04:103, 04:107, 04:147, 04:160, 05:01:01:01-05:01:27, 05:03-05:19, 05:21-05:42, 05:44:01-05:77, 05:79-05:97, 06:03:01-06:03:02, 06:76:01-06:76:02, 08:10, 12:04:01-12:05, 12:09, 12:21, 12:33, 12:41, 12:60, 12:72, 14:45, 15:02:01-15:06:03, 15:08-15:13, 15:15-15:19, 15:21-15:22, 15:24, 15:26-15:35, 15:37-15:42, 15:44-15:62, 15:64-15:82, 16:02:01-16:02:11, 16:09, 16:12, 16:18-16:19, 16:25, 16:37, 16:46-16:48, 16:60, 17:01:01:01-17:19, 17:21, B*15:277, B*35:222
88¹²	255 bp, 445 bp	1070 bp	*01:67, 04:11, 04:29, 04:36, 04:55, 04:114, 07:64, 12:55, 14:02:01-14:11, 14:13-14:48, 14:50-14:58, 16:40, 16:53, A*30:62
89^{5,10}	110 bp, 325 bp	800 bp	*02:06, 02:23, 02:36, 02:68, 03:81, 03:175, 03:199, 04:108, 04:112, 05:36, 06:89, 07:123, 07:173, 07:294, 12:08, 12:15, 12:81, 15:02:01-15:13, 15:15-15:19, 15:21-15:24, 15:26-15:82, 16:20
90¹²	180 bp, 210 bp, 240 bp	1070 bp	*02:13, 02:18, 02:33, 02:49, 04:01:01:01-04:01:22, 04:01:24-04:01:54, 04:03:01-04:10, 04:12-04:20, 04:23-04:32, 04:34-04:106, 04:108-04:115N, 04:117-04:129, 04:131-04:160, 05:17, 05:25, 05:42, 05:55, 05:68, 05:79, 06:05, 06:31, 06:76:02, 07:02:09, 07:31:01-07:31:02, 07:177, 08:01:01-08:01:12, 08:03:01-08:03:02, 08:06, 08:08:01-08:11, 08:14, 08:16:01-08:16:02, 08:20-08:22, 08:24, 08:26N, 08:28, 08:36N, 08:38, 08:40-08:42, 08:44, 08:46, 08:50, 08:56-08:61, 08:65, 08:72:01-08:72:02, 08:78-08:89N, 08:91, 12:14:01-12:14:02, 12:28, 12:58, 14:10, 14:15, 15:12, 15:25, 15:62, 15:65, 15:75, 16:01:01-16:02:11, 16:04:01, 16:06-16:39:02, 16:41-16:42, 16:44-16:52, 16:54-16:60
91^{11,15}	225 bp, 250 bp	800 bp	*01:60, 04:58, 04:160, 05:23, 05:62, 08:07, 08:47, 12:14:01-12:14:02, 14:17, 15:25, 15:65, 17:01:01:01-17:22
92	215 bp, 425 bp	800 bp	*01:02:01-01:03, 01:06-01:08, 01:10-01:20, 01:23-01:34, 01:37N-01:48, 01:51-01:54, 01:56N-01:78, 01:80-01:84, 03:58, 03:86, 03:94, 03:99, 04:37, 05:16, 05:85, 06:05-06:06, 06:17, 06:31, 07:07, 07:09, 07:49, 07:76, 07:210, 07:238, 07:247, 07:315, 07:328, 08:12, 12:09, 12:24, 14:02:01-14:05, 14:07N, 14:10-14:14, 14:17-14:27, 14:29-14:52, 14:55-14:58, 16:04:01, 16:29, 16:33, 16:42, 16:53, 16:55, 18:01-18:07N, B*14:03
93	325 bp, 380 bp	1070 bp	*01:03, 01:24, 01:34, 01:49-01:50, 01:55, 01:78, 02:22, 02:62, 03:03:01-03:04:42, 03:06-03:11:02, 03:14, 03:18-03:24, 03:26, 03:28-03:32, 03:34, 03:37:01-03:59, 03:61-03:70, 03:72-03:83, 03:85, 03:87-03:88, 03:90-03:93, 03:96, 03:98, 03:100-03:107, 03:109, 03:111-03:120, 03:122-03:131, 03:133-03:134, 03:136-03:138, 03:140-03:145, 03:147-03:153, 03:155-03:166, 03:168, 03:170-03:176, 03:179-03:189N, 03:191-03:193, 03:195-03:196, 03:202-03:215, 03:217-03:218, 03:220, 04:01:01:01-04:01:15, 04:01:17-04:01:54, 04:03:01-04:20, 04:24-04:53, 04:55-04:71, 04:73-04:107, 04:109-04:160, 05:01:01:01-

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Lot-specific information

			05:01:27, 05:03, 05:05-05:21, 05:23-05:97, 06:09, 06:14, 06:35, 06:72, 07:10, 07:28, 07:41, 07:43, 07:184, 07:196, 08:01:01-08:08:01, 08:10, 08:12-08:47, 08:49-08:63, 08:65-08:82, 08:84-08:94, 12:31, 12:44, 14:54, 15:02:01-15:13, 15:15-15:19, 15:21, 15:23-15:36, 15:38-15:54, 15:56-15:57, 15:59-15:64, 15:66-15:71, 15:73-15:82, 16:45, 17:01:01:01-17:22, 18:01-18:07N
94¹³	135 bp	1070 bp	*03:02:01-03:02:09, 03:02:11-03:03:20, 03:03:22-03:04:24, 03:04:27-03:11:02, 03:13:01-03:17, 03:19-03:38:02, 03:40:01-03:64:01, 03:65-03:66, 03:67 ^w , 03:68-03:98, 03:100-03:136, 03:138-03:143, 03:146-03:155, 03:157-03:165, 03:167-03:169Q, 03:171, 03:173-03:181, 03:183-03:194, 03:196-03:218, 03:220, 04:32, 04:77, 06:03:01, 07:96:01-07:96:02, 14:25, 15:02:10, 15:02:17, 15:43, 18:03
95¹³	155 bp, 235 bp	1070 bp	*04:14, 04:42, 04:68, 06:02:01:01-06:02:01:03, 06:02:03-06:02:34, 06:04-06:75, 06:78-06:117, 07:01:01:01-07:02:07, 07:02:09-07:02:28, 07:02:30-07:02:40, 07:02:41 ^w , 07:02:42-07:25, 07:27:01-07:32N, 07:35-07:38:02, 07:41-07:63, 07:65-07:91, 07:93-07:95, 07:97-07:138, 07:140-07:151, 07:153-07:155, 07:157-07:176, 07:178-07:209, 07:211-07:222, 07:223 ^w , 07:224-07:237, 07:239-07:245, 07:247-07:266, 07:268-07:294, 07:297-07:313, 07:315-07:316, 07:318-07:321, 07:323-07:334, 07:336-07:337, 12:16, 15:75, 16:01:01-16:02:11, 16:06-16:28, 16:30N-16:32, 16:34, 16:36-16:39:02, 16:41, 16:43-16:47, 16:49-16:52, 16:54, 16:56-16:60, 17:20, 18:01-18:07N, A*24:96, A*24:106, A*24:174, B*08:16, B*46:25
96¹⁶	Negative control	-	

¹Alleles are assigned by the presence of specific PCR product(s). However, the sizes of the specific PCR products may be helpful in the interpretation of HLA-C low resolution SSP typings.

When the primers in a primer mix can give rise to HLA-specific PCR products of more than one length this is indicated if the size difference is more than 20 base pairs. Size differences of 20 base pairs or less are not given. For high resolution SSP kits, the alleles listed are specified according to amplicon length.

Nonspecific amplifications, i.e. a ladder or a smear of bands, may sometimes be seen. GC-rich primers have a higher tendency of giving rise to nonspecific amplifications than other primers.

PCR fragments longer than the control bands may sometimes be observed. Such bands should be disregarded and do not influence the interpretation of the SSP typings.

PCR fragments migrating faster than the control bands, but slower than a 400 bp fragment may be seen in some gel read-outs. Such bands can be disregarded and do not influence the interpretation of the SSP typings.

Some primers may give rise to primer oligomer artifacts. Sometimes this phenomenon is an inherit feature of the primer pair(s) of a primer mix. More often it is due to other factors such as too low amount of DNA in the PCR reactions, taking too long time in setting up the PCR reactions, working at elevated room temperature or using thermal cyclers that are not pre-heated.

²The internal positive control primer pairs amplify segments of the human growth hormone gene. The internal positive control bands are 1070 or 800 base pairs respectively, well distribution as outlined in the table. Well number 73 contains the shorter, 800 bp, internal positive control band. The well distribution of the internal controls can help in orientation of the kit on gel photo, as well as allow for kit identification. In the presence of a specific amplification the intensity of the control band often decreases.

³For several HLA Class I alleles 1st and/or 4th exon(s) and beyond, as well as intron nucleotide sequences, are not available. In these instances it is not known whether some of the primers of the SSP sets are completely matched with the target sequences or not. Assumption is made that unknown sequences in these regions are conserved within allelic groups.

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101.702.24u/06u – without *Taq* pol., IFU-02

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Lot-specific information

⁴Only HLA-C alleles will be amplified by the 23 wells of the HLA-C low resolution primer set, except that a few HLA-A and HLA-B alleles will be amplified by primer mixes 73, 85, 87, 88, 92 and 95.

⁵HLA-specific PCR products shorter than 125 base pairs have a lower intensity and are less sharp than longer PCR products.

⁶Primer mix 74 will for most C*02 alleles give rise to two specific PCR fragments.

⁷Primer mix 76 will for most C*03 alleles give rise to two specific PCR fragments.

⁸Primer mix 81 will for most C*07 alleles give rise to two specific PCR fragments.

⁹Primer mix 82 will for most C*08 alleles give rise to multiple specific PCR fragments.

¹⁰Primer mix 89 will for most C*15 alleles give rise to two specific PCR fragments.

¹¹Primer mixes 84, 85 and 91 may have tendencies of unspecific amplifications.

¹²Primer mixes 88 and 90 have a tendency to giving rise to primer oligomer formation.

¹³Primer mixes 75, 78, 82, 87, 94 and 95 may yield less HLA-specific PCR fragments than the other HLA-C low resolution primer mixes.

¹⁴Primer mix 86 might faintly amplify most C*01 and the C*14 alleles.

¹⁵Primer mix 91 might generate a false band of about 500 base pairs. This band should be disregarded when interpreting HLA-C low resolution typings.

¹⁶Primer mix 96 contains a negative control, which will amplify more than 95% of HLA amplicons as well as the amplicons generated by control primer pairs. PCR product sizes range from 75 to 200 base pairs. The PCR product generated by the control primer pair is 430 base pairs.

'w', might be weakly amplified.

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Lot-specific information

HLA-A LOW PRIMER SPECIFICATION

Well No.	1	2	3	4	5	6	7	8	9	10	11	12
Length of spec. PCR product	120	175	205	190	160	135	175	165	75	80	80	125
	145	215	235		335	200	205	200		240	175	190
		225	255		505						500	
			365									
			415									
Length of int. pos. control ¹	800	800	1070	800	1070	800	1070	800	800	800	1070	800
5'-primer(s) ²	98	48	363	98	144	176	98	98	261	98	301	103
	5'-CTT ^{3'}	5'-gCT ^{3'}	5'-ATA ^{3'}	5'-CTA ^{3'}	5'-gCC ^{3'}	5'-gCA ^{3'}	5'-CTC ^{3'}	5'-CTA ^{3'}	5'-AAC ^{3'}	5'-CTA ^{3'}	5'-Cgg ^{3'}	5'-CCT ^{3'}
	103	78		413	317	368	368	102	266	261	302	415
	5'-CCT ^{3'}	5'-TCT ^{3'}		5'-CCg ^{3'}	5'-gCT ^{3'}	5'-gTT ^{3'}	5'-gTT ^{3'}	5'-ACA ^{3'}	5'-ACg ^{3'}	5'-AAC ^{3'}	5'-ggA ^{3'}	5'-ggT ^{3'}
	123	106						413			385	423
	5'-AgT ^{3'}	5'-CCA ^{3'}						5'-CCg ^{3'}			5'-ggC ^{3'}	5'-gCT ^{3'}
	363											
	5'-ATA ^{3'}											
3'-primer(s) ³	203	240	527	256	265	270	259	259	302	299	341	257
	5'-TCT ^{3'}	5'-ggA ^{3'}	5'-CCA ^{3'}	5'-CTg ^{3'}	5'-CCC ^{3'}	5'-ACA ^{3'}	5'-gTT ^{3'}	5'-gTT ^{3'}	5'-ggC ^{3'}	5'-TCg ^{3'}	5'-CgT ^{3'}	5'-gCA ^{3'}
	545	292	527	559	368	521	502	259			521	506
	5'-AgA ^{3'}	5'-gTg ^{3'}	5'-CCT ^{3'}	5'-CCg ^{3'}	5'-CAA ^{3'}	5'-ggg ^{3'}	5'-CTT ^{3'}	5'-gTT ^{3'}			5'-ggg ^{3'}	5'-TgT ^{3'}
			527			534	539	538				559
			5'-CCT ^{3'}			5'-CgT ^{3'}	5'-TCT ^{3'}	5'-CCA ^{3'}				5'-CTC ^{3'}
			555									559
			5'-CCA ^{3'}									5'-CgT ^{3'}
			555									559
			5'-gCA ^{3'}									5'-CgC ^{3'}
Well No.	1	2	3	4	5	6	7	8	9	10	11	12

Well No.	13	14	15	16	17	18	19	20	21	22	23	24
Length of spec. PCR product	175	80	90	240	140	200	340	210	65	85	75	360
	225	115	135	380	180	390	375	240	240	240	160	
		200	205						375		240	
		240									495	
		470										
Length of int. pos. control ¹	1070	1070	1070	1070	1070	1070	800	800	800	800	800	1070
5'-primer(s) ²	98	98	203	41	180	41	302	78	28	78	176	341
	5'-CTT ^{3'}	5'-CAC ^{3'}	5'-gAA ^{3'}	5'-CTT ^{3'}	5'-TTT ^{3'}	5'-CTT ^{3'}	5'-ggA ^{3'}	5'-TCT ^{3'}	5'-TCg ^{3'}	5'-TCT ^{3'}	5'-gCA ^{3'}	5'-ggC ^{3'}
	423	219	362	355	203	98	341	106	261	527	261	
	5'-gCT ^{3'}	5'-gCA ^{3'}	5'-ggT ^{3'}	5'-CCg ^{3'}	5'-gAA ^{3'}	5'-CAC ^{3'}	5'-ggA ^{3'}	5'-CCA ^{3'}	5'-AAC ^{3'}	5'-TgC ^{3'}	5'-AAC ^{3'}	
		238	363		418			2 nd	502		341	
		5'-AgA ^{3'}	5'-ATA ^{3'}		5'-AgC ^{3'}			5'-CCT ^{3'}	5'-CCC ^{3'}		5'-ggA ^{3'}	
		355	363								355	
		5'-CCg ^{3'}	5'-ATA ^{3'}								5'-CCC ^{3'}	
			363									
			5'-ATA ^{3'}									
			369									
			5'-TAC ^{3'}									
3'-primer(s) ³	282	180	299	238	290	256	397	265	97	265	292	418
	5'-gAC ^{3'}	5'-TCA ^{3'}	5'-CCA ^{3'}	5'-CCT ^{3'}	5'-CAA ^{3'}	5'-CCC ^{3'}	5'-gAg ^{3'}	5'-CCC ^{3'}	5'-ggT ^{3'}	5'-CCC ^{3'}	5'-gTg ^{3'}	5'-gTC ^{3'}
	282	257	411	238	317	256		282	355	282	292	
	5'-gAC ^{3'}	5'-gCA ^{3'}	5'-TCA ^{3'}	5'-CCT ^{3'}	5'-ggA ^{3'}	5'-CTC ^{3'}		5'-gAC ^{3'}	5'-gAC ^{3'}	5'-gAC ^{3'}	5'-gTT ^{3'}	
	559	418	526	243	555	259		282	524	282	299	
	5'-CCC ^{3'}	5'-gTC ^{3'}	5'-CCA ^{3'}	5'-TCA ^{3'}	5'-CCA ^{3'}	5'-gTT ^{3'}		5'-gAC ^{3'}	5'-CAT ^{3'}	5'-gAC ^{3'}	5'-TCT ^{3'}	
	559	555		265				502		570	555	
	5'-CCg ^{3'}	5'-CCA ^{3'}		5'-CCC ^{3'}				5'-CTT ^{3'}		5'-CAC ^{3'}	5'-CCA ^{3'}	
				555				506				
				5'-CCA ^{3'}				5'-TgT ^{3'}				
Well No.	13	14	15	16	17	18	19	20	21	22	23	24

101.702.24/06– including *Taq* pol., IFU-01
 101.702.24u/06u – without *Taq* pol., IFU-02

Visit www.olerup-ssp.com for
 “Instructions for Use” (IFU)

Lot No.: **63V**

Lot-specific information

¹The internal positive control primer pairs amplify segments of the human growth hormone gene. The internal positive control bands are 1070 or 800 base pairs respectively, well distribution as outlined in the table. Well number 1 contains the shorter, 800 bp, internal positive control band. The well distribution of the internal controls can help in orientation of the kit on gel photo, as well as allow for kit identification. In the presence of a specific amplification the intensity of the control band often decreases.

²The nucleotide position matching the specificity-determining 3'-end of the primer is given. Nucleotide numbering as on the www.ebi.ac.uk/imgt/hla web site. The sequence of the 3 terminal nucleotides of the primer is given.

³The nucleotide position matching the specificity-determining 3'-end of the primer is given in the anti-sense direction. Nucleotide numbering as on the www.ebi.ac.uk/imgt/hla web site. The sequence of the 3 terminal nucleotides of the primer is given.

HLA-B LOW PRIMER SPECIFICATION

Well No.	25	26	27	28	29	30	31	32	33	34	35	36
Length of spec. PCR product	110	215	140 235	130 265	185 235	180	290	165 220 285 330	165 190 390	180	100 195	280
Length of int. pos. control ¹	800	1070	1070	800	800	800	1070	1070	1070	800	1070	1070
5'-primer(s) ²	527 5'-TgA 3'	97 5'-TCg 3'	209 5'-ggC 3'	103 5'-CCg 3'	103 5'-CCT 3'	103 5'-CCg 3'	45 5'-ggA 3'	45 5'-ggA 3'	45 5'-ggA 3'	420 5'-TTA 3'	206 5'-AgA 3'	419 5'-gTC 3'
	540 5'-gAC 3'		363 5'-AgC 3'	103 5'-CCg 3'	103 5'-CCT 3'	418 5'-Agg 3'		357 5'-Tgg 3'	435 5'-AAA 3'		420 5'-TTA 3'	
			363 5'-AgC 3'	361 5'-AgT 3'	363 5'-AAT 3'			412 5'-ATA 3'				
3'-primer(s) ³	605 5'-gCT 3'	272 5'-Tgg 3'	309 5'-gTg 3'	193 5'-CgT 3'	246 5'-TAT 3'	246 5'-TAT 3'	165 5'-Tgg 3'	206 5'-CCT 3'	266 5'-TCC 3'	559 5'-CTC 3'	256 5'-CCC 3'	3 rd I 5'-TAT 3'
		272 5'-TgA 3'	312 5'-gCC 3'	193 5'-CgT 3'	246 5'-TAT 3'	572 5'-gCC 3'		538 5'-gTC 3'	559 5'-CAg 3'		272 5'-Tgg 3'	
			559 5'-CAg 3'	583 5'-gTg 3'	559 5'-CTC 3'			603 5'-gTg 3'	583 5'-gTg 3'		572 5'-gCg 3'	
Well No.	25	26	27	28	29	30	31	32	33	34	35	36

101.702.24/06– including *Taq* pol., IFU-01
 101.702.24u/06u – without *Taq* pol., IFU-02

Visit www.olerup-ssp.com for
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Lot No.: **63V**

Lot-specific information

Well No.	37	38	39	40	41	42	43	44	45	46	47	48
Length of spec.	195	105	115	80	150	140	60	210	170	110	395	160
PCR product		395	150				245					425
		435					400					
Length of int. pos. control ¹	1070	1070	1070	1070	800	1070	1070	800	800	1070	1070	1070
5'-primer(s) ²	142	45	161	167	355	206	45	142	409	246	44	44
	5'-TCT ^{3'}	5'-ggA ^{3'}	5'-Cgg ^{3'}	5'-gCT ^{3'}	5'-TCA ^{3'}	5'-gAC ^{3'}	5'-ggA ^{3'}	5'-TCT ^{3'}	5'-ggC ^{3'}	5'-gAA ^{3'}	5'-ggC ^{3'}	5'-ggC ^{3'}
	419	540					368	368	420			357
	5'-gTC ^{3'}	5'-gAC ^{3'}					5'-gTT ^{3'}	5'-gTC ^{3'}	5'-TTA ^{3'}			5'-Tgg ^{3'}
							557					
							5'-ggA ^{3'}					
3'-primer(s) ³	301	272	234	204	463	302	259	311	544	317	272	302
	5'-gTC ^{3'}	5'-TgC ^{3'}	5'-TCT ^{3'}	5'-TCT ^{3'}	5'-gCT ^{3'}	5'-ggC ^{3'}	5'-gTT ^{3'}	5'-ggg ^{3'}	5'-ggT ^{3'}	5'-ggA ^{3'}	5'-TgC ^{3'}	5'-ggC ^{3'}
	301	309	272			312	259	311				302
	5'-gTC ^{3'}	5'-ATC ^{3'}	5'-TgA ^{3'}			5'-AgT ^{3'}	5'-gTT ^{3'}	5'-ggg ^{3'}				5'-ggT ^{3'}
	570	605	272				266	538				477
	5'-CCg ^{3'}	5'-gCT ^{3'}	5'-Tgg ^{3'}				5'-TCC ^{3'}	5'-gTC ^{3'}				5'-gCg ^{3'}
	572						272					
	5'-gCg ^{3'}						5'-Tgg ^{3'}					
							292					
							5'-gTA ^{3'}					
							572					
							5'-gCg ^{3'}					
Well No.	37	38	39	40	41	42	43	44	45	46	47	48

Well No.	49	50	51	52	53	54	55	56	57	58	59	60
Length of spec.	180	290	105	325	80	215	130	90	90	145	120	430
PCR product		465			115		270	410	175	430	210	
					160							
					195							
					225							
					260							
Length of int. pos. control ¹	1070	1070	1070	800	1070	800	800	1070	1070	1070	800	1070
5'-primer(s) ²	355	72	540	1 st I	355	141	209	41	209	48	357	49
	5'-TCA ^{3'}	5'-gCT ^{3'}	5'-gAC ^{3'}	5'-CAG ^{3'}	5'-TCA ^{3'}	5'-ATT ^{3'}	5'-ggC ^{3'}	5'-CTg ^{3'}	5'-ggC ^{3'}	5'-gCC ^{3'}	5'-Tgg ^{3'}	5'-CAG ^{3'}
	363	209			418	357	209	368	363	206		
	5'-Agg ^{3'}	5'-ggC ^{3'}			5'-Agg ^{3'}	5'-Tgg ^{3'}	5'-ggg ^{3'}	5'-gTT ^{3'}	5'-AgC ^{3'}	5'-gAA ^{3'}		
					499		355					
					5'-TCT ^{3'}		5'-TCA ^{3'}					
3'-primer(s) ³	499	193	603	282	538	309	299	282	259	309	435	309
	5'-ggA ^{3'}	5'-CgT ^{3'}	5'-gTg ^{3'}	5'-gCC ^{3'}	5'-gTC ^{3'}	5'-ATC ^{3'}	5'-TCA ^{3'}	5'-gCC ^{3'}	5'-gTT ^{3'}	5'-ATC ^{3'}	5'-TCT ^{3'}	5'-ATC ^{3'}
		193	605		572	538	583	418	499		527	
		5'-TgT ^{3'}	5'-gCT ^{3'}		5'-gCg ^{3'}	5'-gTC ^{3'}	5'-gTg ^{3'}	5'-gTC ^{3'}	5'-ggA ^{3'}		5'-CCT ^{3'}	
		387			573							
		5'-TCg ^{3'}			5'-AgT ^{3'}							
Well No.	49	50	51	52	53	54	55	56	57	58	59	60

101.702.24/06– including *Taq* pol., IFU-01
 101.702.24u/06u – without *Taq* pol., IFU-02

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 “Instructions for Use” (IFU)

Lot No.: **63V**

Lot-specific information

Well No.	61	62	63	64	65	66	67	68	69	70	71	72
Length of spec.	145	300	160	180	180	90	90	95	115	360	350	285
PCR product			330	210		240			150			
Length of int. pos. control ¹	1070	1070	1070	1070	1070	800	1070	1070	1070	1070	1070	800
5'-primer(s) ²	206 5'-gAA 3'	1 st I 5'-CAg 3'	15 5'-gCA 3'	141 5'-ATT 3'	420 5'-TTA 3'	209 5'-ggC 3'	208 5'-CgT 3'	206 5'-gAC 3'	165 5'-ACC 3'	1 st I 5'-CAg 3'	1 st I 5'-CAg 3'	355 5'-TCA 3'
			418 5'-Agg 3'	420 5'-TTA 3'		209 5'-ggA 3'	209 5'-ggA 3'		463 5'-TgA 3'			363 5'-AgC 3'
						362 5'-ggT 3'	369 5'-TAC 3'					
3'-primer(s) ³	311 5'-ggT 3'	259 5'-CTC 3'	175 5'-CCg 3'	311 5'-ggT 3'	559 5'-CAg 3'	256 5'-CCC 3'	256 5'-CTC 3'	259 5'-gTT 3'	272 5'-TgC 3'	317 5'-ggA 3'	311 5'-ggT 3'	603 5'-gTg 3'
		259 5'-CTC 3'	538 5'-gTC 3'	559 5'-CgT 3'		259 5'-CTT 3'	256 5'-CCC 3'		538 5'-CCA 3'			605 5'-gCT 3'
		262 5'-TgC 3'				263 5'-gTT 3'	420 5'-gCT 3'					
						559 5'-CgT 3'						
Well No.	61	62	63	64	65	66	67	68	69	70	71	72

¹The internal positive control primer pairs amplify segments of the human growth hormone gene. The internal positive control bands are 1070 or 800 base pairs respectively, well distribution as outlined in the table. Well number 25 contains the shorter, 800 bp, internal positive control band. The well distribution of the internal controls can help in orientation of the kit on gel photo, as well as allow for kit identification. In the presence of a specific amplification the intensity of the control band often decreases.

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³The nucleotide position matching the specificity-determining 3'-end of the primer is given in the anti-sense direction. Nucleotide numbering as on the www.ebi.ac.uk/imgt/hla web site. The sequence of the 3 terminal nucleotides of the primer is given.

101.702.24/06– including *Taq* pol., IFU-01
 101.702.24u/06u – without *Taq* pol., IFU-02

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 “Instructions for Use” (IFU)

Lot No.: 63V

Lot-specific information

HLA-C LOW PRIMER SPECIFICATION

Well No.	73	74	75	76	77	78	79	80	81	82	83	84
Length of spec.	90	130	280	170	280	140	165	130	245	110	340	100
PCR product	150	200		275		330	390	355	425	165		160
		270					445			390		220
		300										
Length of int. pos. control ¹	800	800	800	1070	800	800	1070	800	800	800	1070	800
5'-primer(s) ²	89	47	105	355	105	47	1 st	28	47	1 st	1 st	361
	5'-gAA 3'	5'-Agg 3'	5'-gCT 3'	5'-TCA 3'	5'-gCT 3'	5'-Agg 3'	5'-CgA 3'	5'-TCA 3'	5'-Agg 3'	5'-CgA 3'	5'-CgA 3'	5'-AgT 3'
	98	89		459		112	176	2 nd	648	176		419
	5'-CTT 3'	5'-gAA 3'		5'-gAT 3'		5'-CCT 3'	5'-gCA 3'	5'-CCA 3'	5'-CAC 3'	5'-gCA 3'		5'-gTC 3'
		2 nd				118	527			527		
		5'-CCA 3'				5'-CCA 3'	5'-TgA 3'			5'-TAC 3'		
		703										
		5'-CTA 3'										
3'-primer(s) ³	142	176	343	589	343	201	302	213	302	302	302	474
	5'-TgA 3'	5'-ACT 3'	5'-C 3'	5'-CTT 3'	5'-T 3'	5'-CTT 3'	5'-ggT 3'	5'-Cgg 3'	5'-ggC 3'	5'-ggC 3'	5'-ggT 3'	5'-gCA 3'
	201	559	343			218	3 rd	420	853	595	304	477
	5'-CTT 3'	5'-CTC 3'	5'-g 3'			5'-gCT 3'	5'-gCA 3'	5'-gCT 3'	5'-CAT 3'	5'-CCC 3'	5'-CAA 3'	5'-gCA 3'
	201	861										538
	5'-CTC 3'	5'-TCg 3'										5'-gCA 3'
Well No.	73	74	75	76	77	78	79	80	81	82	83	84

Well No.	85	86	87	88	89	90	91	92	93	94	95
Length of spec.	120	160	130	255	110	180	225	215	325	135	155
PCR product	250	215	255	445	325	210	250	425	380		235
						240					
Length of int. pos. control ¹	800	800	1070	1070	800	1070	800	800	1070	1070	1070
5'-primer(s) ²	201	97	98	98	201	201	2 nd	47	355	105	97
	5'-CCA 3'	5'-TCg 3'	5'-CTA 3'	5'-CTC 3'	5'-CCA 3'	5'-CCA 3'	5'-CCA 3'	5'-Agg 3'	5'-TCA 3'	5'-gCT 3'	5'-TCg 3'
	218	361	368	98	409	2 nd		361	412	459	97
	5'-ggA 3'	5'-AgT 3'	5'-gTg 3'	5'-CTT 3'	5'-ggC 3'	5'-CCA 3'		5'-AgT 3'	5'-ATA 3'	5'-gAT 3'	5'-TTg 3'
	2 nd			527		361					418
	5'-CCA 3'			5'-TgA 3'		5'-AgT 3'					5'-Agg 3'
											419
											5'-gTC 3'
											419
											5'-gTT 3'
3'-primer(s) ³	289	218	312	311	270	341	512	302	3 rd	201	213
	5'-AgC 3'	5'-gCT 3'	5'-AgT 3'	5'-ggT 3'	5'-TAG 3'	5'-CgT 3'	5'-CCA 3'	5'-ggT 3'	5'-CTC 3'	5'-CTC 3'	5'-Cgg 3'
	289	527	361	317	3 rd	343	538	527		559	289
	5'-AgC 3'	5'-CCg 3'	5'-CCA 3'	5'-CgT 3'	5'-CTC 3'	5'-T 3'	5'-gTC 3'	5'-CCg 3'		5'-CTC 3'	5'-AgC 3'
	291	538	459	3 rd		343		538			289
	5'-TCg 3'	5'-CCA 3'	5'-AgA 3'	5'-gCA 3'		5'-g 3'		5'-CCg 3'			5'-AgC 3'
	539	538				527					539
	5'-TCT 3'	5'-gCA 3'				5'-CCg 3'					5'-TCT 3'
						527					
						5'-CCg 3'					
						527					
						5'-CCg 3'					
						530					
						5'-CCA 3'					
Well No.	85	86	87	88	89	90	91	92	93	94	95

101.702.24/06– including *Taq* pol., IFU-01
101.702.24u/06u – without *Taq* pol., IFU-02

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Lot No.: 63V

Lot-specific information

¹The internal positive control primer pairs amplify segments of the human growth hormone gene. The internal positive control bands are 1070 or 800 base pairs respectively, well distribution as outlined in the table. Well number 73 contains the shorter, 800 bp, internal positive control band. The well distribution of the internal controls can help in orientation of the kit on gel photo, as well as allow for kit identification. In the presence of a specific amplification the intensity of the control band often decreases.

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³The nucleotide position matching the specificity-determining 3'-end of the primer is given in the anti-sense direction. Nucleotide numbering as on the www.ebi.ac.uk/imgt/hla web site. The sequence of the 3 terminal nucleotides of the primer is given.

101.702.24/06– including *Taq* pol., IFU-01
 101.702.24u/06u – without *Taq* pol., IFU-02

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Lot No.: **63V**

Lot-specific information

CELL LINE VALIDATION SHEET																				
HLA-A low resolution primer set²																				
				Well																
				1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	
				Lot No.:	201329701	201329702	201329703	201329704	201329705	201329706	201329707	201329708	201329709	201329710	201329711	201329712	201329713	201329714	201329715	201329716
	IHWC cell line¹	A*	A*																	
1	9001 SA	*24:02		-	-	-	-	+	-	+	-	-	-	-	-	-	-	-	-	
2	9280 LK707	*02:01		-	+	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
3	9011 E4181324	*01:01		+	-	-	+	-	-	-	-	-	-	-	-	-	-	-	-	
4	9275 GU373	*30:01		-	-	-	-	-	-	-	-	-	-	-	-	-	-	+	-	
5	9009 KAS011	*01:01		+	-	-	+	-	-	-	-	-	-	-	-	-	-	-	-	
6	9353 SM	*02:01	*26:03	-	+	-	-	-	-	-	-	+	-	-	+	-	-	-	-	
7	9020 QBL	*26:01		-	-	-	-	-	-	-	-	+	-	+	-	+	-	-	-	
8	9025 DEU	*31:01		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	+	
9	9026 YAR	*26:01		-	-	-	-	-	-	-	-	+	-	+	-	+	-	-	-	
10	9107 LKT3	*24:02		-	-	-	-	+	-	+	-	-	-	-	-	-	-	-	-	
11	9051 PITOUT	*29:02		-	-	-	-	-	-	-	-	-	-	-	-	-	-	+	-	
12	9052 DBB	*02:01		-	+	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
13	9004 JESTHOM	*02:01		-	+	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
14	9071 OLGA	*31:01		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	+	
15	9075 DKB	*24:02		-	-	-	-	+	-	+	-	-	-	-	-	-	-	-	-	
16	9037 SWEIG007	*29:02		-	-	-	-	-	-	-	-	-	-	-	-	-	-	+	-	
17	9282 CTM3953540	*03:01	*80:01	-	-	+	-	-	+	-	-	-	-	-	-	+	-	-	-	
18	9257 32367	*33:03	*74:01	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
19	9038 BM16	*02:01		-	+	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
20	9059 SLE005	*02:01		-	+	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
21	9064 AMALA	*02:17		-	+	-	-	-	-	W	-	-	-	-	-	-	-	-	-	
22	9056 KOSE	*02:01		-	+	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
23	9124 IHL	*02:01	*34:01	-	+	-	-	-	-	-	+	-	-	+	+	-	-	-	-	
24	9035 JBUSH	*32:01		-	-	-	-	-	-	-	-	+	-	-	-	-	-	-	-	
25	9049 IBW9	*33:01		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
26	9285 WT49	*02:05		-	+	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
27	9191 CH1007	*24:10	*29:01	-	-	-	-	+	-	+	-	-	-	-	-	-	+	-	-	
28	9320 BEL5GB	*02:01	*29:02	-	+	-	-	-	-	-	-	-	-	-	-	-	+	-	-	
29	9050 MOU	*29:02		-	-	-	-	-	-	-	-	-	-	-	-	-	+	-	-	
30	9021 RSH	*30:01	*68:02	-	-	-	-	-	-	-	+	-	-	-	-	-	-	+	-	
31	9019 DUCAF	*30:02		-	-	-	-	-	-	-	-	-	-	-	-	-	-	+	-	
32	9297 HAG	*02:01		-	+	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
33	9098 MT14B	*31:01		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	+	
34	9104 DHIF	*31:01		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	+	
35	9302 SСТО	*32:01		-	-	-	-	-	-	-	-	+	-	-	-	-	-	-	-	
36	9024 KT17	*02:06	*11:01	-	+	-	+	-	-	-	-	-	-	+	-	-	-	-	-	
37	9065 HHKB	*03:01		-	-	+	-	-	-	-	-	-	-	-	-	+	-	-	-	
38	9099 LZL	*02:17		-	+	-	-	-	-	W	-	-	-	-	-	-	-	-	-	
39	9315 CML	*01:01	*03:01	+	-	+	+	-	-	-	-	-	-	-	-	+	-	-	-	
40	9134 WHONP199	*02:07	*30:01	-	+	-	-	-	-	-	-	-	-	-	-	-	-	+	-	
41	9055 H0301	*03:01		-	-	+	-	-	-	-	-	-	-	-	-	-	+	-	-	
42	9066 TAB089	*02:07		-	+	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
43	9076 T7526	*02:06	*02:07	-	+	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
44	9057 TEM	*66:01		-	-	-	-	-	-	-	+	-	-	+	-	+	-	-	-	
45	9239 SHJO	*23:01	*24:02	-	-	-	-	+	+	+	-	-	-	-	-	-	-	-	-	
46	9013 SCHU	*03:01		-	-	+	-	-	-	-	-	-	-	-	-	+	-	-	-	
47	9045 TUBO	*02:16	*03:01	-	+	+	-	-	-	-	-	-	-	-	-	+	-	-	-	
48	9303 TER-ND	*02:01	*11:01	-	+	-	+	-	-	-	-	-	-	+	-	-	-	-	-	



101.702.24/06– including *Taq* pol., IFU-01
 101.702.24u/06u – without *Taq* pol., IFU-02

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Lot No.: **63V**

Lot-specific information

CELL LINE VALIDATION SHEET											
HLA-A low resolution primer set²											
				Well							
				17	18	19	20	21	22	23	24
				201329717	201329718	201329719	201329720	201329721	201329722	201329723	201329724
				Lot No.:							
	IHWC cell line¹			A*	A*						
1	9001	SA		*24:02		-	-	-	-	-	-
2	9280	LK707		*02:01		-	-	-	-	-	-
3	9011	E4181324		*01:01		-	-	-	-	-	-
4	9275	GU373		*30:01		-	-	-	-	-	-
5	9009	KAS011		*01:01		-	-	-	-	-	-
6	9353	SM		*02:01	*26:03	-	-	-	-	-	+
7	9020	QBL		*26:01		-	-	-	-	-	-
8	9025	DEU		*31:01		-	-	-	-	-	-
9	9026	YAR		*26:01		-	-	-	-	-	-
10	9107	LKT3		*24:02		-	-	-	-	-	-
11	9051	PITOUT		*29:02		-	-	-	-	-	-
12	9052	DBB		*02:01		-	-	-	-	-	-
13	9004	JESTHOM		*02:01		-	-	-	-	-	-
14	9071	OLGA		*31:01		-	-	-	-	-	-
15	9075	DKB		*24:02		-	-	-	-	-	-
16	9037	SWEIG007		*29:02		-	-	-	-	-	-
17	9282	CTM3953540		*03:01	*80:01	-	-	-	-	-	+
18	9257	32367		*33:03	*74:01	-	+	+	-	-	-
19	9038	BM16		*02:01		-	-	-	-	-	-
20	9059	SLE005		*02:01		-	-	-	-	-	-
21	9064	AMALA		*02:17		-	-	-	-	-	-
22	9056	KOSE		*02:01		-	-	-	-	-	-
23	9124	IHL		*02:01	*34:01	-	-	-	-	-	-
24	9035	JBUSH		*32:01		+	-	-	-	-	-
25	9049	IBW9		*33:01		-	+	-	-	-	-
26	9285	WT49		*02:05		-	-	-	-	-	-
27	9191	CH1007		*24:10	*29:01	-	-	-	-	-	-
28	9320	BEL5GB		*02:01	*29:02	-	-	-	-	-	-
29	9050	MOU		*29:02		-	-	-	-	-	-
30	9021	RSH		*30:01	*68:02	-	-	-	+	-	-
31	9019	DUCAF		*30:02		-	-	-	-	-	-
32	9297	HAG		*02:01		-	-	-	-	-	-
33	9098	MT14B		*31:01		-	-	-	-	-	-
34	9104	DHIF		*31:01		-	-	-	-	-	-
35	9302	SSTO		*32:01		+	-	-	-	-	-
36	9024	KT17		*02:06	*11:01	-	-	-	-	-	-
37	9065	HHKB		*03:01		-	-	-	-	-	-
38	9099	LZL		*02:17		-	-	-	-	-	-
39	9315	CML		*01:01	*03:01	-	-	-	-	-	-
40	9134	WHONP199		*02:07	*30:01	-	-	-	-	-	-
41	9055	H0301		*03:01		-	-	-	-	-	-
42	9066	TAB089		*02:07		-	-	-	-	-	-
43	9076	T7526		*02:06	*02:07	-	-	-	-	-	-
44	9057	TEM		*66:01		-	-	-	-	-	-
45	9239	SHJO		*23:01	*24:02	-	-	-	-	-	-
46	9013	SCHU		*03:01		-	-	-	-	-	-
47	9045	TUBO		*02:16	*03:01	-	-	-	-	-	-
48	9303	TER-ND		*02:01	*11:01	-	-	-	-	-	-

101.702.24/06– including *Taq* pol., IFU-01
101.702.24u/06u – without *Taq* pol., IFU-02

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“Instructions for Use” (IFU)

Lot No.: 63V

Lot-specific information

¹The provided cell line HLA specificities are retrieved from the <http://www.ihwg.org/hla> web site. The specificity of an individual cell line may thus be subject to change.

²The specificity of each primer solution in the kit has been tested against 48 well characterized cell line DNAs and where applicable, additional cell line DNAs.

Additional 5'- and 3'-primers in primer solutions 4, 5, 7, 8, 12, 14 to 17 and 20 to 23 were tested by separately adding one 3'-primer, respectively one 5'-primer. Additional 5'-primers in primer solution 1 and 19 were tested by separately adding one 3'-primer. Additional 3'-primers in primer solutions 3 and 18 were tested by separately adding one 5'-primer.

In primer solutions 2, 11, 12 and 15 one or two 5'-primers were not possible to test, and in primer solutions 3, 6, 8, 12, 13, 16 and 18 one 3'-primer was not possible to test.

101.702.24/06– including *Taq* pol., IFU-01
 101.702.24u/06u – without *Taq* pol., IFU-02

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 “Instructions for Use” (IFU)

Lot No.: **63V**

Lot-specific information

CELL LINE VALIDATION SHEET																				
HLA-B low resolution SSP kit²																				
				Well																
				25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	
				Prod. No.:	201329801	201329802	201329803	201329804	201329805	201329806	201329807	201329808	201329809	201329810	201329811	201329812	201329813	201329814	201329815	201329816
IHCW cell line ¹		B*																		
1	9001	SA	*07:02		+	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
2	9280	LK707	*52:01	*73:01	-	-	-	-	-	-	-	-	+	-	-	-	-	-	-	-
3	9011	E4181324	*52:01		-	-	-	-	-	-	-	-	+	-	-	-	-	-	-	-
4	9275	GU373	*15:10	*53:01	-	-	-	-	-	-	-	+	-	-	+	-	+	-	-	-
5	9009	KAS011	*37:01		-	-	-	-	-	-	-	-	-	-	-	+	-	-	-	-
6	9353	SM	*39:01	*51:01	-	-	-	-	+	-	-	-	+	-	-	-	-	-	-	-
7	9020	QBL	*18:01		-	-	-	-	-	-	-	-	-	-	-	+	-	-	+	-
8	9025	DEU	*35:01		-	-	-	-	-	-	-	-	-	-	-	+	-	-	-	-
9	9026	YAR	*38:01		-	-	-	-	+	-	-	-	-	-	-	-	-	-	-	-
10	9107	LKT3	*54:01		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
11	9051	PITOUT	*44:03		-	-	-	+	-	-	-	-	-	-	-	-	-	-	-	-
12	9052	DBB	*57:01		-	-	-	-	-	-	-	-	-	-	-	+	-	-	-	-
13	9004	JESTHOM	*27:05		-	-	-	-	+	-	-	-	-	-	-	-	-	-	-	+
14	9071	OLGA	*15:01	*15:20	-	-	-	-	-	-	+	-	-	-	-	+	-	-	-	-
15	9075	DKB	*40:01		-	-	-	+	-	-	-	-	-	-	-	-	-	-	-	-
16	9037	SWEIG007	*40:02		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
17	9282	CTM3953540	*08:01	*55:01	-	+	-	-	-	-	-	+	-	-	-	-	-	-	-	-
18	9257	32367	*14:01	*56:01	-	-	-	+	+	-	-	-	-	-	-	-	-	-	-	-
19	9038	BM16	*18:01		-	-	-	-	-	-	-	-	-	-	-	+	-	-	+	-
20	9059	SLE005	*40:01		-	-	-	+	-	-	-	-	-	-	-	-	-	-	-	-
21	9064	AMALA	*15:01		-	-	-	-	-	-	+	-	-	-	-	+	-	-	-	-
22	9056	KOSE	*35:03		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
23	9124	IHL	*40:02	*56:02	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
24	9035	JBUSH	*38:01		-	-	-	-	+	-	-	-	-	-	-	-	-	-	-	-
25	9049	IBW9	*14:02		-	-	-	+	-	+	-	-	-	-	-	-	-	-	-	-
26	9285	WT49	*58:01		-	-	-	-	-	-	-	-	-	-	-	+	-	-	-	-
27	9191	CH1007	*07:05	*51:01	+	-	-	-	-	-	-	-	+	-	-	-	-	-	-	-
28	9320	BEL5GB	*44:02	*44:03	-	-	-	+	-	-	-	-	-	-	-	-	-	-	-	-
29	9050	MOU	*44:03		-	-	-	+	-	-	-	-	-	-	-	-	-	-	-	-
30	9021	RSH	*42:01		-	-	-	-	-	-	-	+	-	-	-	-	-	-	-	-
31	9019	DUCAF	*18:01		-	-	-	-	-	-	-	-	-	-	-	+	-	-	+	-
32	9297	HAG	*41:02		-	-	-	+	-	-	-	+	-	-	-	-	-	-	-	-
33	9098	MT14B	*40:01		-	-	-	+	-	-	-	-	-	-	-	-	-	-	-	-
34	9104	DHIF	*38:01		-	-	-	-	+	-	-	-	-	-	-	-	-	-	-	-
35	9302	SSTO	*44:02		-	-	-	+	-	-	-	-	-	-	-	-	-	-	-	-
36	9024	KT17	*15:01	*35:01	-	-	-	-	-	-	+	-	-	-	-	+	-	-	-	-
37	9065	HHKB	*07:02		+	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
38	9099	LZL	*15:01		-	-	-	-	-	-	+	-	-	-	-	+	-	-	-	-
39	9315	CML	*08:01	*27:05	-	+	-	-	+	-	-	+	-	-	-	-	-	-	-	+
40	9134	WHONP199	*13:02	*46:01	-	-	+	+	-	-	+	-	-	+	-	+	-	-	-	-
41	9055	H0301	*14:02		-	-	-	+	-	+	-	-	-	-	-	-	-	-	-	-
42	9066	TAB089	*46:01		-	-	-	-	-	-	+	-	-	-	-	+	-	-	-	-
43	9076	T7526	*46:01		-	-	-	-	-	-	+	-	-	-	-	+	-	-	-	-
44	9057	TEM	*38:01		-	-	-	-	+	-	-	-	-	-	-	-	-	-	-	-
45	9239	SHJO	*42:01	*50:01	-	-	-	+	-	-	-	+	-	-	-	-	-	-	-	-
46	9013	SCHU	*07:02		+	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
47	9045	TUBO	*51:01		-	-	-	-	-	-	-	-	+	-	-	-	-	-	-	-
48	9303	TER-ND	*35:01	*44:03	-	-	-	+	-	-	-	-	-	-	-	+	-	-	-	-

101.702.24/06– including *Taq* pol., IFU-01
 101.702.24u/06u – without *Taq* pol., IFU-02

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Lot No.: **63V**

Lot-specific information

CELL LINE VALIDATION SHEET																				
HLA-B low resolution SSP kit ²																				
				Well																
				41	42	43	44	45	46	47	48	49	50	51	52	53	54	55	56	
				Prod. No.:	201329817	201329818	201329819	201329820	201329821	201329822	201329823	201329824	201329825	201329826	201329827	201329828	201329829	201329830	201329831	201329832
IHC cell line ¹		B*																		
1	9001	SA	*07:02	-	-	-	-	-	-	-	-	+	-	-	-	+	-	-	-	-
2	9280	LK707	*52:01	*73:01	-	-	-	-	-	-	-	+	-	-	-	+	-	-	-	-
3	9011	E4181324	*52:01		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
4	9275	GU373	*15:10	*53:01	+	-	+	-	-	-	-	-	-	-	-	-	-	-	-	-
5	9009	KAS011	*37:01		+	-	-	+	-	-	-	-	-	-	-	+	-	-	-	-
6	9353	SM	*39:01	*51:01	-	-	-	-	+	-	+	+	-	-	-	-	-	+	-	-
7	9020	QBL	*18:01		-	+	-	-	-	-	-	-	-	-	-	-	-	-	-	-
8	9025	DEU	*35:01		+	+	-	-	-	-	-	-	-	-	-	-	-	-	-	-
9	9026	YAR	*38:01		-	-	-	-	+	+	+	-	-	-	-	-	-	-	-	-
10	9107	LKT3	*54:01		-	-	-	-	-	-	-	-	-	-	-	+	-	-	-	+
11	9051	PITOUT	*44:03		+	-	-	-	-	-	-	-	-	-	-	-	+	-	-	-
12	9052	DBB	*57:01		+	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
13	9004	JESTHOM	*27:05		-	-	-	-	-	-	-	-	-	-	-	+	-	-	-	+
14	9071	OLGA	*15:01	*15:20	+	-	+	-	-	-	-	-	-	-	-	-	-	-	-	-
15	9075	DKB	*40:01		-	-	-	-	-	-	-	+	+	-	-	-	-	-	-	-
16	9037	SWEIG007	*40:02		-	-	-	-	-	-	-	-	-	+	-	-	-	-	-	-
17	9282	CTM3953540	*08:01	*55:01	-	-	-	-	-	-	-	+	-	-	+	+	-	-	-	+
18	9257	32367	*14:01	*56:01	-	-	-	-	-	-	+	+	-	-	-	+	-	-	-	+
19	9038	BM16	*18:01		-	+	-	-	-	-	-	-	-	-	-	-	-	-	-	-
20	9059	SLE005	*40:01		-	-	-	-	-	-	-	+	+	-	-	-	-	-	-	-
21	9064	AMALA	*15:01		-	-	+	-	-	-	-	-	-	-	-	-	-	-	-	-
22	9056	KOSE	*35:03		+	+	-	-	-	-	-	-	-	-	-	-	-	-	-	-
23	9124	IHL	*40:02	*56:02	-	-	-	-	-	-	-	-	-	+	-	+	-	-	-	+
24	9035	JBUSH	*38:01		-	-	-	-	+	+	+	-	-	-	-	-	-	-	-	-
25	9049	IBW9	*14:02		-	-	-	-	-	-	+	+	-	-	-	-	-	-	-	-
26	9285	WT49	*58:01		+	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
27	9191	CH1007	*07:05	*51:01	-	-	-	-	-	-	-	+	-	-	-	+	-	+	-	-
28	9320	BEL5GB	*44:02	*44:03	+	-	-	-	-	-	-	-	-	-	-	-	+	-	-	-
29	9050	MOU	*44:03		+	-	-	-	-	-	-	-	-	-	-	-	+	-	-	-
30	9021	RSH	*42:01		-	-	-	-	-	-	-	+	-	-	+	+	-	-	-	-
31	9019	DUCAF	*18:01		-	+	-	-	-	-	-	-	-	-	-	-	-	-	-	-
32	9297	HAG	*41:02		-	-	-	-	-	-	-	+	-	-	+	-	-	-	-	-
33	9098	MT14B	*40:01		-	-	-	-	-	-	-	+	+	-	-	-	-	-	-	-
34	9104	DHIF	*38:01		-	-	-	-	+	+	+	-	-	-	-	-	-	-	-	-
35	9302	SSTO	*44:02		+	-	-	-	-	-	-	-	-	-	-	-	+	-	-	-
36	9024	KT17	*15:01	*35:01	+	+	+	-	-	-	-	-	-	-	-	-	-	-	-	-
37	9065	HHKB	*07:02		-	-	-	-	-	-	-	+	-	-	-	+	-	-	-	-
38	9099	LZL	*15:01		-	-	+	-	-	-	-	-	-	-	-	-	-	-	-	-
39	9315	CML	*08:01	*27:05	-	-	-	-	-	-	-	+	-	-	+	+	-	-	-	+
40	9134	WHONP199	*13:02	*46:01	-	-	-	-	-	-	-	-	-	-	-	+	-	-	+	-
41	9055	H0301	*14:02		-	-	-	-	-	-	-	+	+	-	-	-	-	-	-	-
42	9066	TAB089	*46:01		-	-	-	-	-	-	-	-	-	-	-	+	-	-	+	-
43	9076	T7526	*46:01		-	-	-	-	-	-	-	-	-	-	-	+	-	-	+	-
44	9057	TEM	*38:01		-	-	-	-	+	+	+	-	-	-	-	-	-	-	-	-
45	9239	SHJO	*42:01	*50:01	-	-	-	-	-	-	-	+	-	-	+	+	-	-	-	-
46	9013	SCHU	*07:02		-	-	-	-	-	-	-	+	-	-	-	+	-	-	-	-
47	9045	TUBO	*51:01		-	-	-	-	-	-	-	-	-	-	-	-	-	+	-	-
48	9303	TER-ND	*35:01	*44:03	+	+	-	-	-	-	-	-	-	-	-	-	+	-	-	-

101.702.24/06- including *Taq* pol., IFU-01
101.702.24u/06u – without *Taq* pol., IFU-02

Visit www.olerup-ssp.com for
“Instructions for Use” (IFU)

Lot No.: **63V**

Lot-specific information

CELL LINE VALIDATION SHEET																				
HLA-B low resolution SSP kit²																				
				Well																
				57	58	59	60	61	62	63	64	65	66	67	68	69	70	71	72	
				Prod. No.:	201329833	201329834	201329835	201329836	201329837	201329838	201329839	201329840	201329841	201329842	201329843	201329844	201329845	201329846	201329847	201329848
IHC cell line ¹			B*																	
1	9001	SA	*07:02	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	+	+
2	9280	LK707	*52:01	*73:01	-	-	+	+	-	+	-	-	-	-	-	-	+	+	+	-
3	9011	E4181324	*52:01		-	-	+	+	-	+	-	-	-	-	-	-	-	+	-	-
4	9275	GU373	*15:10	*53:01	-	-	-	+	-	-	-	-	-	-	-	+	-	+	+	-
5	9009	KAS011	*37:01		-	-	-	-	-	+	-	-	-	-	-	-	-	+	-	-
6	9353	SM	*39:01	*51:01	-	-	+	+	-	-	-	-	-	-	-	+	-	+	+	-
7	9020	QBL	*18:01		-	-	-	-	-	-	-	-	-	-	-	+	-	-	+	-
8	9025	DEU	*35:01		-	-	-	-	-	-	-	-	-	-	-	+	-	-	+	-
9	9026	YAR	*38:01		-	-	-	-	-	-	-	-	-	-	-	-	-	+	-	-
10	9107	LKT3	*54:01		-	-	-	-	-	-	+	+	-	-	-	-	-	-	+	-
11	9051	PITOUT	*44:03		-	-	-	-	-	+	-	-	-	-	-	-	-	+	-	-
12	9052	DBB	*57:01		-	-	-	+	-	-	-	-	-	+	-	-	-	+	-	-
13	9004	JESTHOM	*27:05		-	-	-	-	-	+	-	-	-	-	-	-	-	+	-	-
14	9071	OLGA	*15:01	*15:20	-	-	-	-	-	+	-	-	-	-	-	-	+	-	+	-
15	9075	DKB	*40:01		-	-	-	-	+	+	-	-	-	-	-	-	-	-	+	-
16	9037	SWEIG007	*40:02		-	-	-	-	+	+	-	-	-	-	-	-	-	-	+	-
17	9282	CTM3953540	*08:01	*55:01	-	-	+	-	-	-	-	+	-	-	-	-	-	-	+	+
18	9257	32367	*14:01	*56:01	-	-	-	-	-	-	-	-	+	-	-	-	-	-	+	-
19	9038	BM16	*18:01		-	-	-	-	-	-	-	-	-	-	-	+	-	-	+	-
20	9059	SLE005	*40:01		-	-	-	-	+	+	-	-	-	-	-	-	-	-	+	-
21	9064	AMALA	*15:01		-	-	-	-	-	+	-	-	-	-	-	-	+	-	+	-
22	9056	KOSE	*35:03		-	-	-	-	-	-	-	-	-	-	-	+	-	-	+	-
23	9124	IHL	*40:02	*56:02	-	-	-	-	+	+	-	-	+	-	+	-	-	-	+	-
24	9035	JBUSH	*38:01		-	-	-	-	-	-	-	-	-	-	-	-	-	+	-	-
25	9049	IBW9	*14:02		-	-	-	-	-	-	-	-	-	-	-	-	-	-	+	-
26	9285	WT49	*58:01		-	-	-	+	-	-	-	-	-	-	+	-	-	+	-	-
27	9191	CH1007	*07:05	*51:01	-	-	+	+	-	-	-	-	-	-	-	+	-	+	+	+
28	9320	BEL5GB	*44:02	*44:03	-	-	-	-	-	+	+	-	-	-	-	-	-	+	-	-
29	9050	MOU	*44:03		-	-	-	-	-	+	-	-	-	-	-	-	-	+	-	-
30	9021	RSH	*42:01		-	-	-	-	-	-	-	-	-	-	-	-	-	-	+	+
31	9019	DUCAF	*18:01		-	-	-	-	-	-	-	-	-	-	-	+	-	-	+	-
32	9297	HAG	*41:02		-	-	-	-	+	+	-	-	-	-	-	-	-	-	+	+
33	9098	MT14B	*40:01		-	-	-	-	+	+	-	-	-	-	-	-	-	-	+	-
34	9104	DHIF	*38:01		-	-	-	-	-	-	-	-	-	-	-	-	-	+	-	-
35	9302	SSTO	*44:02		-	-	-	-	-	+	+	-	-	-	-	-	-	+	-	-
36	9024	KT17	*15:01	*35:01	-	-	-	-	-	+	-	-	-	-	-	+	+	-	+	-
37	9065	HHKB	*07:02		-	-	-	-	-	-	-	-	-	-	-	-	-	-	+	+
38	9099	LZL	*15:01		-	-	-	-	-	+	-	-	-	-	-	+	-	-	+	-
39	9315	CML	*08:01	*27:05	-	-	-	-	-	+	-	-	-	-	-	-	-	+	+	+
40	9134	WHONP199	*13:02	*46:01	-	-	-	-	-	+	-	-	-	-	-	-	+	+	+	-
41	9055	H0301	*14:02		-	-	-	-	-	-	-	-	-	-	-	-	-	-	+	-
42	9066	TAB089	*46:01		-	-	-	-	-	-	-	-	-	-	-	-	+	-	+	-
43	9076	T7526	*46:01		-	-	-	-	-	-	-	-	-	-	-	-	+	-	+	-
44	9057	TEM	*38:01		-	-	-	-	-	-	-	-	-	-	-	-	-	-	+	-
45	9239	SHJO	*42:01	*50:01	-	-	+	-	+	+	-	-	+	-	-	-	-	-	+	+
46	9013	SCHU	*07:02		-	-	-	-	-	-	-	-	-	-	-	-	-	-	+	+
47	9045	TUBO	*51:01		-	-	+	+	-	-	-	-	-	-	-	+	-	+	-	-
48	9303	TER-ND	*35:01	*44:03	-	-	-	-	-	+	-	-	-	-	-	+	-	+	+	-

101.702.24/06– including *Taq* pol., IFU-01
101.702.24u/06u – without *Taq* pol., IFU-02

Visit www.olerup-ssp.com for
“Instructions for Use” (IFU)

Lot No.: 63V**Lot-specific information**

¹The provided cell line HLA specificities are retrieved from the <http://www.ihwg.org/hla> web site. The specificity of an individual cell line may thus be subject to change.

²The specificity of each primer solution in the kit has been tested against 48 well characterized cell line DNAs and where applicable, additional cell line DNAs.

Additional 5'-primers and 3'-primers in primer solutions 27, 30, 38, 43, 53, 55 and 64 were tested by separately adding one additional 3'-primer, respectively one additional 5'-primer. Additional 3'-primers in primer solutions 26, 32, 35, 37, 39 and 42 were tested by separately adding one additional 5'-primer. Additional 5'-primers in primer solutions 25, 45, 49 and 72 were tested by separately adding one additional 3'-primer.

In primer mixes 55, 66 and 67 one 5'-primer was not possible to test, and in primer mixes 27, 53, 62 and 66 one or two 3'-primer was not possible to test.

101.702.24/06– including *Taq* pol., IFU-01
 101.702.24u/06u – without *Taq* pol., IFU-02

Visit www.olerup-ssp.com for
 “Instructions for Use” (IFU)

Lot No.: **63V**

Lot-specific information

CELL LINE VALIDATION SHEET																			
HLA-C low resolution SSP primer set²																			
				Well															
				73	74	75	76	77	78	79	80	81	82	83	84	85	86	87	88
				Prod. No.:															
				201322201	201322202	201322203	201322204	201322205	201322206	201322207	201322208	201322209	201322210	201322211	201322212	201330513	201330514	201330515	201330516
IHC cell line ¹		C*																	
1	9001 SA	*07:02		-	-	-	-	-	-	-	-	+	-	-	-	-	-	-	-
2	9280 LK707	*07:01	*15:05	-	-	+	-	-	-	-	-	+	-	+	-	-	-	+	-
3	9011 E4181324	*12:02		-	-	-	-	-	-	-	-	-	-	-	+	+	-	-	-
4	9275 GU373	*03:04	*04:01	-	-	+	+	-	+	-	-	-	-	+	-	+	-	-	-
5	9009 KAS011	*06:02		-	-	-	-	-	-	-	+	-	-	+	-	-	+	-	-
6	9353 SM	*03:04	*07:02	-	-	+	+	-	-	-	-	+	-	-	-	-	-	-	-
7	9020 QBL	*05:01		-	-	-	-	-	-	+	-	-	-	+	-	-	-	+	-
8	9007 DEM	*04:01		-	-	-	-	-	+	-	-	-	-	+	-	+	-	-	-
9	9026 YAR	*12:03		-	-	-	-	-	-	-	-	-	-	-	+	+	+	-	-
10	9107 LKT3	*01:02		+	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
11	9051 PITOUT	*16:01		-	-	-	-	-	-	-	-	-	-	-	-	+	-	-	-
12	9052 DBB	*06:02		-	-	-	-	-	-	-	+	-	-	+	-	-	+	-	-
13	9004 JESTHOM	*01:02		+	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
14	9071 OLGA	*01:02	*03:04	+	-	+	+	-	-	-	-	-	-	-	-	-	-	-	-
15	9075 DKB	*03:04		-	-	+	+	-	-	-	-	-	-	-	-	-	-	-	-
16	9037 SWEIG007	*02:02		-	+	+	-	+	-	-	-	-	-	+	-	-	-	+	-
17	9282 CTM3953540	*03:03	*07:01	-	-	-	+	+	-	-	-	+	-	-	-	-	-	-	-
18	9257 32367	*01:02	*07:05	+	-	-	-	-	-	-	-	+	-	-	-	-	-	-	-
19	9038 BM16	*07:01		-	-	-	-	-	-	-	-	+	-	-	-	-	-	-	-
20	9059 SLE005	*03:04		-	-	+	+	-	-	-	-	-	-	-	-	-	-	-	-
21	9064 AMALA	*03:03		-	-	-	+	+	-	-	-	-	-	-	-	-	-	-	-
22	9056 KOSE	*12:03		-	-	-	-	-	-	-	-	-	-	-	+	+	+	-	-
23	9124 IHL	*01:02	*15:02	+	-	+	-	-	-	-	+	-	-	+	-	-	-	+	-
24	9035 JBUSH	*12:03		-	-	-	-	-	-	-	-	-	-	+	+	+	-	-	-
25	9049 IBW9	*08:02		-	-	-	-	-	-	-	-	+	-	-	-	-	-	-	-
26	9285 WT49	*07:01		-	-	-	-	-	-	-	-	+	-	-	-	-	-	-	-
27	9191 CH1007	*07:04	*15:05	-	-	+	-	-	-	-	-	+	-	+	-	-	-	+	-
28	9320 BEL5GB	*05:01	*16:01	-	-	-	-	-	-	+	-	-	-	+	-	+	-	+	-
29	9050 MOU	*16:01		-	-	-	-	-	-	-	-	-	-	-	-	+	-	-	-
30	9021 RSH	*17:01		-	+	-	-	-	-	-	-	-	-	+	-	-	-	+	-
31	9019 DUCAF	*05:01		-	-	-	-	-	-	+	-	-	-	+	-	-	-	+	-
32	9297 HAG	*17:01	*17:03	-	+	-	-	-	-	-	-	-	-	+	-	-	-	+	-
33	9098 MT14B	*03:04		-	-	+	+	-	-	-	-	-	-	-	-	-	-	-	-
34	9104 DHIF	*12:03		-	-	-	-	-	-	-	-	-	-	-	+	+	+	-	-
35	9302 SSTO	*05:01		-	-	-	-	-	-	+	-	-	-	+	-	-	-	+	-
36	9024 KT17	*03:03	*04:01	-	-	-	+	+	+	-	-	-	-	+	-	+	-	-	-
37	9065 HHKB	*07:02		-	-	-	-	-	-	-	-	+	-	-	-	-	-	-	-
38	9099 LZL	*03:03		-	-	-	+	+	-	-	-	-	-	-	-	-	-	-	-
39	9315 CML	*02:02	*07:01	-	+	+	-	-	+	-	-	+	-	+	-	-	-	+	-
40	9134 WHONP199	*01:02	*06:02	+	-	-	-	-	-	-	+	-	-	+	-	-	+	-	-
41	9055 H0301	*08:02		-	-	-	-	-	-	-	-	-	+	-	-	-	-	-	-
42	9066 TAB089	*01:02		+	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
43	9076 T7526	*01:02	*08:01	+	-	-	-	-	-	-	-	-	+	-	-	-	-	-	-
44	9057 TEM	*12:03		-	-	-	-	-	-	-	-	-	-	-	+	+	+	-	-
45	9239 SHJO	*06:02	*17:01	-	+	-	-	-	-	-	+	-	-	+	-	-	+	+	-
46	9013 SCHU	*07:02		-	-	-	-	-	-	-	-	+	-	-	-	-	-	-	-
47	9045 TUBO	*07:04	*15:02	-	-	+	-	-	-	-	+	+	-	+	-	-	-	+	-
48	9303 TER-ND	*04:01	*16:01	-	-	-	-	-	+	-	-	-	-	+	-	+	-	-	-

101.702.24/06– including *Taq* pol., IFU-01
 101.702.24u/06u – without *Taq* pol., IFU-02

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 “Instructions for Use” (IFU)

Lot No.: **63V**

Lot-specific information

CELL LINE VALIDATION SHEET												
HLA-C low resolution SSP primer set ²												
					Well							
					89	90	91	92	93	94	95	
					Prod. No.:	201322217	201322218	201433919	201322220	201322221	201322222	201322223
IHWC cell line ¹			C*									
1	9001	SA	*07:02		-	-	-	-	-	-	+	
2	9280	LK707	*07:01	*15:05	+	-	-	-	+	-	+	
3	9011	E4181324	*12:02		-	-	-	-	-	-	-	
4	9275	GU373	*03:04	*04:01	-	+	-	-	+	+	-	
5	9009	KAS011	*06:02		-	-	-	-	-	-	+	
6	9353	SM	*03:04	*07:02	-	-	-	-	+	+	+	
7	9020	QBL	*05:01		-	-	-	-	+	-	-	
8	9007	DEM	*04:01		-	+	-	-	+	-	-	
9	9026	YAR	*12:03		-	-	-	-	-	-	-	
10	9107	LKT3	*01:02		-	-	-	+	-	-	-	
11	9051	PITOUT	*16:01		-	+	-	-	-	-	+	
12	9052	DBB	*06:02		-	-	-	-	-	-	+	
13	9004	JESTHOM	*01:02		-	-	-	+	-	-	-	
14	9071	OLGA	*01:02	*03:04	-	-	-	+	+	+	-	
15	9075	DKB	*03:04		-	-	-	-	+	+	-	
16	9037	SWEIG007	*02:02		-	-	-	-	-	-	-	
17	9282	CTM3953540	*03:03	*07:01	-	-	-	-	+	+	+	
18	9257	32367	*01:02	*07:05	-	-	-	+	-	-	+	
19	9038	BM16	*07:01		-	-	-	-	-	-	+	
20	9059	SLE005	*03:04		-	-	-	-	+	+	-	
21	9064	AMALA	*03:03		-	-	-	-	+	+	-	
22	9056	KOSE	*12:03		-	-	-	-	-	-	-	
23	9124	IHL	*01:02	*15:02	+	-	-	+	+	-	-	
24	9035	JBUSH	*12:03		-	-	-	-	-	-	-	
25	9049	IBW9	*08:02		-	-	-	-	+	-	-	
26	9285	WT49	*07:01		-	-	-	-	-	-	+	
27	9191	CH1007	*07:04	*15:05	+	-	-	-	+	-	+	
28	9320	BEL5GB	*05:01	*16:01	-	+	-	-	+	-	+	
29	9050	MOU	*16:01		-	+	-	-	-	-	+	
30	9021	RSH	*17:01		-	-	+	-	+	-	-	
31	9019	DJCAF	*05:01		-	-	-	-	+	-	-	
32	9297	HAG	*17:01	*17:03	-	-	+	-	+	-	-	
33	9098	MT14B	*03:04		-	-	-	-	+	+	-	
34	9104	DHIF	*12:03		-	-	-	-	-	-	-	
35	9302	SSTO	*05:01		-	-	-	-	+	-	-	
36	9024	KT17	*03:03	*04:01	-	+	-	-	+	+	-	
37	9065	HHKB	*07:02		-	-	-	-	-	-	+	
38	9099	LZL	*03:03		-	-	-	-	+	+	-	
39	9315	CML	*02:02	*07:01	-	-	-	-	-	-	+	
40	9134	WHONP199	*01:02	*06:02	-	-	-	+	-	-	+	
41	9055	H0301	*08:02		-	-	-	-	+	-	-	
42	9066	TAB089	*01:02		-	-	-	+	-	-	-	
43	9076	T7526	*01:02	*08:01	-	+	-	+	+	-	-	
44	9057	TEM	*12:03		-	-	-	-	-	-	-	
45	9239	SHJO	*06:02	*17:01	-	-	+	-	+	-	+	
46	9013	SCHU	*07:02		-	-	-	-	-	-	+	
47	9045	TUBO	*07:04	*15:02	+	-	-	-	+	-	+	
48	9303	TER-ND	*04:01	*16:01	-	+	-	-	+	-	+	

101.702.24/06– including *Taq* pol., IFU-01
101.702.24u/06u – without *Taq* pol., IFU-02

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Lot No.: 63V

Lot-specific information

¹The provided cell line HLA specificities are retrieved from the <http://www.ihwg.org/hla> web site. The specificity of an individual cell line may thus be subject to change.

²The specificity of each primer solution in the kit has been tested against 48 well characterized cell line DNAs and where applicable, additional cell line DNAs.

Additional 5'-primers and 3'-primers in primer solutions 73, 74, 79, 86 to 88 and 94 were tested by separately adding one additional 3'-primer, respectively one additional 5'-primer. Additional 3'-primers in primer solution 90 and 91 were tested by separately adding one additional 5'-primer. Additional 5'-primers in primer solutions 78, 85 and 95 were tested by separately adding one additional 3'-primer.

In primer solution 95 one 5'-primer was not possible to test, and in primer solutions 75, 83 to 86, 88 and 90 one or two 3'-primers were not possible to test.

101.702.24/06– including *Taq* pol., IFU-01
101.702.24u/06u – without *Taq* pol., IFU-02

Visit www.olerup-ssp.com for
“Instructions for Use” (IFU)

Lot No.: **63V**

Lot-specific information

ADDRESSES:

Manufacturer:

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Tel: +46-8-717 88 27

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Lot No.: **63S**

Lot-specific information

Olerup SSP[®] HLA-A-B-DR SSP Combi Tray

Product number:	101.701-24/06 – including <i>Taq</i> pol. 101.701-24u/06u – without <i>Taq</i> pol.
Lot number:	63S
Expiry date:	2016-March-01
Number of tests:	24 tests – Product No. 101.701-24/24u 6 tests – Product No. 101.701-06/06u
Number of wells per test:	95 +1
Storage - pre-aliquoted primers:	dark at -20°C
- PCR Master Mix:	-20°C
- Adhesive PCR seals	RT
- Product Insert	RT

This Product Description is only valid for Lot No. 63S.

CHANGES COMPARED TO THE PREVIOUS OLERUP SSP[®] HLA-A-B-DR SSP COMBI TRAY LOT (55S)

The **HLA-A low resolution** specificity and interpretation tables have been updated for the HLA-A alleles described since the previous *Olerup SSP[®]* HLA-A-B-DR SSP Combi Tray lot was made (**Lot No 55S**).

The primers of the wells detailed below have been exchanged, added or modified compared to the previous lot.

Well	5'-primer	3'-primer	rationale
5	-	Exchanged	3'-primer and control primer pair exchanged for improved resolution of HLA-specific PCR product and positive control.
12	-	Added	3'-primer added for the A*34:11 allele.
14	-	Exchanged	3'-primer exchanged for resolution of the A*29:48 allele.
15	Added	-	5'-primer added for the A*30:72 allele.
18	Added	-	5'-primer added for the A*33:51 allele.
19	New	New	New primer pair for the A*74 alleles.
21	Added	Added	Primer pair added for the A*23:57 allele.

The **HLA-B low resolution** specificity and interpretation tables have been updated for the HLA-B alleles described since the previous *Olerup SSP[®]* HLA-A-B-DR SSP Combi Tray lot was made (**Lot No. 55S**).

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The primers of the wells detailed below have been exchanged, modified or added compared to the previous lot.

Well	5'-primer	3'-primer	rationale
27	-	Added	3'-primer added for the B*13:12:02 allele.
32	-	Added	3'-primer added for the B*42:19 allele.
42	-	Added	3'-primer added for the B*35:222 allele.
53	-	Added	3'-primer added for the B*44:03:17 allele.
66	-	Added	3'-primer added for the B*57:62 allele.

The **HLA-DR low resolution** specificity and interpretation tables have been updated for the HLA-DRB alleles described since the previous *Olerup* SSP® HLA-A-B-DR SSP Combi Tray lot was made (**Lot No. 55S**).

The primers of the wells detailed below have been exchanged, modified or added compared to the previous lot.

Well	5'-primer	3'-primer	rationale
73	-	Added	3'-primer added for the DRB1*01:55 allele.
92	Added	-	5'-primer added for the DRB1*08:53 allele.

Changes in revision R01 compared to R00:

1. Primer mix 43 does not amplify the B*44:10 allele. This has been corrected in the Specificity and Interpretation Tab

Change in revision R02 compared to R01:

1. Primer mix 19 does not amplify the A*74:07 allele, and primer mix 11 does not amplify the A*31:03 and A*66:15 alleles. This has been corrected in the Specificity and Interpretation tables.

The A*32:01:14, 32:03, 32:38 and the A*74:07 alleles give rise to identical amplification patterns with this lot of the HLA-A low resolution primer set. These alleles can be separated by the respective high resolution primer sets.

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Lot-specific information

Well 96 contains Negative Control primer pairs, that will amplify more than 95% of the Olerup SSP[®] HLA Class I, DRB, DQB1 and DPB1 amplicons as well as the amplicons generated by control primer pairs.

PCR product sizes range from 75 to 430 base pairs.
 The PCR product generated by the control primer pair is 430 base pairs.

Length of PCR product	105	200	105	80	75	80
5'-primer¹	164	340	440	45	45	43
	⁵ -CAC ³	⁵ -Agg ³	⁵ -TTA ³	⁵ -Tgg ³	⁵ -Tgg ³	⁵ -Tgg ³
3'-primer²	231	2nd I	507	59	58	57
	⁵ -TgC ³	⁵ -AAA ³	⁵ -TTg ³	⁵ -CTC ³	⁵ -ggC ³	⁵ -CTC ³
A*	+	+	+			
B*	+	+	+			
C*	+	+	+			
DRB1				+	+	
DRB3				+	+	
DRB5				+		
DQB1					+	
DPB1						+

¹The nucleotide position for HLA class I genes and the codon for HLA class II genes, in the 2nd or 3rd exon, matching the specificity-determining 3'-end of the primer is given. Nucleotide and codon numbering as on the www.ebi.ac.uk/imgt/hla web site. The sequence of the 3 terminal nucleotides of the primer is given.

²The nucleotide position for HLA class I genes and the codon for HLA class II genes, in the 2nd or 3rd exon or the 2nd intron, matching the specificity-determining 3'-end of the primer is given in the anti-sense direction. Nucleotide and codon numbering as on the www.ebi.ac.uk/imgt/hla web site. The sequence of the 3 terminal nucleotides of the primer is given.

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Lot-specific information

PRODUCT DESCRIPTION

HLA-A-B-DR SSP Combi Tray

CONTENT

The primer set contains 5'- and 3'-primers for grouping the HLA-A*01:01 to A*80:03 alleles into the corresponding serological groups A1 to A80.

The primer set contains 5'- and 3'-primers for grouping the B*07:02 to B*83:01 alleles into the corresponding serological groups B7 to B81 as well as primer pairs for recognizing the Bw4 and Bw6 sequence motifs.

The primer set contains 5'- and 3'-primers for grouping the DRB1*01:01 to DRB1*10:05 alleles into the corresponding serological groups DR1 to DR18 as well as primer pairs for recognizing the DRB3, DRB4 and DRB5 groups of alleles.

PLATE LAYOUT

Each test consists of 96 PCR reactions in a 96 well PCR plate.

1	2	3	4	5	6	7	8
9	10	11	12	13	14	15	16
17	18	19	20	21	22	23	24
25	26	27	28	29	30	31	32
33	34	35	36	37	38	39	40
41	42	43	44	45	46	47	48
49	50	51	52	53	54	55	56
57	58	59	60	61	62	63	64
65	66	67	68	69	70	71	72
73	74	75	76	77	78	79	80
81	82	83	84	85	86	87	88
89	90	91	92	93	94	95	ctrl

Wells 1 to 24 – HLA-A low resolution primers.

Wells 25 to 72 – HLA-B low resolution primers.

Wells 73 to 95 – HLA-DR low resolution primers.

Well 96 – Negative Control.

The 96 well PCR plate is marked with 'A-B-DR' in silver/gray ink.

Well No. 1 is marked with the Lot No. '63S'.

A faint row of numbers is seen between wells 1 and 2 or wells 7 and 8 of the PCR trays. These stem from the manufacture of the trays, and should be disregarded.

The PCR plates are covered with a PCR-compatible foil.

INTERPRETATION

Only HLA-A alleles will be amplified by the 24 wells of the HLA-A low resolution primer set, **wells 1 to 24**, except that primer mix 4 will amplify the C*03:174, C*08:69 and C*16:56 alleles, primer mix 5 will amplify the C*04:01:03 allele, primer mix 6 will amplify the B*18:27 allele and primer mix 9 will amplify the B*07:81, B*08:52, B*18:67, B*38:41, B*53:05 and B*53:16 alleles. Thus, the

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Lot-specific information

interpretation of HLA-A low resolution is only influenced by these seven HLA-B alleles and three HLA-C alleles and not by other HLA Class I genes.

Only HLA-B alleles will be amplified by the 48 wells of the HLA-B low resolution, primer set, **wells 25 to 72**, except that the C*02:23 and C*04:77 alleles will be amplified by primer mix 25, the C*03:05, C*03:25, C*03:27, C*03:143 and C*03:167 alleles will be amplified by primer mix 27, the C*01:30 and C*12:87 alleles will be amplified by primer mix 28, the A*23:31, A*24:106, C*07:231 and C*16:10 alleles will be amplified by primer mix 30, the C*01:73 allele will be amplified by primer mixes 31, 50 and 55, the C*07:02:30 and C*08:16:02 alleles will be amplified by primer mix 31, the C*07:46 allele will be amplified by primer mix 32, the A*24:174 allele will be amplified by primer mix 37, the C*03:102 allele will be amplified by primer mixes 41 and 65, the C*03:179 allele will be amplified by primer mix 43, the C*07:302 allele will be amplified by primer mix 44, the C*15:51 allele will be amplified by primer mix 45, the C*03:129 and C*17:16 alleles will be amplified by primer mix 49, the C*15:25 allele will be amplified by primer mix 53, the C*15:39 allele will be amplified by primer mix 55, the C*15:02:04 allele will be amplified by primer mix 64, the C*03:19 allele will be amplified by primer mix 65, the C*06:72 allele will be amplified by primer mix 66, the C*02:06 and 02:47 alleles will weakly be weakly amplified by primer mix 67 and the A*26:68, A*68:56, C*02:56, C*06:20 and C*12:50 alleles will be amplified by primer mix 69.

Thus, the interpretation of HLA-B low resolution typings is only influenced by these alleles and not by other alleles of other HLA class I genes.

Only HLA-DRB alleles will be amplified by the 23 wells the DR low resolution primer set, **wells 73 to 95**. Thus, the interpretation of DR low resolution typings is not influenced by other HLA class II genes.

UNIQUELY IDENTIFIED ALLELES

All the HLA-A alleles, i.e. **A*01:01 to A*80:03**, recognized by the HLA Nomenclature Committee in April 2013¹ will be amplified by the primers in the HLA-A low resolution primer set, **wells 1 to 24**. The HLA-A alleles will be grouped into their corresponding serological specificities².

All the HLA-B alleles, i.e. **B*07:02 to B*83:01**, recognized by the HLA Nomenclature Committee in April 2013¹ will be amplified by the primers in the HLA-B low resolution primer set, **wells 25 to 72**. The HLA-B alleles will be grouped into their corresponding serological specificities³.

All the HLA-DRB1, -DRB3, -DRB4⁴ and -DRB5 alleles, i.e. **DRB1*01:01:01 to 10:05, DRB3*01:01:02:01 to DRB3*03:03, DRB4*01:01:01:01 to DRB4*01:08, DRB5*01:01:01 to DRB5*02:06**, recognized by the HLA Nomenclature Committee in April 2013¹ will be amplified by the primers in the DR low resolution primer set, **wells 73 to 95**. The HLA-DRB alleles will be grouped into their corresponding serological specificities⁵.

¹HLA-A, HLA-B and HLA-DRB alleles listed on the IMGT/HLA web page 2013-April-17, release 3.12.0, www.ebi.ac.uk/imgt/hla.

²The A*03:88 and the A*11:130 alleles will give rise to identical amplification patterns. These two alleles can be separated by the respective high resolution SSP primer sets.

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The A*03:152 and the A*24:92 alleles will give rise to identical amplification patterns. These two alleles can be separated by the respective high resolution SSP primer sets.

The A*23:14:01-23:14:02 and the A*24:24 and 24:71 alleles will give rise to identical amplification patterns. These alleles can be separated by the respective high resolution SSP primer sets.

The 24:14-24:15, 24:51-24:53, 24:57, 24:64, 24:94, 24:114, 24:138, 24:188, 24:222N, 24:228 and the C*04:01:03 alleles may be distinguished by the different sizes of the specific PCR products generated by primer mix 5.

The A*32:01:14, 32:03, 32:38 and the A*74:07 alleles give rise to identical amplification patterns. These alleles can be separated by the respective high resolution primer sets.

³The B*08:26, 08:50, 08:62, 08:85, 08:94 and 42:07 alleles give rise to identical amplification patterns with the HLA-B low resolution primer set. These alleles can be separated by the respective high resolution primer sets.

The B*13:21, 13:35 and 13:59 and the B*44:135 and 44:158 alleles give rise to identical amplification patterns with the HLA-B low resolution primer set. These alleles can be separated by the respective high resolution primer sets.

The B*14:08 and the B*39:25N, 39:30, 39:32-39:34, 39:47, 39:50, 39:74 and 39:82 alleles give rise to identical amplification patterns with the HLA-B low resolution primer set. These alleles can be separated by the respective high resolution primer sets.

The B*18:29 and 18:72 and the B*35:32:01-35:32:02, 35:37, 35:53N, 35:64:01-35:64:02, 35:68:01-35:68:02, 35:99, 35:118-35:119 and 35:174 alleles give rise to identical amplification patterns with the HLA-B low resolution primer set. These alleles can be separated by the respective high resolution primer sets.

The B*41:09 and the B*45:02-45:03 alleles give rise to identical amplification patterns with the HLA-B low resolution primer set. These alleles can be separated by the respective high resolution primer sets.

The B*54:01:02 and the B*55:01:07, 55:02:01-55:02:06, 55:07, 55:10, 55:12, 55:16, 55:19, 55:26, 55:30, 55:35, 55:37, 55:39, 55:41-55:43, 55:47-55:48, 55:50 and 55:57 alleles give rise to identical amplification patterns with the HLA-B low resolution primer set. These alleles can be separated by the respective high resolution primer sets.

The B*55:04, 55:08, 55:13, 55:27, 55:46, 55:49, 56:15, 56:19N, 56:22 alleles give rise to identical amplification patterns with the HLA-B low resolution primer set. These alleles can be separated by the respective high resolution primer sets.

The B*55:23 and 55:32 and the B*56:18 and 56:31-56:32 alleles give rise to identical amplification patterns with the HLA-B low resolution primer set. These alleles can be separated by the respective high resolution primer sets.

⁴The DRB4*02:01N and DRB4*03:01N null alleles will not be amplified by the DR low resolution primer set.

⁵The DRB1*08:09 and the DRB1*14:15 alleles yield identical amplification patterns with the DR low resolution primer set. These alleles can be separated by the respective high resolution primer sets.

The DRB1*08:20 and the DRB1*13:18, 13:47, 13:55 and 13:158 alleles yield identical amplification patterns with the DR low resolution primer set. These alleles can be separated by the respective high resolution primer sets.

The DRB1*08:31, 08:41 and DRB1*11:67 alleles yield identical amplification patterns with the DR low resolution primer set. These alleles can be separated by the respective high resolution primer sets.

The DRB1*13:13, 13:119, 13:154 and 13:156 and the DRB1*14:84 and 14:116 alleles yield identical amplification patterns with the DR low resolution primer set. These alleles can be separated by the respective high resolution primer sets.

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Lot-specific information
SPECIFICITY TABLE

HLA-A low resolution primer set

Specificities and sizes of the PCR products of the 24 primer mixes used for HLA-A low resolution SSP typing

Primer Mix	Size of spec. PCR product ¹	Size of control band ²	HLA-A serology ³	Amplified HLA-A alleles ^{4,5}
1^{6,7}	120 bp, 145bp, 225 bp	800 bp	A1, A36	*01:01:01:01-01:04N, 01:06-01:33, 01:35-01:130, 03:18, 03:135, 11:94, 11:112, 36:01-36:05
2⁷	175 bp, 215 bp, 255 bp, 365 bp, 415 bp	800 bp	A2, A19, A28, A203, A210	*02:01:01:01-02:01:15, 02:01:17-02:01:19, 02:01:21-02:01:81, 02:01:83-02:22:02, 02:24:01-02:35:01, 02:35:03-02:47, 02:49-02:77, 02:78 ^w , 02:79:01-02:97:02, 02:99, 02:101:01-02:128, 02:130-02:414, 02:416-02:417
3⁸	205 bp, 235 bp	1070 bp	A1, A3, A11, A32, A34, A36	*01:12, 01:19, 01:21, 01:126, 02:338, 03:01:01:01-03:17:02, 03:19-03:74, 03:76-03:94, 03:96-03:134, 03:136-03:166, 11:25, 11:60, 11:130, 24:92, 32:04, 34:02:01-34:04, 34:07-34:10N, 36:02
4	190 bp	800 bp	A1, A3, A11, A30, A36, A68	*01:01:01:01-01:01:22, 01:01:24-01:01:47, 01:01:49-01:04N, 01:06-01:07, 01:09-01:11N, 01:13, 01:16N-01:18N, 01:20-01:29, 01:31N-01:33, 01:35-01:78, 01:80-01:98, 01:100-01:130, 02:78, 02:169, 03:12, 03:18, 03:88, 03:135, 11:01:01-11:27, 11:29-11:52Q, 11:54-11:139, 11:141-11:142, 26:19, 26:72, 30:08, 36:04, 68:13:01, 68:66, C*03:174, C*08:69, C*16:56
5	160 bp, 335 bp 505 bp	1070 bp	A3, A9, A23, A24, A2403, A29, A31, A32	*03:15, 03:19, 03:30, 03:152, 11:139, 23:01:01-23:58, 24:02:01:01-24:11N, 24:13:01-24:15, 24:17-24:64, 24:66-24:210, 24:212-24:232N, 29:07, 29:49, 31:08, 31:29, 32:05, 33:19, 33:53, C*04:01:03
6^{9,12,13}	135 bp, 200 bp	800 bp	A9, A23, A24, A29, A80	*23:01:01-23:56, 23:58, 24:24, 24:71, 29:07, 29:49, 31:29, 80:01:01:01-80:03, B*18:27
7	175 bp, 205 bp	1070 bp	A2, A3, A9, A23, A24, A2403, A26	*02:17:01 ^w -02:17:02 ^w , 11:139, 23:14:01-23:14:02, 24:02:01:01-24:11N, 24:13:01-24:13:02, 24:17-24:50, 24:54-24:56, 24:58-24:63, 24:66-24:91, 24:93, 24:95-24:113, 24:115-24:137, 24:139-24:187, 24:189-24:210, 24:212-24:221, 24:223-24:227,

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				24:229-24:232N, 26:16, 33:19, 68:45
8	165 bp, 200 bp	800 bp	A2, A3, A10, A11, A25, A26, A28, A32, A34, A66, A68, A69	*01:51, 02:55, 03:24, 03:50, 11:10, 25:01:01-25:16, 25:18-25:22, 26:01:01- 26:06, 26:08-26:15, 26:17-26:18, 26:20- 26:43:02, 26:45-26:63, 26:65-26:71N, 26:73- 26:85, 29:28, 32:15, 33:51, 34:01:01-34:11, 66:01-66:19, 68:01:01:01-68:100, 69:01
9^{6,10}	75 bp	800 bp	A3, A25, A32	*25:01:01-25:22, 32:01:01-32:01:13, 32:01:15-32:02, 32:04, 32:06-32:37, 32:39- 32:57, B*07:81, B*08:52, B*18:67, B*38:41, B*53:05, B*53:16
10^{6,12}	80 bp, 240 bp	800 bp	A10, A26, A43	*01:43, 01:51, 11:17, 11:40, 26:01:01-26:02, 26:04, 26:07:01-26:20, 26:22-26:29, 26:31- 26:43:02, 26:45-26:77, 26:79-26:85, 33:13, 33:48, 43:01, 68:84
11^{6,7}	80 bp, 175 bp, 500 bp	1070 bp	A1, A9, A10, A11, A26, A31, A34, A66	*01:13, 01:28, 03:63, 03:88, 11:01:01-11:27, 11:29-11:52Q, 11:54-11:139, 11:141-11:142, 24:19, 24:44, 26:03:01-26:03:02, 26:06, 26:21, 26:78, 34:01:01-34:08, 34:10N-34:11, 66:01, 66:04-66:11, 66:13-66:14, 66:17- 66:19, 80:02
12⁶	125 bp, 190 bp	800 bp	A3, A10, A25, A26, A31, A34, A43, A66	*02:309, 03:01:19, 11:11, 25:05-25:06, 26:09, 26:54, 31:03-31:04, 34:01:01-34:11, 43:01, 66:02-66:03, 66:16
13	175 bp, 225 bp	1070 bp	A1, A2, A3, A10, A25, A26, A34, A43, A66	*01:01:56 ^w , 01:13, 02:34-02:35:03, 02:56:01-02:56:02, 02:62, 02:103, 02:135, 03:01:01:01-03:01:22, 03:01:24-03:07, 03:09-03:11N, 03:13-03:31, 03:33-03:35, 03:37-03:40, 03:42-03:56, 03:58, 03:60- 03:71, 03:73-03:87, 03:90-03:106, 03:109- 03:110, 03:112-03:141, 03:143-03:151, 03:153-03:166, 25:01:01-25:05, 25:07- 25:22, 26:01:01-26:01:20, 26:01:22- 26:01:27, 26:02 ^w , 26:03:01-26:03:02, 26:05- 26:08, 26:10-26:28, 26:29 ^w , 26:30-26:33, 26:35-26:43:02, 26:45-26:48, 26:49 ^w , 26:50- 26:72, 26:74-26:77, 26:79-26:85, 30:55, 34:08, 43:01, 66:01, 66:04-66:09, 66:10 ^w , 66:11-66:15, 66:17-66:19, 68:71, 74:13
14^{6,7,12}	80 bp, 115 bp, 200 bp, 240 bp, 460 bp	1070 bp	A26, A29, A31, A34,	*02:237, 02:309, 03:95, 26:19, 26:22, 29:01:01:01-29:53, 31:03-31:04, 32:42, 34:04, 66:09

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15 ^{6,7,13,14}	90 bp, 135 bp, 205 bp	1070 bp	A1, A30	*01:13, 01:28, 03:43, 03:82, 11:113, 30:01:01-30:04:02, 30:06-30:20, 30:22-30:74, 31:35
16	240 bp, 380 bp	1070 bp	A2, A24, A31, A32	*02:237, 03:95, 29:14, 31:01:02-31:74, 32:05, 33:53
17	140 bp, 180 bp	1070 bp	A32	*01:95, 03:43, 03:82, 29:13, 29:39, 31:35, 32:01:01-32:03, 32:05-32:57, 74:07
18	200 bp, 390 bp	1070 bp	A33, A68	*02:243, 29:48, 32:15, 33:01:01-33:01:07, 33:03:01-33:37, 33:39-33:52, 33:54-33:68, 68:29, 74:04
19	340 bp 375 bp	800 bp	A2, A19, A68, A74	*01:121, 02:65, 02:407, 68:25, 74:01-74:06, 74:08-74:17
20 ¹²	210 bp, 240 bp	800 bp	A2, A210, A25, A68	*02:34-02:35:03, 02:46, 02:48, 02:56:01- 02:56:02, 02:62, 02:70, 02:78, 02:103, 02:129, 25:05, 26:54, 68:01:01:01-68:100
21 ⁶	65 bp, 240 bp, 375 bp	800 bp	A2, A26, A28, A32, A66, A68, A69	*02:55, 02:149, 02:243, 02:309, 23:57, 24:82, 26:22, 31:41, 32:06, 33:22, 66:06, 66:09, 68:29, 69:01
22 ^{6,11}	85 bp, 240 bp	800 bp	A2, A36	*02:34-02:35:03, 02:46, 02:48, 02:56:01- 02:56:02, 02:62, 02:70, 02:78, 02:103, 02:129, 31:62, 36:01-36:05
23 ^{6,12}	75 bp, 160 bp, 240 bp, 495 bp	800 bp	A2, A26, A28, A36, A68, A80	*02:55, 03:41, 03:63, 03:75, 03:88, 11:130, 24:18, 24:204, 24:213, 26:03:01-26:03:02, 26:05-26:06, 26:21, 26:30, 26:78, 33:24, 36:02, 68:05, 68:15, 68:20, 80:01:01:01- 80:01:01:02, 80:03
24 ¹³	360 bp	1070 bp	A10, A26, A31, A66	*02:135, 02:309, 03:01:19, 25:13, 26:30, 26:65, 31:04, 34:09, 66:02-66:03, 66:12, 66:16

¹Alleles are assigned by the presence of specific PCR product(s). However, the sizes of the specific PCR products may be helpful in the interpretation of HLA-A low resolution SSP typings. When the primers in a primer mix can give rise to HLA-specific PCR products of more than one length this is indicated if the size difference is more than 20 base pairs. Size differences of 20 base pairs or less are not given. For high resolution SSP kits the respective lengths of the HLA-specific PCR product(s) are given for the alleles amplified by these primer mixes.

Nonspecific amplifications, i.e. a ladder or a smear of bands, may sometimes be seen. GC-rich primers have a higher tendency of giving rise to nonspecific amplifications than other primers. PCR fragments longer than the control bands may sometimes be observed. Such bands should be disregarded and do not influence the interpretation of the SSP typings.

PCR fragments migrating faster than the control bands, but slower than a 400 bp fragment may be seen in some gel read-outs. Such bands can be disregarded and do not influence the interpretation of the SSP typings.

Some primers may give rise to primer oligomer artifacts. Sometimes this phenomenon is an inherent feature of the primer pair(s) of a primer mix. More often it is due to other factors such as too low amount of DNA in the PCR reactions, taking too long time in setting up the PCR reactions, working at elevated room temperature or using thermal cyclers that are not pre-heated.

²The internal positive control primer pairs amplify segments of the human growth hormone gene.

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The two different control primer pairs give rise to either an internal positive control band of 1070 base pairs, for most wells, or a band of 800 base pairs, for some wells.

Well number 1 contains the primer pair giving rise to the shorter, 800 bp, internal positive control band in order to help in the correct orientation of the HLA-A low resolution typing.

In addition, wells 2, 4, 6, 8 to 10, 12 and 19 to 23 contain the primer pair giving rise to the shorter, 800 bp, internal positive control band in order to allow kit identification.

In the presence of a specific amplification the intensity of the control band often decreases.

³The serological reactivity of all HLA-A alleles is not known. In this table we use the expert-assigned serological grouping in Tissue Antigens (2009) 73:95-170 and the serological grouping of the sequence-defined allele.

⁴For several HLA Class I alleles 1st and/or 4th exon(s) and beyond, as well as intron nucleotide sequences, are not available. In these instances it is not known whether some of the primers of the SSP sets are completely matched with the target sequences or not. We assume that unknown sequences in these regions are conserved within allelic groups.

⁵Due to the sharing of sequence motifs between HLA-Class I alleles, primer mix 4 will amplify the C*03:174, C*08:69 and C*16:56 alleles, primer mix 5 will amplify the C*04:01:03 allele, primer mix 6 will amplify the B*18:27 allele and primer mix 9 will amplify the B*07:81, B*08:52, B*18:67, B*38:41, B*53:05 and B*53:16 alleles.

⁶HLA-specific PCR products shorter than 125 base pairs have a lower intensity and are less sharp than longer PCR products.

⁷The primer pairs in wells 1, 2, 11, 14 and 15 will in many samples give rise to two or three HLA-specific PCR fragments.

⁸Primer mix 3 may faintly amplify the A*30:04:01-30:04:02, 30:06, 30:17 and 30:29 alleles.

⁹Primer mix 6 may give rise to a lower yield of A*23 alleles than the other A low primer mixes.

¹⁰Primer mix 9 may weakly amplify the A*34 alleles.

¹¹Primer mix 22 might faintly amplify most A*11 alleles.

¹²Primer mixes 6, 10, 14, 20 and 23 may have a tendency of giving rise to primer oligomer formation.

¹³Primer mixes 6, 15 and 24 may give rise to a lower yield of HLA-specific PCR product than the other HLA-A low primer mixes.

¹⁴Primer mix 15 may have tendencies of unspecific amplifications.

‘w’, might be weakly amplified.

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SPECIFICITY TABLE

HLA-B low resolution primer set

Specificities and sizes of the PCR products of the 48 primer mixes used for HLA-B low resolution SSP typing

Primer Mix	Size of spec. PCR product ¹	Size of control band ²	HLA-B serol. ³	Amplified HLA-B alleles ^{4,5}
25^{6,10}	110 bp	800 bp	7, 703, 40, 41, 42, 48, 61	*07:02:01-07:18:02, 07:20-07:32, 07:34-07:39, 07:41-07:47, 07:49N-07:50, 07:52, 07:54-07:59, 07:61-07:99, 07:101-07:121, 07:123-07:138, 07:140-07:154, 07:156-07:163, 07:166-07:190, 08:79, 15:138, 15:230, 15:241, 37:07, 40:15-40:16, 40:23, 40:32, 40:98, 40:136, 40:158, 40:183, 40:198, 40:231, 41:08, 42:05:01-42:05:02, 44:150, 48:05, 48:08, 48:15, C*02:23, C*04:77
26	215 bp	1070 bp	8, 44	*08:01:01-08:05, 08:07-08:25, 08:27-08:49, 08:51-08:61, 08:63-08:64, 08:66-08:84, 08:86N-08:93, 08:95-08:108, 15:142, 15:180, 35:218, 44:49, 44:156, 49:25, 51:68
27	140 bp, 235 bp	1070 bp	7, 8, 13, 15, 35, 4005, 44, 49, 61, 62, 77	*07:20, 07:24, 07:60, 07:100, 07:131, 08:21, 08:25, 13:01:01-13:04, 13:06-13:08, 13:10-13:23, 13:25-13:38, 13:40-13:57, 13:59-13:66, 15:07:01-15:07:02, 15:36 ^w , 15:45, 15:55, 15:68, 15:89 ^w , 15:126, 15:207, 35:05:01-35:05:03, 35:16-35:17, 35:22, 35:30, 35:51, 35:58, 35:72, 35:89, 35:97, 35:113-35:114, 35:125, 35:164, 35:199, 40:05, 40:71, 40:174, 44:08 ^w , 44:54, 44:57 ^w , 44:60, 44:106, 44:110, 44:135, 44:158, 46:12, 51:64, 51:148, 53:14, 55:51, 58:18, C*03:05, C*03:25, C*03:27, C*03:143, C*03:167
28^{7,8}	130 bp, 265 bp	800 bp	12, 13, 14, 17, 21, 35, 40, 41, 44, 45, 47, 49, 50, 60, 61, 64, 65	*13:01:01-13:04, 13:06-13:13, 13:15-13:23, 13:25-13:57, 13:59-13:67, 14:01:01-14:02:08, 14:03-14:04, 14:07N, 14:09, 14:11-14:12, 14:14-14:33, 15:46, 15:53, 15:106, 15:212, 18:44:01-18:44:02, 35:46-35:47, 35:63, 35:154, 35:207, 35:217, 40:01:01-40:01:29, 40:07, 40:10:01-40:10:02, 40:14:01-40:16, 40:22N-40:23, 40:25, 40:30-40:34, 40:36, 40:38, 40:42-40:43, 40:45, 40:47-40:49, 40:51-40:55, 40:58-40:63, 40:65-40:67, 40:69, 40:72:01-40:73, 40:76-40:77, 40:79-40:81, 40:84, 40:87:01-40:88, 40:92, 40:100-40:102, 40:106, 40:108, 40:110, 40:112-40:114, 40:116-40:118N, 40:121, 40:123-40:126, 40:128-40:130, 40:132, 40:134-40:136, 40:139-40:141, 40:146-40:147, 40:150-40:156, 40:158,

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29⁸	185 bp, 235 bp	800 bp	7, 16, 17, 27, 2708, 37, 38, 3901, 3902, 39, 64, 67	*07:02:32, 14:01:01-14:01:03, 14:07N-14:08, 14:10, 14:12, 14:14, 14:19, 14:26, 14:32, 27:01-27:05:15, 27:05:17-27:05:19, 27:05:21-27:06, 27:08-27:10, 27:12-27:13, 27:16-27:18, 27:20, 27:23, 27:26-27:27, 27:29, 27:31, 27:35-27:37, 27:39-27:42, 27:44-27:46, 27:48-27:61, 27:64N-27:69, 27:72-27:75, 27:77-27:80, 27:82-27:105, 37:02, 38:01:01-38:02:02, 38:02:04-38:03, 38:07-38:24, 38:26-38:32, 38:34N-38:43, 39:01:01:01-39:01:01:03, 39:01:03-39:01:08, 39:01:10-39:02:01, 39:03, 39:05:01-39:09, 39:11, 39:14-39:15, 39:18, 39:19:02, 39:22, 39:24:01-39:39:01, 39:40:01N-39:44, 39:46-39:48, 39:50-39:62, 39:64-39:71, 39:73-39:75, 39:77, 39:79-39:82, 47:04-47:05, 48:21, 48:26, 67:01:01, 67:03
30	180 bp	800 bp	14, 35, 38, 39, 65	*07:28, 08:87, 14:02:01-14:02:02, 14:02:04-14:02:05, 14:02:07-14:06:02, 14:09, 14:11, 14:13, 14:15-14:18, 14:20, 14:22-14:23, 14:25, 14:27, 14:29-14:31, 14:33, 15:77, 15:189, 15:233, 35:26, 38:05, 38:33, 39:04, 44:16, 44:37:01-44:37:02, 44:64:01-44:64:02, 44:91, 44:132, 44:150, 52:26, 57:04, A*23:31, A*24:106, C*07:231, C*16:10
31	290 bp	1070 bp	15, 22, 62, 63, 71, 72, 75, 76, 77, 46	*15:01:01:01-15:01:03, 15:01:06-15:02:06, 15:03:03, 15:04-15:08, 15:10:02-15:11:03, 15:11:05-15:15, 15:17:01:01-15:17:02, 15:19-15:21, 15:24:01-15:28, 15:30-15:36, 15:38:01-15:40, 15:42-15:46, 15:48, 15:50, 15:55-15:58, 15:60, 15:63, 15:65-15:66, 15:70-15:71, 15:73, 15:75-15:79N, 15:81-15:89, 15:92, 15:94N, 15:96-15:97, 15:101-15:102, 15:104-15:107, 15:109-15:113, 15:116-15:118, 15:120-15:122, 15:125-15:126, 15:128-15:129, 15:135-15:150, 15:152, 15:154-15:155, 15:157, 15:159-15:160, 15:162-15:172, 15:174-15:175,

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32	165 bp, 220 bp, 285 bp, 330 bp	1070 bp	5, 8, 12, 21, 22, 37, 41, 42, 44, 45, 48, 51, 56, 57, 60, 62, 70, 71, 72, 82	*08:01:01-08:05, 08:08N-08:13, 08:15-08:27, 08:29- 08:36, 08:38-08:48, 08:50-08:73, 08:75-08:76, 08:78, 08:80-08:86N, 08:88, 08:90-08:106, 13:46, 15:03:01- 15:03:04, 15:09-15:10:02, 15:18:01-15:18:05, 15:23, 15:29, 15:37, 15:46-15:47:02, 15:49, 15:51-15:54, 15:61-15:62, 15:64:01-15:64:02, 15:69, 15:72, 15:74, 15:80, 15:83, 15:90-15:91, 15:93, 15:98-15:99, 15:103, 15:106, 15:108, 15:114-15:115, 15:119, 15:123-15:124, 15:127, 15:131-15:134, 15:143, 15:151, 15:153, 15:156, 15:158, 15:161, 15:173, 15:176, 15:186, 15:197-15:198, 15:200, 15:210, 15:212, 15:220-15:221, 15:226N, 15:229, 15:235, 15:238, 15:242-15:243, 15:252-15:253, 15:255, 15:259, 15:263, 15:266, 15:274-15:275, 35:87, 37:12, 38:30, 40:12, 40:136, 40:231, 41:01-41:03:02, 41:05-41:09, 41:11-41:17, 41:19-41:27, 42:01:01- 42:02, 42:04-42:08, 42:10-42:15, 42:17-42:19, 44:14- 44:15, 44:18, 44:20, 44:62, 44:100, 44:166, 45:01- 45:14, 51:08, 51:20, 51:36, 51:44N, 51:97, 51:141, 52:19, 55:20, 55:56, 56:13, 57:09, 82:01-82:03, C*07:46
33^{8,9,11}	165 bp, 190 bp, 390 bp	1070 bp	5, 17, 21, 35, 51, 5102, 5103, 52, 56, 62, 63, 70, 78	*13:62, 15:01:02, 15:09, 15:16:01-15:17:02, 15:67, 15:95, 15:162, 15:168, 15:177, 15:196, 15:208, 15:216, 15:222, 15:230, 15:243, 15:254, 15:268, 15:273, 35:01:10, 35:04:02, 40:26, 40:28, 44:62, 49:18, 50:14, 51:01:01-51:01:03, 51:01:05-51:02:03, 51:02:05-51:09:02, 51:11N-51:12, 51:13:02-51:14, 51:16-51:23, 51:24:03-51:24:04, 51:26-51:33, 51:37- 51:41N, 51:43-51:44N, 51:46, 51:48-51:61:02, 51:63- 51:80, 51:82-51:91, 51:94-51:98N, 51:100-51:130, 51:132-51:142, 51:145-51:147, 51:149N-51:152, 52:01:01:01-52:01:04, 52:01:06-52:01:14, 52:01:16- 52:13, 52:15-52:24, 52:26-52:31, 53:28, 56:05:01- 56:06, 56:21, 58:08:01-58:08:02, 78:01:01-78:07
34	180 bp	800 bp	13, 22, 55, 60	*07:78, 13:01:01-13:02:15, 13:07N-13:09, 13:11, 13:14-13:20, 13:22:01-13:23, 13:25, 13:27-13:34, 13:36-13:45, 13:47, 13:49N-13:50, 13:52, 13:54- 13:58, 13:60-13:61, 13:63N-13:67, 40:48, 45:10, 49:07, 50:31, 54:26, 55:09, 55:22, 55:24

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35⁶	105 bp, 195 bp	1070 bp	8, 12, 27, 38, 39, 3902, 40, 44, 45, 48, 60, 70, 71, 72, 82	*07:27, 07:50, 08:04, 08:17, 08:54, 15:03:01- 15:03:04, 15:47:01-15:47:02, 15:49, 15:54, 15:61- 15:62, 15:64:01-15:64:02, 15:68-15:69, 15:91, 15:98, 15:103, 15:123, 15:127, 15:131-15:132, 15:151, 15:156, 15:158, 15:173, 15:210, 15:220, 15:235, 15:242, 15:253, 15:259, 15:266, 15:274, 18:37, 27:18, 27:29, 37:28, 38:03, 39:02:01-39:02:02, 39:08, 39:13:01-39:13:02, 39:23, 39:39:01-39:39:02, 39:49, 40:12, 40:46, 40:93, 42:11, 44:10, 44:15, 44:18, 44:40, 44:44, 44:130, 44:140, 44:156, 45:01, 45:05-45:07, 45:11-45:14, 48:01:01-48:05, 48:07- 48:30, 49:20, 50:02, 52:16, 55:18, 82:01-82:03
36	280 bp	1070 bp	5, 7, 8, 13, 15, 16, 17, 18, 22, 35, 40, 42, 44, 46, 48, 49, 51, 53, 55, 56, 57, 58, 60, 61, 62, 63, 70, 71, 72, 75, 76, 77, 78	*07:09, 07:11, 07:17, 07:162, 08:28, 08:35, 08:37, 08:89, 08:107, 13:04, 13:10, 13:26, 15:01:01:01- 15:01:04, 15:01:06-15:08, 15:11:01-15:16:03, 15:18:01-15:21, 15:23-15:29, 15:31-15:36, 15:38:01- 15:40, 15:43-15:44, 15:46-15:47:02, 15:49-15:57, 15:60-15:62, 15:64:01-15:72, 15:74-15:76, 15:78:01- 15:82, 15:84-15:85, 15:87-15:89, 15:91-15:98, 15:101-15:129, 15:131-15:132, 15:134-15:136, 15:138-15:149N, 15:151-15:161, 15:163-15:167, 15:169-15:176, 15:178-15:187, 15:189-15:195, 15:197-15:207, 15:209N-15:215, 15:217-15:223, 15:225-15:228, 15:231-15:232, 15:234-15:242, 15:244-15:247, 15:249-15:251, 15:254-15:268, 15:270-15:272N, 15:274-15:275, 18:01:01:01-18:15, 18:17N-18:25, 18:27-18:40, 18:42-18:60, 18:62- 18:89, 27:41, 35:01:01:01-35:01:37, 35:05:01- 35:05:03, 35:07-35:08:06, 35:10-35:11:03, 35:14:01- 35:17, 35:19-35:21, 35:23-35:30, 35:32:01-35:32:02, 35:35, 35:37, 35:40N-35:43:01, 35:45-35:54, 35:57- 35:58, 35:61:01-35:64:02, 35:66-35:69, 35:71-35:72, 35:76-35:80, 35:82, 35:86, 35:89-35:94, 35:97, 35:99-35:105, 35:107-35:108:02, 35:110-35:126, 35:130N-35:135, 35:137-35:148, 35:158-35:159, 35:161, 35:165N-35:166, 35:168, 35:170-35:171, 35:173N-35:178, 35:180, 35:185-35:192, 35:194, 35:196-35:197, 35:200, 35:202-35:203, 35:206- 35:210, 35:212, 35:215-35:219, 35:222, 35:224- 35:229, 37:35, 39:07, 39:43, 40:03, 40:20, 40:38, 40:52, 40:59-40:60, 40:105, 40:158-40:159, 40:222, 41:24, 42:09, 44:17, 44:43:01-44:43:02, 44:144, 45:09, 46:01:01-46:10, 46:12-46:17, 46:19-46:38, 48:02:01-48:02:03, 48:14, 48:23, 48:25, 49:04-49:05, 51:37, 51:45, 51:63, 51:97, 53:01:01-53:03, 53:05- 53:06, 53:08:01-53:18, 53:20-53:30, 54:06, 54:09, 54:14, 55:14, 55:23, 55:32, 56:03, 56:09, 56:18,

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37	195 bp	1070 bp	27, 35, 37, 44, 58, 76	*15:12, 15:14, 15:19, 15:91, 15:131, 15:161, 15:270, 18:54, 18:56, 35:45, 35:71, 37:01:01-37:09, 37:12-37:13, 37:15-37:21, 37:23-37:28, 37:30N-37:33N, 37:35-37:36, 38:17, 44:17, 44:43:01-44:43:02, 44:144, 45:09, 46:17, 53:22, 58:07, A*24:174
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61	145 bp	1070 bp	12, 21, 35, 40, 4005, 41, 45, 47, 50, 60, 61	*07:133, 15:46, 15:53, 15:106, 15:143, 15:212, 18:48, 35:19, 35:47, 35:63, 35:154, 35:217, 39:69, 40:01:01-40:11:02, 40:14:01-40:16, 40:18, 40:20, 40:22N-40:40, 40:42-40:45, 40:48-40:75, 40:77-40:92, 40:94-40:95, 40:97-40:108, 40:111-40:116, 40:118N-40:136, 40:138-40:156, 40:158-40:184, 40:186-40:187, 40:189-40:200, 40:202-40:207, 40:210-40:238, 41:01-41:04, 41:05 [?] , 41:06-41:25, 41:27, 44:09, 44:46, 44:75, 44:90, 44:129, 44:131, 45:01-45:14, 47:02, 47:03 ^w , 50:01:01-50:02, 50:04-50:05, 50:07-50:20, 50:31-50:32
62	300 bp	1070 bp	7, 12, 13, 15, 17, 18, 21, 27, 2708, 35, 37, 38, 39, 3902, 40, 4005, 41, 44, 45, 47, 48, 49, 50, 52, 60, 61, 62, 70, 72, 76	*07:54, 07:123, 08:17, 08:38, 08:54, 08:101, 13:01:01-13:04, 13:06, 13:08-13:23, 13:25-13:35, 13:37-13:67, 15:01:01:01-15:01:04, 15:01:06-15:01:18, 15:01:20-15:01:32, 15:03:01-15:07:02, 15:12, 15:14, 15:19-15:20, 15:24:01-15:27:03, 15:30, 15:32-15:36, 15:38:01-15:40, 15:42-15:43, 15:45-15:50, 15:53-15:54, 15:56-15:58, 15:60-15:63, 15:65-15:66, 15:68-15:71, 15:73-15:75, 15:77-15:79N, 15:81-15:87, 15:91-15:92, 15:94N, 15:96-15:98, 15:101-15:107, 15:109-15:111N, 15:113, 15:116-15:118, 15:122-15:123, 15:125-15:129, 15:131-15:132, 15:135-15:138, 15:140-15:142, 15:145-15:147, 15:150-15:152, 15:154-15:160, 15:163-15:167, 15:169, 15:171-15:175, 15:178-15:179,

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65	180 bp	1070 bp	12, 15, 21, 22, 44, 45, 49, 50, 51, 56, 61, 62, 82	*13:03, 13:48, 15:73, 40:71, 44:10, 44:15, 44:18, 44:140, 45:01, 45:04-45:07, 45:11-45:14, 46:11, 49:01:01-49:03, 49:06, 49:08-49:17, 49:19N-49:26, 50:01:01-50:02, 50:04-50:08, 50:10-50:13,

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66⁶	90 bp, 240 bp	800 bp	57	*55:14, 57:01:01-57:44, 57:46-57:50, 57:52-57:64, 58:36, C*06:72
67^{6,13}	90 bp	1070 bp	5, 13, 15, 17, 39, 55, 56, 58, 60, 61, 62, 71	*07:182N, 13:11, 15:18:03, 15:73, 15:224, 39:17, 40:48, 40:71, 51:62, 56:02, 56:04, 56:10, 58:01:01-58:02, 58:04-58:29, 58:31N-58:35, 58:37-58:40, 58:42, C*02:06^w , C*02:47^w
68⁶	95 bp	1070 bp	8, 18, 22, 35, 37, 38, 39, 44, 51, 5102, 5103, 53, 78	*07:65 ^w , 07:134 ^w , 08:32, 18:01:01:01-18:11, 18:13-18:15, 18:17N-18:36, 18:38-18:47, 18:49-18:65, 18:67-18:89, 35:01:01:01-35:08:04, 35:08:06-35:09:03, 35:11:01-35:12:03, 35:14:01-35:15, 35:17-35:18, 35:20:01-35:24:02, 35:27, 35:29:01-35:45, 35:48, 35:50-35:62, 35:64:01-35:68:02, 35:70-35:72, 35:74-35:75, 35:76 ^w , 35:77-35:79, 35:81-35:153, 35:155-35:185, 35:187-35:190, 35:192-35:197, 35:199-35:206, 35:208-35:209, 35:211-35:216N, 35:218-35:225, 35:227-35:229, 37:08, 38:06-38:07, 39:19:01-39:19:02, 44:06, 51:01:01-51:24:04, 51:26-51:46, 51:48-51:103, 51:105-51:111, 51:113-51:117, 51:119-51:146, 51:148-51:152, 53:01:01-53:16, 53:18-53:27, 53:29, 56:06 ^w , 78:01:01-78:04, 78:07
69^{6,10}	115 bp, 150 bp	1070 bp	15, 18, 22, 27, 35, 39, 46, 55, 62, 72, 73, 75, 76	*07:100, 13:31, 13:41, 15:01:01:01-15:01:04, 15:01:06-15:01:16, 15:01:18-15:01:30, 15:01:32, 15:04, 15:07:01-15:08, 15:11:01-15:12, 15:14-15:15, 15:19, 15:24:01-15:24:02, 15:26N-15:28, 15:30, 15:32, 15:34-15:35, 15:38:01-15:38:02, 15:43, 15:45-15:46, 15:50, 15:53-15:54, 15:56-15:58, 15:60, 15:63, 15:66, 15:68, 15:70-15:71, 15:73, 15:75-15:77, 15:79N, 15:81-15:82, 15:85, 15:87, 15:92, 15:94N, 15:96-15:97, 15:101-15:102, 15:104-15:105, 15:109-15:111N, 15:113, 15:117-15:118, 15:120, 15:122, 15:125-15:126, 15:128-15:129, 15:135, 15:137, 15:140, 15:142-15:149N, 15:152, 15:154, 15:157, 15:159-15:160, 15:163-15:167, 15:169, 15:171-15:172, 15:174-15:175, 15:178, 15:180-15:184, 15:187, 15:189-15:193, 15:201-15:203, 15:205-15:207, 15:209N, 15:211-15:212, 15:215, 15:217, 15:225, 15:227-15:228, 15:231-15:234, 15:236, 15:239, 15:241, 15:244-15:247, 15:251, 15:256-15:262N, 15:264, 15:267, 15:269-15:270, 15:272N, 18:19, 27:25, 27:75, 35:14:01-35:14:02, 35:43:01-35:44, 35:62, 35:67, 35:79, 35:86, 35:102,

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70¹⁵	360 bp	1070 bp	B ^w 4	*07:27, 07:36, 07:38, 07:81, 07:149, 07:180, 08:02-08:03, 08:52, 08:78, 13:01:01-13:04, 13:06-13:08, 13:10-13:23, 13:25-13:38, 13:40-13:66, 15:13:01-15:13:02, 15:16:01-15:17:02, 15:23-15:24:02, 15:36, 15:43, 15:67, 15:87, 15:89, 15:95, 15:115, 15:157, 15:162, 15:168, 15:177, 15:196, 15:208, 15:216, 15:222, 15:230, 15:254, 15:256, 15:268, 15:273, 18:09, 18:54, 18:67, 27:01-27:07:03, 27:09-27:11, 27:13-27:17, 27:19-27:21, 27:23-27:25, 27:27-27:32, 27:34-27:39, 27:41, 27:43, 27:45-27:88, 27:90:01-27:105, 37:01:01-37:04:02, 37:06-37:10, 37:12-37:36, 38:01:01-38:43, 40:13, 40:19, 40:47, 40:96, 40:109-40:110, 40:117, 40:157, 40:188, 40:201, 44:02:01:01-44:08, 44:10-44:45, 44:47-44:74, 44:76-44:89, 44:91-44:126:02, 44:128, 44:130, 44:132-44:175, 47:01:01:01-47:01:02, 47:03-47:08, 48:18, 49:01:01-49:20, 49:22-49:26, 51:01:01-51:24:04, 51:26-51:46, 51:48-51:152, 52:01:01:01-52:31, 53:01:01-53:30, 54:12, 56:07, 56:21, 57:01:01-57:11, 57:13-57:64, 58:01:01-58:02, 58:04-58:29, 58:31N-58:40, 58:42, 59:01:01:01-59:05
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72	285 bp	800 bp	7, 703, 8, 35, 40, 41, 42, 48, 53, 60, 61, 81	*07:02:01-07:06, 07:08-07:18:02, 07:20-07:32, 07:34-07:39, 07:41-07:52, 07:54-07:59, 07:61-07:76, 07:79-07:83, 07:85-07:99, 07:101-07:121, 07:123-07:138, 07:140-07:164, 07:166-07:190, 08:01:01-08:05, 08:07-08:08N, 08:10-08:11, 08:13-08:15, 08:17-08:83, 08:85-08:88, 08:90-08:102, 08:104-08:106, 08:108, 35:66, 35:87, 37:07, 40:15-40:16, 40:30-40:32, 40:34, 40:45, 40:59, 40:80, 40:98, 40:137, 40:160:01-40:160:02, 41:02:01-41:02:05, 41:04, 41:10-41:11, 41:13, 41:18-41:19, 41:23-41:24, 41:27, 42:01:01-42:02, 42:05:01-42:07, 42:09-42:13, 42:15-42:20, 44:150, 44:166, 48:01:01-48:01:04, 48:05-48:12, 48:14-48:20, 48:22, 48:27-48:30, 53:15, 81:01-81:06

¹Alleles are assigned by the presence of specific PCR product(s). However, the sizes of the specific PCR products may be helpful in the interpretation of HLA-B low resolution SSP typings. When the primers in a primer mix can give rise to HLA-specific PCR products of more than one length this is indicated if the size difference is more than 20 base pairs. Size differences of 20 base pairs or less are not given. For high resolution SSP kits the respective lengths of the HLA-specific PCR product(s) are given for the alleles amplified by these primer mixes.

Nonspecific amplifications, i.e. a ladder or a smear of bands, may sometimes be seen. GC-rich primers have a higher tendency of giving rise to nonspecific amplifications than other primers.

PCR fragments longer than the control bands may sometimes be observed. Such bands should be disregarded and do not influence the interpretation of the SSP typings.

PCR fragments migrating faster than the control bands, but slower than a 400 bp fragment may be seen in some gel read-outs. Such bands can be disregarded and do not influence the interpretation of the SSP typings.

Some primers may give rise to primer oligomer artifacts. Sometimes this phenomenon is an inherent feature of the primer pair(s) of a primer mix. More often it is due to other factors such as too low amount of DNA in the PCR reactions, taking too long time in setting up the PCR reactions, working at elevated room temperature or using thermal cyclers that are not pre-heated.

²The internal positive control primer pairs amplify segments of the human growth hormone gene. The two different control primer pairs give rise to either an internal positive control band of 1070 base pairs, for most wells, or a band of 800 base pairs, for some wells.

Well number 25 contains the primer pair giving rise to the shorter, 800 bp, internal positive control band. In addition, wells number 28 to 30, 34, 41, 44, 45, 52, 54, 55, 59, 66 and 72 contain the primer pair giving rise to the shorter, 800 bp, internal positive control band.

In the presence of a specific amplification the intensity of the control band often decreases.

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³The serological reactivity of all HLA-B alleles is not known. In this table we use the expert-assigned serological grouping in Tissue Antigens (2009) **73**:95-170 and the serological grouping of the sequence-defined allele.

⁴For several HLA Class I alleles 1st and/or 4th exon(s) and beyond, as well as intron nucleotide sequences, are not available. In these instances it is not known whether some of the primers of the SSP sets are completely matched with the target sequences or not. We assume that unknown sequences in these regions are conserved within allelic groups.

⁵Due to the sharing of sequence motifs between HLA-Class I alleles, the C*02:23 and C*04:77 alleles will be amplified by primer mix 25, the C*03:05, C*03:25, C*03:27, C*03:143 and C*03:167 alleles will be amplified by primer mix 27, the C*01:30 and C*12:87 alleles will be amplified by primer mix 28, the A*23:31, A*24:106, C*07:231 and C*16:10 alleles will be amplified by primer mix 30, the C*01:73 allele will be amplified by primer mixes 31, 50 and 55, the C*07:02:30 and C*08:16:02 alleles will be amplified by primer mix 31, the C*07:46 allele will be amplified by primer mix 32, the A*24:174 allele will be amplified by primer mix 37, the C*03:102 allele will be amplified by primer mixes 41 and 65, the C*03:179 allele will be amplified by primer mix 43, the C*07:302 allele will be amplified by primer mix 44, the C*15:51 allele will be amplified by primer mix 45, the C*03:129 and C*17:16 alleles will be amplified by primer mix 49, the C*15:25 allele will be amplified by primer mix 53, the C*15:39 allele will be amplified by primer mix 55, the C*15:02:04 allele will be amplified by primer mix 64, the C*03:19 allele will be amplified by primer mix 65, the C*06:72 allele will be amplified by primer mix 66, the C*02:06 and 02:47 alleles will weakly be weakly amplified by primer mix 67 and the A*26:68, A*68:56, C*02:56, C*06:20 and C*12:50 alleles will be amplified by primer mix 69.

⁶HLA-specific PCR products shorter than 125 base pairs have a lower intensity and are less sharp than longer PCR products.

⁷Primer mix 28 may give rise to a lower yield of HLA-specific PCR product than the other HLA-B low resolution primer mixes in B*40, B*41, B*45, B*49 and B*50 alleles.

⁸Primer mixes 28, 29, 33, 53 and 63 may give rise to a lower yield of HLA-specific PCR product than the other HLA-B low resolution primer mixes.

⁹Primer mix 33 has pronounced tendencies of unspecific amplifications.

¹⁰Primer mixes 25, 43, 44, 50, 53 and 69 have a tendency to giving rise to primer oligomer formation, most pronounced in primer mix 53

¹¹The B*57 and B*58 alleles might be faintly amplified by primer mix 33.

¹²The C*17:01 to C*17:04 alleles might be faintly amplified by primer mix 49.

¹³Primer mixes 56 and 67 may generate a false positive band of about 800 base pairs. This band should be disregarded when interpreting HLA-B low resolution typings.

¹⁴Primer mix 63 may give rise to a lower yield of B*54 alleles than the other B low primer mixes.

¹⁵The Bw4-associated HLA-A specificities A9, A23, A24, A2403, A25 and A32 are not amplified by the primer pair in primer mix 70.

‘w’, might be weakly amplified.

‘?’, nucleotide sequence information not available for the primer matching sequence.

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SPECIFICITY TABLE

Specificities and sizes of the PCR products of the 23+1 primer mixes used for DR low resolution SSP typing

Primer Mix	Size of spec. PCR product ¹	Size of control band ²	DR serology ³	Amplified HLA-DRB alleles ^{4,5}
73 ^{7,8}	205 bp, 255 bp	515 bp	1	*01:01:01-01:02:08, 01:04-01:38, 01:40N-01:58
74	200 bp	430 bp	103	*01:03, 01:39N, 01:42
75 ⁷	200 bp, 220 bp	430 bp	15	*15:01:01:01-15:94
76	210 bp	430 bp	16	*16:01:01-16:05:02, 16:07-16:23
77 ^{5,6,7}	120 bp, 220 bp	430 bp	3, 17, 18, 11	*03:01:01:01-03:75, 03:77-03:84, 03:86-03:90, 11:07, 11:53, 11:103, 11:105, 11:107, 11:125, 15:25
78 ^{5,6,7}	80 bp, 210 bp	430 bp	3, 17, 11, 13, 14,6	*03:01:01:01-03:01:22, 03:04:01-03:06, 03:08- 03:16, 03:18-03:20, 03:22-03:23, 03:25-03:26, 03:28, 03:30-03:31, 03:33-03:34, 03:36-03:37, 03:43-03:48, 03:50-03:52, 03:54-03:68N, 03:70- 03:73, 03:75-03:84, 03:86, 03:89, 08:40, 11:02:01-11:03, 11:11:01-11:11:02, 11:14:01- 11:14:02, 11:16, 11:20-11:21, 11:36, 11:40- 11:41, 11:48, 11:59, 11:63, 11:65:01-11:65:02, 11:68, 11:70, 11:73, 11:76, 11:79-11:80, 11:83, 11:85-11:87, 11:93, 11:118, 11:122, 11:124, 11:127, 11:131-11:132, 11:135, 11:138-11:139, 11:142, 13:01:01-13:04, 13:08, 13:10, 13:15- 13:17, 13:19-13:20, 13:22-13:24, 13:27-13:29, 13:31-13:41, 13:43, 13:45, 13:48, 13:51-13:54, 13:57, 13:59, 13:61:01-13:61:02, 13:63- 13:66:02, 13:68-13:76, 13:78-13:81, 13:83- 13:85, 13:87-13:99, 13:101-13:102, 13:104- 13:107, 13:109, 13:111-13:117, 13:120-13:131, 13:133, 13:135, 13:137N-13:145, 13:147- 13:149, 13:151-13:153, 13:155, 13:159, 14:16, 14:19, 14:21, 14:82, 14:95, 14:109, 14:132, 14:137N
79 ^{6,7}	85 bp, 210 bp	430 bp	3, 18, 11, 13, 14,6	*03:02:01-03:03, 03:27, 03:29, 03:38, 03:53, 03:74, 03:88, 03:90, 11:13:01 ^w -11:13:02 ^w , 11:26, 11:34, 13:15, 13:19, 13:26:01-13:26:02, 13:44, 13:53, 13:57, 13:85-13:86, 13:104, 14:02- 14:03:02, 14:06:01-14:06:02, 14:09, 14:12:01- 14:13, 14:17-14:21, 14:24, 14:27, 14:29-14:30, 14:32:01 ^w -14:32:02 ^w , 14:33, 14:40-14:41, 14:47- 14:49, 14:51, 14:63, 14:65 ^w , 14:67, 14:77-14:78, 14:80-14:81, 14:83, 14:85, 14:89, 14:94, 14:98,

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				14:102, 14:106, 14:108-14:109, 14:115, 14:119, 14:121, 14:135
80 ^{6,7,8}	100 bp, 175 bp	430 bp	3,4	*04:01:01-04:05:11, 04:05:13-04:158N
81 ⁷	210 bp, 235 bp	430 bp	7, 13, 14	*07:01:01:01-07:01:04, 07:03-07:24, 12:22, 13:17, 13:116, 14:50
82 ⁷	170 bp, 215 bp, 250 bp	515 bp	8, 12, 14	*08:01:01-08:19, 08:21-08:53, 11:67, 12:04, 12:16:01-12:16:02, 12:22, 12:39, 14:11, 14:15, 14:68, 14:93
83 ^{6,7}	90 bp, 135 bp, 180 bp	430 bp	3, 9, 11	*03:08, 03:65, 09:01:02-09:20, 11:07, 11:53, 11:103, 11:105, 11:107, 11:125
84	175 bp	430 bp	10,11,13	*03:76, 10:01:01-10:05, 11:59, 11:80, 11:83, 11:87, 11:135, 11:142, 13:27, 13:41, 13:71, 13:129
85 ^{6,7}	100 bp, 170 bp	430 bp	11, 3, 8	*03:08, 03:65, 08:31, 08:41, 11:01:01-11:70, 11:72-11:145
86 ^{6,7}	85 bp, 105 bp	430 bp	12, 8	*08:32, 08:53, 12:01:01-12:39
87 ⁸	215 bp	430 bp	6, 8, 11, 13, 14, 1403	*03:76, 08:20-08:21, 11:01:01-11:04:11, 11:06:01-11:06:03, 11:08:01-11:12:02, 11:14:01-11:16, 11:18-11:21, 11:23-11:25, 11:27:01-11:33, 11:35-11:51, 11:54:01- 11:54:02, 11:56-11:66, 11:68, 11:70, 11:72- 11:81, 11:83-11:88, 11:90-11:97, 11:99- 11:102:02, 11:106, 11:108-11:124, 11:126- 11:135, 11:137-11:142, 11:144-11:145, 13:01:01-13:02:01, 13:02:03-13:08, 13:10- 13:16, 13:18-13:43, 13:45-13:85, 13:87-13:115, 13:117-13:128, 13:130-13:145, 13:147-13:161, 14:03:01-14:03:02, 14:12:01-14:12:02, 14:16, 14:19, 14:21-14:22, 14:25, 14:27, 14:40, 14:53, 14:63, 14:67, 14:69, 14:74, 14:77-14:78, 14:84- 14:85, 14:98, 14:102, 14:105, 14:109, 14:115- 14:116, 14:128, 14:135, 14:137N, DRB3*02:27
88 ^{7,8}	195 bp, 225bp	430 bp	13, 8, 11, 12, 14, 6	*08:01:01-08:02:04, 08:04:01-08:09, 08:11, 08:16-08:17, 08:20-08:22, 08:24, 08:26, 08:28, 08:31, 08:39, 08:41-08:44, 08:50, 08:52, 11:01:01-11:01:17, 11:02:01-11:06:03, 11:09- 11:12:02, 11:14:01-11:16, 11:20-11:21, 11:23- 11:25, 11:27:01-11:30, 11:32-11:33, 11:35- 11:41, 11:43-11:44, 11:46:01-11:51, 11:54:01- 11:56, 11:58:01-11:63, 11:65:01-11:70, 11:72, 11:74:01-11:78, 11:80-11:88, 11:90-11:97, 11:99-11:102:02, 11:106, 11:108-11:118, 11:120-11:124, 11:126-11:129, 11:133-11:135, 11:137-11:142, 11:144-11:145,

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Lot-specific information

				12:02:01-12:02:05, 12:13, 12:15-12:16:02, 12:18-12:21, 12:23, 12:26-12:27, 12:31N-12:33, 12:37, 13:01:01-13:02:01, 13:02:03-13:02:08, 13:04-13:05:02, 13:07:01-13:09, 13:11:01-13:11:02, 13:14:01-13:24, 13:26:01-13:29, 13:31-13:32, 13:34-13:36, 13:38-13:43, 13:45-13:55, 13:57, 13:59, 13:61:01-13:65, 13:67-13:76, 13:78-13:80, 13:83-13:84, 13:87, 13:91-13:93, 13:96:01-13:100, 13:102-13:109, 13:111-13:114, 13:116-13:117, 13:121, 13:123-13:132, 13:135-13:136, 13:138-13:150, 13:153, 13:155, 13:158-13:160, 14:15-14:16, 14:22, 14:24-14:25, 14:27, 14:37, 14:53, 14:73, 14:105, 14:128
89⁵	175 bp	430 bp	3, 13, 14, 17, 6, 11	*03:01:01:01-03:07, 03:09, 03:11:01-03:41, 03:43-03:45, 03:47-03:63, 03:66-03:68N, 03:70-03:84, 03:86, 03:88-03:90, 08:20, 13:01:01-13:16, 13:18-13:42, 13:44, 13:46-13:66:02, 13:68-13:102, 13:104-13:115, 13:117-13:121, 13:123-13:158, 13:161, 14:02-14:03:02, 14:05:01-14:06:02, 14:09, 14:12:01-14:14, 14:17-14:21, 14:23:01, 14:23:03-14:24, 14:27, 14:29-14:30, 14:33, 14:36-14:37, 14:40-14:45, 14:47-14:48, 14:51, 14:56, 14:59, 14:63-14:65, 14:67, 14:77-14:78, 14:80-14:81, 14:83-14:85, 14:89, 14:91, 14:94-14:96, 14:98, 14:100, 14:102-14:103, 14:106, 14:108-14:109, 14:115-14:116, 14:121, 14:123, 14:127:01-14:127:02, 14:134-14:136
90^{6,7}	100 bp, 140 bp, 155 bp	430 bp	14, 4, 8,13, 6	*04:62, 04:69, 04:73, 04:105:01-04:105:02, 04:122, 04:146, 08:08, 11:69, 11:82, 13:45, 14:01:01-14:01:02, 14:01:04, 14:04, 14:07:01-14:07:02, 14:10, 14:16, 14:22, 14:25-14:26, 14:28, 14:31-14:32:03, 14:35, 14:37-14:39, 14:49-14:50, 14:53-14:54:01, 14:55, 14:57-14:58, 14:60-14:62, 14:68-14:71, 14:73-14:76, 14:79, 14:82, 14:86-14:88, 14:90, 14:93, 14:99, 14:101, 14:104-14:105, 14:107, 14:110-14:114, 14:117-14:120, 14:122, 14:124-14:125, 14:128-14:129, 14:131, 14:137N-14:140, DRB4*01:03:01:02N
91^{6,7,9}	110 bp, 135 bp, 170 bp	430 bp	14, 3, 9, 11, 12, 13, 15, 6, 4	*03:10, 09:01:02-09:01:05, 09:01:07-09:02:02, 09:04-09:20, 11:13:01-11:13:02, 11:17, 11:52, 13:43, 13:159, 14:01:01-14:02, 14:04-14:11, 14:13-14:14, 14:16-14:18, 14:19 ^w , 14:20, 14:21 ^w , 14:22-14:23:04, 14:26, 14:28-14:36,

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				14:38-14:39, 14:41, 14:43-14:52, 14:54:01-14:57, 14:59-14:62, 14:64-14:65, 14:68, 14:70-14:76, 14:79-14:83, 14:86-14:88, 14:90-14:97, 14:99-14:101, 14:103-14:108, 14:109 ^w , 14:110-14:114, 14:117-14:127:02, 14:129-14:134, 14:137N-14:140, 15:27, 15:34, 15:66
92 ^{6,7,8}	110 bp, 175 bp, 225 bp	430 bp	14, 3, 8, 11, 13, 15, 16, 6, 2	*03:10, 08:09, 08:20-08:21, 08:32, 08:35, 08:36:02, 08:53, 11:13:01-11:13:02, 11:17, 11:23, 11:25, 11:31, 11:45, 11:52, 11:55, 11:64, 11:89, 11:96, 11:119, 13:13, 13:18, 13:43, 13:45, 13:47, 13:55, 13:119, 13:144, 13:146, 13:154, 13:156, 13:158-13:159, 14:01:01-14:01:04, 14:03:01-14:05:04, 14:07:01-14:08, 14:10-14:12:02, 14:14-14:16, 14:18, 14:22-14:23:04, 14:25-14:28, 14:31-14:32:03, 14:34-14:36, 14:38-14:40, 14:42-14:45, 14:49-14:50, 14:53-14:65, 14:67-14:79, 14:81-14:82, 14:84-14:93, 14:95-14:97, 14:99-14:105, 14:107, 14:110-14:120, 14:122-14:140, 15:21 ^w , 16:04 ^w , 16:18 ^w
93 ^{7,8}	160 bp, 240 bp	430 bp	52	DRB3*01:01:02:01-01:15, DRB3*02:01-02:29N, DRB3*03:01:01-03:03
94 ^{8,10}	215 bp	430 bp	53	DRB4*01:01:01:01-01:08
95	175 bp	430 bp	51	DRB5*01:01:01-01:14, DRB5*02:02-02:06
96 ¹¹				Negative control

¹Alleles are assigned by the presence of specific PCR product(s). However, the sizes of the specific PCR products may be helpful in the interpretation of DR low resolution SSP subtypings. When the primers in a primer mix can give rise to HLA-specific PCR products of more than one length this is indicated if the size difference is more than 20 base pairs. Size differences of 20 base pairs or less are not given. For high resolution SSP kits the respective lengths of the HLA-specific PCR product(s) are given for the alleles amplified by these primer mixes.

Nonspecific amplifications, i.e. a ladder or a smear of bands, may sometimes be seen. GC-rich primers have a higher tendency of giving rise to nonspecific amplifications than other primers, e.g. the primers in wells 75 and 90 to 92.

PCR fragments longer than the control bands may sometimes be observed. Such bands should be disregarded and do not influence the interpretation of the SSP typings.

PCR fragments migrating faster than the control bands, but slower than a 400 bp fragment may be seen in some gel read-outs. Such bands can be disregarded and do not influence the interpretation of the SSP typings.

Some primers may give rise to primer oligomer artifacts. Sometimes this phenomenon is an inherent feature of the primer pair(s) of a primer mix. More often it is due to other factors such as too low amount of DNA in the PCR reactions, taking too long time in setting up the PCR reactions, working at elevated room temperature or using thermal cyclers that are not pre-heated.

²The internal positive control primer pairs amplify segments of the human growth hormone gene. The two different control primer pairs give rise to either an internal positive control band of 430 base pairs, for most wells, or a band of 515 base pairs, for some wells.

Well number 73 contains the primer pair giving rise to the longer, 515 bp, internal positive control band. In addition, well number 82 contains the primer pair giving rise to the longer, 515 bp, internal positive control band.

In the presence of a specific amplification the intensity of the control band often decreases.

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³The serological split of all DRB1 alleles is not known. In this table we use the expert-assigned serological grouping in Tissue Antigens (2009) 73:95-170 and the serological grouping of the sequence-defined allele.

⁴For several DRB alleles 1st and/or 3rd exon(s) and beyond, as well as intron nucleotide sequences, are not available. In these instances it is not known whether some of the primers of the SSP set are completely matched with the target sequences or not. We assume that unknown sequences in the first hyperpolymorphic region of the second exon of DRB alleles are conserved within allelic groups and that unknown sequences of codons 87 to 92 are identical with the DRB1*01:01 consensus sequence.

⁵Due to sharing of sequence motifs in codon 38, DRB3*01:14 will also be amplified in primer mixes 77, 78 and 89 in addition to primer mix 93.

⁶HLA-specific PCR products shorter than 125 base pairs have a lower intensity and are less sharp than longer PCR products.

⁷Individual alleles can give rise to two differently sized specific PCR fragments in primer mixes 73, 75, 77 to 83, 85, 86, 88 and 90 to 93.

⁸Primer mix 73, 80, 87, 88 and 92 to 94 may have a tendency to giving rise to primer oligomer formation.

⁹Primer mix 91 has a tendency of primer oligomer formation and also has an intense primer cloud due to the high number of primers present in the primer mix.

¹⁰The DRB4*01:03:01:02N allele is amplified by primer mix 94, whereas the DRB4*02:01N and DRB4*03:01N null alleles are not amplified by this primer mix.

¹¹Primer mix 96 contains a negative control, which will amplify more than 95% of HLA amplicons as well as the amplicons generated by control primer pairs. PCR product sizes range from 75 to 200 base pairs. The PCR product generated by the control primer pair is 430 base pairs.

‘w’, might be weakly amplified.

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INTERPRETATION TABLE																																																								
HLA-A low resolution SSP typing																																																								
Amplification patterns of the A*01:01 to A*80:03 alleles																																																								
		Well ⁶																																																						
		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24																															
Length of spec. PCR product(s)		225	145	120																																																				
					415	365	255	215	175																																															
Length of int. pos. control ¹		800	800	1070	800	1070	800	1070	800	800	800	1070	800	1070	1070	1070	1070	1070	1070	800	800	800	800	800	1070																															
5'-primer(s) ²		5'-ATA ^{3'} 363	5'-AgT ^{3'} 123	5'-CCT ^{3'} 103	5'-CTT ^{3'} 98	5'-gCT ^{3'} 78	5'-ATA ^{3'} 363	5'-CTA ^{3'} 98	5'-gCT ^{3'} 317	5'-GCC ^{3'} 144	5'-gTT ^{3'} 368	5'-gCA ^{3'} 176	5'-gTT ^{3'} 368	5'-CTC ^{3'} 98	5'-ACA ^{3'} 102	5'-CTA ^{3'} 98	5'-ACg ^{3'} 266	5'-AAC ^{3'} 261	5'-AAC ^{3'} 261	5'-CTA ^{3'} 98	5'-gga ^{3'} 302	5'-Cgg ^{3'} 301	5'-ggt ^{3'} 415	5'-CCT ^{3'} 103	5'-gCT ^{3'} 423	5'-CTT ^{3'} 98	5'-gCA ^{3'} 219	5'-CAC ^{3'} 98	5'-gCA ^{3'} 362	5'-gAA ^{3'} 203	5'-CCg ^{3'} 355	5'-CTT ^{3'} 41	5'-gAA ^{3'} 203	5'-TTT ^{3'} 180	5'-CAC ^{3'} 98	5'-CTT ^{3'} 41	5'-gga ^{3'} 341	5'-gga ^{3'} 302	5'-CCT ^{3'} 2ndI	5'-CCA ^{3'} 106	5'-TCT ^{3'} 78	5'-AAC ^{3'} 261	5'-TCg ^{3'} 28	5'-TgC ^{3'} 527	5'-TCT ^{3'} 78	5'-AAC ^{3'} 261	5'-gCA ^{3'} 176	5'-ggC ^{3'} 341	5'-ggC ^{3'} 341							
3'-primer(s) ³		5'-AgA ^{3'} 545	5'-TCT ^{3'} 203	5'-gTg ^{3'} 292	5'-gga ^{3'} 240	5'-CCT ^{3'} 527	5'-CCA ^{3'} 527	5'-CCg ^{3'} 559	5'-CTg ^{3'} 256	5'-CAA ^{3'} 368	5'-CCC ^{3'} 265	5'-ggt ^{3'} 534	5'-ACA ^{3'} 270	5'-TCT ^{3'} 539	5'-CTT ^{3'} 502	5'-gTT ^{3'} 259	5'-CCA ^{3'} 538	5'-gTT ^{3'} 259	5'-ggC ^{3'} 302	5'-TCg ^{3'} 299	5'-ggg ^{3'} 521	5'-CgT ^{3'} 341	5'-Tgt ^{3'} 506	5'-gCA ^{3'} 257	5'-gAC ^{3'} 282	5'-gAC ^{3'} 282	5'-gTC ^{3'} 418	5'-gCA ^{3'} 257	5'-TCA ^{3'} 180	5'-CCA ^{3'} 526	5'-TCA ^{3'} 411	5'-CCA ^{3'} 299	5'-TAC ^{3'} 369	5'-ATA ^{3'} 363	5'-gCA ^{3'} 238	5'-CCT ^{3'} 238	5'-CCA ^{3'} 555	5'-gga ^{3'} 317	5'-CAA ^{3'} 290	5'-gTT ^{3'} 259	5'-CTC ^{3'} 256	5'-CCC ^{3'} 256	5'-gAg ^{3'} 397	5'-gAC ^{3'} 282	5'-gAC ^{3'} 282	5'-gAC ^{3'} 282	5'-CAT ^{3'} 524	5'-gAC ^{3'} 355	5'-ggt ^{3'} 97	5'-gAC ^{3'} 282	5'-gAC ^{3'} 282	5'-CCC ^{3'} 265	5'-TCT ^{3'} 299	5'-gTT ^{3'} 299	5'-gTT ^{3'} 292	5'-gTC ^{3'} 418
Well No.		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24																															



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Well No.		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24
HLA-A allele⁴	ser⁵																								
*01:01:01:01-01:01:22, 01:01:24-01:01:47, 01:01:49- 01:01:55, 01:02:01:04N, 01:06-01:07, 01:09-01:11N, 01:16N-01:18N, 01:20, 01:22N-01:27N, 01:29, 01:31N-01:33, 01:35-01:42, 01:44-01:50, 01:52N-01:78, 01:80-01:94, 01:96-01:98, 01:100-01:120, 01:122- 01:125, 01:127-01:130	A1, Null, -	1			4																				
*01:01:23, 01:01:48, 01:08, 01:14-01:15N, 01:30, 01:79, 01:99	A1, Null, -	1																							
*01:01:56	-	1			4									w											
*01:12, 01:19	A1, -	1		3																					
*01:13	A1	1			4							11		13		15									
*01:21, 01:126	A1, -	1		3	4																				
*01:28	-	1			4							11				15									
*01:43	-	1			4							10													
*01:51	-	1			4				8		10														
*01:95	-	1			4														17						
*01:121	-	1			4															19					
*02:01:01:01-02:01:15, 02:01:17-02:01:19, 02:01:21- 02:01:81, 02:01:83-02:16, 02:17:03-02:22:02, 02:24:01- 02:33, 02:36-02:45, 02:47, 02:49-02:54, 02:57-02:61, 02:63-02:64, 02:66-02:69, 02:71-02:77, 02:79:01- 02:97:02, 02:99, 02:101:01- 02:102, 02:104-02:128, 02:130-02:134, 02:136- 02:148, 02:150-02:168, 02:170-02:236, 02:238- 02:242, 02:244-02:308, 02:310-02:337, 02:339- 02:406, 02:408-02:414, 02:416-02:417	A2, Low A2, A203/A2 A210/A2 A2/blank, Null, -		2																						
*02:17:01-02:17:02	A2		2					w																	
*02:34-02:35:01, 02:35:03, 02:56:01-02:56:02, 02:62, 02:103	A2		2											13						20		22			
*02:35:02	A2													13						20		22			
*02:46, 02:70	A2		2																	20		22			
*02:48, 02:129	A2, -																			20		22			
*02:55	A2/A28		2						8													21		23	
*02:65, 02:407	A2/A19, -		2																	19					
*02:78	-		w		4															20		22			
*02:135	-		2											13											24
*02:149	-		2																			21			
*02:169	-		2		4																				
*02:237	-		2												14		16								
*02:243	-		2																18			21			
*02:309	-		2										12		14							21			24
*02:338	-		2	3																					
Well No.		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24

101.701-24/06– including *Taq* pol., IFU-01
 101.701-24u/06u – without *Taq* pol., IFU-02

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 “Instructions for Use” (IFU)

Lot No.: **63S**

Lot-specific information

Well No.		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24
HLA-A allele ⁴	ser ⁵																								
*03:01:01:01-03:01:18, 03:01:20-03:01:22, 03:01:24- 03:07, 03:09-03:11N, 03:13- 03:14, 03:16-03:17:02, 03:20- 03:23:02, 03:25-03:29, 03:31, 03:33-03:35, 03:37- 03:40, 03:42, 03:44-03:49, 03:51-03:56, 03:58, 03:60- 03:62, 03:64-03:71, 03:73- 03:74, 03:76-03:81, 03:83- 03:87, 03:90-03:94, 03:96- 03:106, 03:109-03:110, 03:112-03:134, 03:136- 03:141, 03:143-03:151, 03:153-03:166	A3, A3/blank, Null, -			3										13											
*03:01:19	-			3									12	13											24
*03:01:23, 03:08, 03:32, 03:36N, 03:57, 03:59, 03:72, 03:89, 03:107-03:108, 03:111, 03:142	A3, Null, -			3																					
*03:12	A3			3	4																				
*03:15, 03:19, 03:30	A3			3		5									13										
*03:18, 03:135	-	1			4										13										
*03:24, 03:50	A3, -			3					8						13										
*03:41	-			3																					23
*03:43, 03:82	-			3											13	15		17							
*03:63	-			3								11			13										23
*03:75	-														13										23
*03:88, 11:130 ⁷	-			3	4							11													23
*03:95	-														13	14	16								
*03:152, 24:92 ⁸	-			3		5																			
*11:01:01-11:09, 11:12- 11:16, 11:18-11:24:02, 11:26- 11:27, 11:29-11:39, 11:41- 11:52Q, 11:54-11:59, 11:61- 11:93, 11:95-11:111, 11:114- 11:129, 11:131-11:138, 11:141-11:142	A11, Null, -				4								11												
*11:10	A11				4				8			11													
*11:11	-				4							11	12												
*11:17, 11:40	-				4						10	11													
*11:25, 11:60	A11, -				3	4									11										
*11:94, 11:112	-	1			4										11										
*11:113	-				4										11		15								
*11:139	-				4	5		7				11													
*23:01:01-23:13, 23:15- 23:56, 23:58	A23, Null, -					5	6																		
*23:14:01-23:14:02, 24:24, 24:71 ⁹	A23, A9, A24, -					5	6	7																	
*23:57	-					5																			21
Well No.		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24

101.701-24/06– including *Taq* pol., IFU-01
 101.701-24u/06u – without *Taq* pol., IFU-02

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Lot No.: **63S**

Lot-specific information

Well No.		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24
HLA-A allele⁴	ser⁵																								
*24:02:01:01-24:11N, 24:13:01-24:13:02, 24:17, 24:20-24:23, 24:25-24:43, 24:45N-24:50, 24:54-24:56, 24:58-24:63, 24:66-24:70, 24:72-24:81, 24:83N-24:91, 24:93, 24:95-24:113, 24:115- 24:137, 24:139-24:187, 24:189-24:203, 24:205- 24:210, 24:212, 24:214- 24:221, 24:223-24:227, 24:229-24:232N	A24, Low A24, A2403/A 24, A9, A24/A9, Null, -					5		7																	
*24:14-24:15, 24:51-24:53, 24:57, 24:64, 24:94, 24:114, 24:138, 24:188, 24:222N, 24:228, C*04:01:03 ¹⁰	A24, Cw4, Null, -					5																			
*24:18, 24:204, 24:213	A24/A3, -					5		7																23	
*24:19, 24:44	A9					5		7				11													
*24:82	-					5		7														21			
*25:01:01-25:04, 25:07- 25:12N, 25:14-25:16, 25:18- 25:22	A25, Null, -								8	9				13											
*25:05	A25								8	9		12	13							20					
*25:06	A25								8	9		12													
*25:13	-								8	9			13												24
*25:17	-									9			13												
*26:01:01-26:01:20, 26:01:22- 26:01:27, 26:08, 26:10- 26:15, 26:17-26:18, 26:20, 26:23-26:28, 26:31-26:33, 26:35-26:43:02, 26:45-26:48, 26:50-26:53, 26:55-26:63, 26:66-26:71N, 26:74-26:77, 26:79-26:85	A26, A10, Null, -								8		10			13											
*26:01:21, 26:04, 26:34, 26:73	A26, -								8		10														
*26:02, 26:29, 26:49	A26, -								8		10			w											
*26:03:01-26:03:02, 26:06, 26:21	A26, -								8			11	13											23	
*26:05	A26								8				13											23	
*26:07:01-26:07:02, 26:64	A26, -										10		13												
*26:09	A26								8		10	12													
*26:16	A26								7		10		13												
*26:19	-				4						10		13	14											
*26:22	A26								8		10		13	14							21				
*26:30	A26								8				13											23	24
*26:54	-								8		10	12	13							20					
*26:65	-								8		10		13												24
*26:72	-				4						10		13												
*26:78	-								8			11												23	
*29:01:01:01-29:06, 29:08N- 29:12, 29:15-29:27, 29:29- 29:38, 29:40-29:47, 29:50- 29:53	A29, Null, -														14										
*29:07, 29:49	A29, -					5	6								14										
*29:13, 29:39	-														14			17							
*29:14	-														14		16								
*29:28	-								8						14										
*29:48	-														14					18					
Well No.		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24

101.701-24/06– including *Taq* pol., IFU-01
 101.701-24u/06u – without *Taq* pol., IFU-02

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Lot No.: 63S

Lot-specific information

Well No.		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24
HLA-A allele ⁴	ser ⁵																								
*30:01:01-30:04:02, 30:06-30:07, 30:09-30:20, 30:22-30:54, 30:56-30:74	A30, Null, -															15									
*30:08	A30				4											15									
*30:55	-													13	15										
*31:01:02-31:02, 31:05-31:07, 31:09-31:28, 31:30-31:34, 31:36-31:40, 31:42-31:61, 31:63-31:74	A31, Null, -																16								
*31:03	A31											12			14	16									
*31:04	A31											12			14	16									24
*31:08, 33:53 ¹¹	A31/A24, -					5										16									
*31:29	-					5	6									16									
*31:35	-															15	16	17							
*31:41	-																16					21			
*31:62	-																16						22		
*32:01:01-32:01:13, 32:01:15-32:02, 32:07-32:14, 32:16-32:37, 32:39-32:41, 32:43-32:57	A32, Null, -									9								17							
*32:01:14, 32:03, 32:38, 74:07 ¹²	A32, A74, -																	17							
*32:04	A32/A3			3						9															
*32:05	A32					5										16	17								
*32:06	A32									9								17				21			
*32:15	A32								8	9								17	18						
*32:42	-									9					14			17							
*33:01:01-33:01:07, 33:03:01-33:12, 33:14-33:18:02, 33:20-33:21, 33:23, 33:25-33:37, 33:39-33:47, 33:49-33:50, 33:52, 33:54-33:68	A33, -																		18						
*33:13, 33:48	-									10								18							
*33:19	-					5	7											18							
*33:22	-																	18				21			
*33:24	-																	18						23	
*33:51	-								8									18							
*34:01:01-34:01:02, 34:05-34:06, 34:11	A34, A10, -								8			11	12												
*34:02:01-34:03, 34:07, 34:10N	A34, Null, -			3					8			11	12												
*34:04	A34			3					8			11	12		14										
*34:08	A34			3					8			11	12	13											
*34:09	-			3					8				12												24
*36:01, 36:03, 36:05	A36, -	1																					22		
*36:02	A36	1	3																				22	23	
*36:04	A36	1			4																		22		
*43:01	A43									10		12	13												
*66:01, 66:04-66:05, 66:07-66:08, 66:11, 66:13-66:15, 66:17-66:19	A66, A26, -								8			11	13												
*66:02-66:03, 66:16	A66, A10, -								8			12													24
*66:06	A66								8			11	13									21			
*66:09	-								8			11	13	14								21			
*66:10	-								8			11	w												
*66:12	-								8				13												24
*66:15	-								8				13												
Well No.		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24

101.701-24/06– including *Taq* pol., IFU-01
101.701-24u/06u – without *Taq* pol., IFU-02

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Lot No.: **63S**

Lot-specific information

Well No.		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24
HLA-A allele ⁴	ser ⁵																								
*68:01:01:01-68:04, 68:06-68:12, 68:13:02-68:14, 68:16-68:19, 68:21:01-68:24, 68:26-68:28, 68:30-68:44, 68:46-68:65, 68:67-68:70, 68:72-68:83, 68:85-68:100	A68, A28, Null, -								8												20				
*68:05, 68:15, 68:20	A68								8												20			23	
*68:13:01, 68:66	A68, -				4				8												20				
*68:25	A68								8												19	20			
*68:29	A68								8											18	20	21			
*68:45	-							7	8												20				
*68:71	-								8					13							20				
*68:84	-								8		10										20				
*69:01	A69								8														21		
*74:01-74:03, 74:05-74:06, 74:08-74:12N, 74:14N-74:17	A74, Null, -																				19				
*74:04	A74																			18	19				
*74:13	-													13							19				
*80:01:01:01-80:01:01:02, 80:03	A80, -								6															23	
*80:02	-								6			11													
B*07:81, B*08:52, B*18:67, B*38:41, B*53:05, B*53:16	B53, -												9												
B*18:27	-								6																
C*03:174, C*08:69, C*16:56	-				4																				
Well No.		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24

¹The internal positive control primer pairs amplify segments of the human growth hormone gene. The two different control primer pairs give rise to either an internal positive control band of 1070 base pairs, for most wells, or a band of 800 base pairs, for some wells.

Well number 1 contains the primer pair giving rise to the shorter, 800 bp, internal positive control band in order to help in the correct orientation of the HLA-A low resolution SSP typing. In addition, wells number 2, 4, 6, 8, 9, 10, 12, 14 and 19 to 23 contain the primer pair giving rise to the shorter, 800 bp, internal positive control band.

²The nucleotide position, in the 1st, 2nd or 3rd exon or the 2nd intron, matching the specificity-determining 3'-end of the primer is given. Nucleotide numbering as on the www.ebi.ac.uk, [imgt, hla](http://imgt.hla) web site. The sequence of the 3 terminal nucleotides of the primer is given.

³The nucleotide position, in the 2nd or 3rd exon, matching the specificity-determining 3'-end of the primer is given in the anti-sense direction. Nucleotide numbering as on the www.ebi.ac.uk, [imgt, hla](http://imgt.hla) web site. The sequence of the 3 terminal nucleotides of the primer is given.

⁴The sequence of the A*0105N has been shown to be identical to A*01:04N.

The A*01:34N allele has been renamed A*01:01:38L

The A*020116 allele has been renamed to A*02:134.

The A*020120 has been renamed to A*02:01:18.

The sequence of the A*02:01:82 allele has been shown to be identical to A*02:01:84.

The sequence of the A*0223 allele has been shown to be identical to A*02:22:01.

The sequence of the A*0298 allele has been shown to be identical to A*02:96.

The A*02:100 allele has never been assigned.

The A*1128 allele has been renamed to A*11:15:02.

The A*11:53 allele has been shown to be identical to the corrected A*11:02:01.

The sequence of the A*2401 allele has been shown to be in error.

The sequence of the A*2412 allele has been shown to be identical to A*24:08.

The A*2416 allele has been renamed to A*31:08.

The A*2465 allele has been renamed to A*24:13:02.

The A*24:211 allele has been renamed to A*24:135:02.

The A*26:44 allele has been renamed to A*26:43:02.

101.701-24/06– including *Taq* pol., IFU-01
101.701-24u/06u – without *Taq* pol., IFU-02

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Lot No.: 63S**Lot-specific information**

The sequence of the A*3005 allele has been shown to be identical to A*30:04.

The A*3021 allele has been renamed to A*30:11:02.

The sequence of the A*31011 allele has been shown to be identical to A*31:01:02.

The sequence of the A*3302 allele has been shown to be identical to A*33:03:01.

The sequence of the A*33:38 allele has been shown to be identical to A*33:44.

⁵The serological reactivity of all HLA-A alleles is not known. In this table we use the expert-assigned serological grouping in Tissue Antigens (2009) 73:95-170 and the serological grouping of the sequence-defined allele.

⁶The primer pairs in wells 1, 2, 11, 14 and 15 will in many samples give rise to two or three HLA-specific PCR fragments.

⁷The A*03:88 and the A*11:130 alleles will give rise to identical amplification patterns. These two alleles can be separated by the respective high resolution SSP primer sets.

⁸The A*03:152 and the A*24:92 alleles will give rise to identical amplification patterns. These two alleles can be separated by the respective high resolution SSP primer sets.

⁹The A*23:14:01-23:14:02 and the A*24:24 and 24:71 alleles will give rise to identical amplification patterns. These alleles can be separated by the respective high resolution SSP primer sets.

¹⁰The 24:14-24:15, 24:51-24:53, 24:57, 24:64, 24:94, 24:114, 24:138, 24:188, 24:222N, 24:228 and the C*04:01:03 alleles may be distinguished by the different sizes of the specific PCR products generated by primer mix 5.

¹¹The A*31:08 and A*33:53 alleles will give rise to identical amplification patterns. These two alleles can be separated by the respective high resolution SSP primer sets.

¹²The A*32:01:14, 32:03, 32:38 and the A*74:07 alleles will give rise to identical amplification patterns. These alleles can be separated by the respective high resolution SSP primer sets.

‘w’, may be weakly amplified.

101.701-24/06– including *Taq* pol., IFU-01
 101.701-24u/06u – without *Taq* pol., IFU-02

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Lot No.: 63S

Lot-specific information

INTERPRETATION TABLE																																															
HLA-B low resolution SSP																																															
Amplification patterns of the B*07:02 to B*83:01 alleles																																															
	Well																																														
	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48																							
Length of spec. PCR product(s)	110	215	140	130	185	180	290	165	165	180	105	280	195	105	115	80	150	140	60	210	170	110	395	160																							
Length of int. pos. control ¹	800	1070	1070	800	800	800	1070	1070	1070	800	1070	1070	1070	1070	1070	1070	800	1070	1070	800	800	1070	1070	1070																							
5'-primer(s) ²	5'-TgA ³ 527	5'-TCg ³ 97	5'-ggC ³ 209	5'-CCg ³ 103	5'-CCT ³ 103	5'-CCg ³ 103	5'-ggA ³ 45	5'-ggA ³ 45	5'-ggA ³ 45	5'-TTA ³ 420	5'-AgA ³ 206	5'-gTC ³ 419	5'-TCT ³ 142	5'-ggA ³ 45	5'-Cgg ³ 161	5'-gCT ³ 167	5'-TCA ³ 355	5'-gAC ³ 206	5'-ggA ³ 45	5'-TCT ³ 142	5'-ggC ³ 409	5'-gAA ³ 246	5'-ggC ³ 44	5'-ggC ³ 44																							
3'-primer(s) ³	5'-gCT ³ 605	5'-TgA ³ 272	5'-gCC ³ 312	5'-CgT ³ 193	5'-TAT ³ 246	5'-TAT ³ 246	5'-TgG ³ 165	5'-TCC ³ 266	5'-TCC ³ 266	5'-CTC ³ 559	5'-TgG ³ 272	5'-TAT ³ 3rd	5'-gTC ³ 301	5'-ATC ³ 309	5'-TCT ³ 234	5'-TCT ³ 204	5'-gCT ³ 463	5'-gGC ³ 302	5'-gTT ³ 259	5'-ggg ³ 311	5'-ggT ³ 544	5'-gga ³ 317	5'-TgC ³ 272	5'-ggC ³ 302																							
Well No.	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48																							



101.701-24/06– including *Taq* pol., IFU-01
 101.701-24u/06u – without *Taq* pol., IFU-02

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Lot No.: **63S**

Lot-specific information

INTERPRETATION TABLE																																																																									
HLA-B low resolution SSP																																																																									
Amplification patterns of the B*07:02 to B*83:01 alleles																																																																									
Well																																																																									
49	50	51	52	53	54	55	56	57	58	59	60	61	62	63	64	65	66	67	68	69	70	71	72																																																		
180	290	105	325	80	215	130	90	90	145	120	430	145	300	160	180	180	90	95	115	360	350	285	Length of spec. PCR product(s)																																																		
1070	1070	1070	800	1070	800	800	1070	1070	1070	800	1070	1070	1070	1070	1070	1070	800	1070	1070	1070	1070	800	Length of int. pos. control ¹																																																		
5'-Agg 3'	5'-ggc 3'	5'-gac 3'	5'-cag 3'	5'-TCA 3'	5'-Tgg 3'	5'-ggc 3'	5'-ggt 3'	5'-Agc 3'	5'-gaa 3'	5'-Tgg 3'	5'-cag 3'	5'-gaa 3'	5'-cag 3'	5'-Agg 3'	5'-TTA 3'	5'-TTA 3'	5'-ggg 3'	5'-TAC 3'	5'-Tga 3'	5'-Tga 3'	5'-cag 3'	5'-Agc 3'	5'-primer(s) ²																																																		
363	209		1st I	418	357	209	368	363	206					418	420		209	369	463			363	3'-primer(s) ³																																																		
499	193	603	282	538	309	299	282	259	309	435	309	311	259	175	311	559	256	256	272	317	311	603																																																			
5'-ggA 3'	5'-CgT 3'	5'-gTg 3'	5'-gCC 3'	5'-gTC 3'	5'-ATC 3'	5'-TCA 3'	5'-gCC 3'	5'-gTT 3'	5'-ATC 3'	5'-TCT 3'	5'-ATC 3'	5'-ggT 3'	5'-CTC 3'	5'-CCg 3'	5'-ggT 3'	5'-Cag 3'	5'-CCC 3'	5'-CTC 3'	5'-TgC 3'	5'-ggA 3'	5'-ggT 3'	5'-gTg 3'																																																			
387				572				499	262							559	263	420				572																																																			
5'-TCg 3'	5'-TgT 3'	5'-gCT 3'		5'-gCg 3'	5'-gTC 3'	5'-gTg 3'	5'-gTC 3'	5'-gGA 3'	5'-TCg 3'	5'-CCT 3'						5'-CgT 3'	5'-gTT 3'	5'-gCT 3'	5'-CCA 3'			5'-gCT 3'																																																			
Well No.																																																																									



101.701-24/06– including *Taq* pol., IFU-01
 101.701-24u/06u – without *Taq* pol., IFU-02

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Lot No.: **63S**

Lot-specific information

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HLA-B allele ⁴	ser. ⁵																									
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*15:03:03	B72							31	32			35	36							43					
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*15:08, 15:11:01-15:11:03, 15:11:05, 15:15, 15:148, 15:191, 15:209N, 15:215	B75/B62, B75/62, Null, -							31					36							43					
*15:09	B70								32	33					38					43					
*15:10:01, 15:37, 15:90, 15:99, 15:133, 15:229, 15:252	B71, B70, -								32						38					43					
*15:10:02	B71							31	32						38					43					
*15:11:04	B75												36							43					
*15:12, 15:14, 15:19, 15:270	B76, -							31					36	37						43					
*15:13:01-15:13:02	B77, -							31					36		38			41		43					
*15:16:01-15:16:02, 15:67, 15:95, 15:254	B63, -										33		36		38					43					
*15:16:03	-										33		36		38					43					
*15:17:01:01-15:17:02, 15:162, 15:168, 15:177, 15:196, 15:208, 15:216, 15:273	B63, -							31		33					38					43					
*15:18:01-15:18:02, 15:18:04- 15:18:05, 15:51-15:52, 15:72, 15:93, 15:108, 15:114, 15:119, 15:134, 15:153, 15:176, 15:197- 15:198, 15:200, 15:221, 15:226N, 15:238, 15:263, 15:275	B71, B70, Null, -								32				36		38					43					
*15:18:03	B71								32				36		38					43					
*15:20	B62							31					36					41		43					
*15:21, 15:44	B75							31					36		38			41		43					
*15:23, 15:115	B70/B5/ blank								32				36		38					43					
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*15:25:01-15:25:03, 15:204, 15:240, 15:250, 15:271	B62, -							31					36					41		43					
*15:29	B70								32				36							43					
*15:30, 15:58, 15:63, 15:269	B62, -							31												43					
*15:31	B75							31					36							43					
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													62							69		71		B62, -	*15:07:01-15:07:02, 15:126, 15:207	
								57												69		71		B75/B62, B75/62, Null, -	*15:08, 15:11:01-15:11:03, 15:11:05, 15:15, 15:148, 15:191, 15:209N, 15:215	
																						71		B70	*15:09	
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								57												69		71		B75	*15:11:04	
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50										59											70				-	*15:16:03
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50													62									71		B62	*15:20	
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													62									71			B62, -	*15:25:01-15:25:03, 15:204, 15:240, 15:250, 15:271
																						71			B70	*15:29
													62							69		71			B62, -	*15:30, 15:58, 15:63, 15:269
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*15:36	-			w				31					36					41		43					
*15:42	B15							31												43					
*15:43, 15:256	B15, -							31					36							43					
*15:45	B62			27				31												43					
*15:46	-				28			31	32				36							43					
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*15:53, 15:212	-				28				32				36							43					
*15:54	B72								32			35	36							43					
*15:55	B15			27				31					36							43					
*15:57	B62							31					36							43					
*15:62	-								32			35	36					41		43					
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*15:66	B62							31					36		38					43					
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*15:69	B72								32			35	36							43		45			
*15:73	B62							31												43					
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*15:76	-							31					36							43					
*15:77	B62						30	31										41		43					
*15:80	B70								32				36		38			41		43					
*15:83	B62							31	32											43					
*15:85	B62							31					36					41		43					
*15:86	-							31												43					
*15:89	B77			w				31					36					41		43					
*15:91, 15:131	-								32			35	36	37						43					
*15:101	-							31					36												
*15:106	-				28			31	32				36					41		43					
*15:116	B62							31					36							43					
*15:124	B71								32				36		38					43					
*15:137	-							31												43					
*15:138	-	25						31					36							43					
*15:142	-		26					31					36							43					
*15:143	-							31	32				36							43					
*15:144	-							31					36					41		43					
*15:154, 15:165	-							31					36					41		43					
*15:161	-								32				36	37	38					43					
*15:180	-		26										36												
*15:186	-								32				36		38					43		45			
*15:189	-						30	31					36		38					43					
*15:194	-							31					36					41		43					
*15:202, 15:239	-							31					36						42	43					
*15:222	-									33			36		38					43					
*15:224	-							31												43					
*15:230	-	25						31		33					38					43					
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													62								70			-		*15:36
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												61	62							69	71			-		*15:53, 15:212
													62							69	71			B72		*15:54
								57														71		B15		*15:55
					w								62							69	71			B62		*15:57
													62									71		-		*15:62
																						71		B71, -		*15:64:01-15:64:02
													62							69	71			B62		*15:66
													62							69	71			-		*15:68
													62									71		B72		*15:69
													62			65	67			69	71			B62		*15:73
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			52					w												69	71			-		*15:76
													62							69	71			B62		*15:77
																						71		B70		*15:80
					54								62									71		B62		*15:83
	50												62							69	71			B62		*15:85
													62	64								71		-		*15:86
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49													62									71		B62		*15:116
49																						71		B71		*15:124
									w				62							69	71			-		*15:137
													62									71		-		*15:138
													62							69	71			-		*15:142
												61								69	71			-		*15:143
								57												69	71			-		*15:144
													62							69	71			-		*15:154, 15:165
																						71		-		*15:161
																				69	71			-		*15:180
																						71		-		*15:186
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	50							57														71		-		*15:194
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																					70			-		*15:230
													62							69	71			-		*15:233
													62							69	71			-		*15:236
49	50	51	52	53	54	55	56	57	58	59	60	61	62	63	64	65	66	67	68	69	70	71	72			Well No.

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HLA-B allele ⁴	ser. ⁵																								
*15:241	-	25						31					36							43					
*15:243	-								32	33					38					43					
*15:253	-								32			35								43					
*15:255	-								32				36												
*15:259	-							31	32			35	36							43					
*15:268	-							31		33			36		38					43					
*18:01:01:01-18:03, 18:05-18:08, 18:10-18:11, 18:13-18:15, 18:17N-18:18, 18:20-18:21, 18:23N-18:25, 18:27-18:28, 18:30-18:36, 18:38-18:40, 18:42-18:43, 18:45-18:47, 18:50-18:53, 18:55, 18:57-18:60, 18:62-18:65, 18:68, 18:70-18:71, 18:73-18:78, 18:80-18:89	B18, B18/blank, Null, -												36			39			42						
*18:04	B18												36		39				42						
*18:09	B18												36		39										
*18:12	B18												36		39				42						
*18:19	B18												36		39				42						
*18:22, 18:69	B18, -												36		39			41	42						
*18:26, 18:41, 18:61	B18, -														39				42						
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*18:44:01-18:44:02	-				28								36		39				42						
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													62							69	71			-	*15:241	
													62									71			-	*15:243
													62									71			-	*15:253
			52										62									71			-	*15:255
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*27:03-27:05:15, 27:05:17-27:05:19, 27:05:21-27:06, 27:09-27:10, 27:13, 27:17, 27:20, 27:27, 27:31, 27:35-27:37, 27:45-27:46, 27:48-27:51, 27:54-27:56, 27:58, 27:60-27:61, 27:64N, 27:66N, 27:68-27:69, 27:72-27:74, 27:78-27:80, 27:82, 27:84-27:88, 27:90:01-27:91, 27:93-27:94N, 27:96-27:101, 27:103-27:105	B27, Null, -					29											40									
*27:05:16, 27:05:20, 27:07:01-27:07:03, 27:11, 27:15, 27:21, 27:28, 27:32, 27:34, 27:38, 27:43, 27:47, 27:63, 27:70-27:71, 27:76	B27, -																40									
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*27:12	-					29											40									
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*27:19	B27																40	41								
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*27:24	B27																40									
*27:25	B27																40									
*27:29	B27					29						35					40									
*27:30	B27																40	41								
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*27:41	-					29						36					40									
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*27:62	-																40									
*27:75	-					29																				
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HLA-B allele ⁴	ser. ⁵																									
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																Well No.									
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*40:05	B4005/B50				27																					
*40:06:01:01-40:06:04, 40:06:06-40:06:07, 40:70	B61, -																								48	
*40:08	B61/blank																									
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 101.701-24u/06u – without *Taq* pol., IFU-02

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																								-	*39:01:15
													62									71		B3902/B39	*39:02:01, 39:08
													62									71		B3902/B39, -	*39:02:02, 39:13:01-39:13:02, 39:23, 39:49
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																						71		B39, -	*39:10:01-39:10:02, 39:16, 39:20
														64			67					71		B39	*39:17
																			69			71		B39	*39:18
																			68			71		B39	*39:19:01
																			68			71		B39	*39:19:02
													62									71		B39	*39:22
																						71		-	*39:24:02
																				69		71		-	*39:36
																						71		B39	*39:39:01
																						71		-	*39:39:02
																						71		B39	*39:42
																						71		-	*39:43
																						71		-	*39:58
														64								71		-	*39:63
												61										71		-	*39:69
49												61	62									71		B60, Null, -	*40:01:01-40:01:06, 40:01:08-40:01:10, 40:01:12-40:01:17, 40:01:19-40:01:29, 40:07, 40:51, 40:66, 40:73, 40:79, 40:124:01, 40:139-40:140, 40:146-40:147, 40:150, 40:152-40:153, 40:155N, 40:172, 40:186
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49												61	62	64								71		-	*40:01:11
50												61	62									71		B61, B61/B41, Null, -	*40:02:01-40:02:17, 40:04, 40:06:05, 40:39, 40:89, 40:94, 40:97, 40:122, 40:142N-40:144N, 40:214, 40:229
50												61	62									71		B61	*40:03, 40:20
50												61	62									71		B4005/B50	*40:05
50												61	62									71		B61, -	*40:06:01:01-40:06:04, 40:06:06-40:06:07, 40:70
50												61										71		B61/blank	*40:08

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HLA-B allele ⁴	ser. ⁵																								
*40:09, 40:11:01-40:11:02, 40:18, 40:24, 40:27:01-40:27:02, 40:29, 40:35, 40:37, 40:50, 40:56-40:57, 40:64, 40:78, 40:82, 40:85, 40:90-40:91, 40:99, 40:104, 40:107, 40:111, 40:115, 40:119-40:120, 40:133Q, 40:145, 40:169, 40:173, 40:176, 40:180-40:181, 40:189, 40:200, 40:202-40:203, 40:205-40:206, 40:211, 40:220, 40:224-40:226	B61, -																								?
*40:10:01	B60				28																				
*40:10:02, 40:135	-				28																				
*40:12	B60/B48								32			35								43					
*40:13	-																								
*40:14:01-40:14:03, 40:121, 40:129, 40:164, 40:192, 40:197, 40:219, 40:233, 40:237	B60, -				28																				?
*40:15, 40:32	B40, -	25			28																				?
*40:16	B61	25			28																				48
*40:19	B61																								
*40:21	B40/B15																								?
*40:22N, 40:33, 40:36, 40:42- 40:43, 40:49, 40:54-40:55, 40:61- 40:63, 40:65, 40:67, 40:81, 40:84, 40:87:01-40:88, 40:92, 40:100-40:102, 40:108, 40:112- 40:114, 40:116, 40:118N, 40:123, 40:124:02-40:126, 40:128, 40:130, 40:134, 40:141, 40:151, 40:154, 40:156, 40:163, 40:168, 40:171, 40:175, 40:179, 40:182, 40:187, 40:191, 40:193- 40:196, 40:199, 40:204, 40:207, 40:212-40:213, 40:216N-40:218, 40:221, 40:223, 40:227-40:228, 40:234-40:236, 40:238	B60, Null, -				28																				?
*40:23	B40	25			28																				48
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*40:26	B21									33															?
*40:28	-									33								41							?
*40:30, 40:34, 40:160:01- 40:160:02	B60, -				28																				?
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												61	62									71		B61, -	*40:09, 40:11:01-40:11:02, 40:18, 40:24, 40:27:01-40:27:02, 40:29, 40:35, 40:37, 40:50, 40:56-40:57, 40:64, 40:78, 40:82, 40:85, 40:90-40:91, 40:99, 40:104, 40:107, 40:111, 40:115, 40:119-40:120, 40:133Q, 40:145, 40:169, 40:173, 40:176, 40:180-40:181, 40:189, 40:200, 40:202-40:203, 40:205-40:206, 40:211, 40:220, 40:224-40:226
49												61	62									71		B60	*40:10:01
49	?											61	62									71		-	*40:10:02, 40:135
49													62										71	B60/B48	*40:12
	50								58	60			62									70		-	*40:13
												61	62										71	B60, -	*40:14:01-40:14:03, 40:121, 40:129, 40:164, 40:192, 40:197, 40:219, 40:233, 40:237
												61	62									71	72	B40, -	*40:15, 40:32
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									58	60			62									70		B61	*40:19
49													62										71	B40/B15	*40:21
49	?											61	62										71	B60, Null, -	*40:22N, 40:33, 40:36, 40:42-40:43, 40:49, 40:54-40:55, 40:61-40:63, 40:65, 40:67, 40:81, 40:84, 40:87:01-40:88, 40:92, 40:100-40:102, 40:108, 40:112-40:114, 40:116, 40:118N, 40:123, 40:124:02-40:126, 40:128, 40:130, 40:134, 40:141, 40:151, 40:154, 40:156, 40:163, 40:168, 40:171, 40:175, 40:179, 40:182, 40:187, 40:191, 40:193-40:196, 40:199, 40:204, 40:207, 40:212-40:213, 40:216N-40:218, 40:221, 40:223, 40:227-40:228, 40:234-40:236, 40:238
49												61	62									71		B40	*40:23
49	?											61											71	B40, B60, -	*40:25, 40:69, 40:106
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						55						61	62										71	-	*40:28
49	?											61	62									71	72	B60, -	*40:30, 40:34, 40:160:01-40:160:02
49	50	51	52	53	54	55	56	57	58	59	60	61	62	63	64	65	66	67	68	69	70	71	72		Well No.

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HLA-B allele ⁴	ser. ⁵																									
*40:31, 40:45, 40:80	B60, -				28																					?
*40:38, 40:52, 40:222	B60, -				28							36														?
*40:40	B61																									
*40:44, 40:75, 40:86, 40:103, 40:127, 40:131, 40:162, 40:165, 40:167, 40:190, 40:230	B61, -																									48
*40:46	B60											35				40										?
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*40:48	B60				28						34															?
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*40:58	B40				28																					?
*40:59	B40				28								36													48
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*40:68, 40:232	-																									?
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*40:74, 40:149, 40:210	B60, -																									?
*40:76	B60				28																					
*40:83, 40:177	-																									48
*40:93	-											35				40										48
*40:95	-																									?
*40:96	-																									48
*40:98	-	25																								?
*40:105	-												36													?
*40:109	-																									48
*40:110	-				28																					48
*40:117	-				28																					
*40:132, 40:178	-				28																					?
*40:136	-	25			28				32							38										?
*40:137	-																									?
*40:138	-																									48
*40:148, 40:161	-																									48
*40:157, 40:201	-																									
*40:158	-	25			28								36													?
*40:159	-												36													48
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*40:170	-																									?
*40:174	-				27																					?
*40:183, 40:198	-	25			28																					?
*40:184	-																						45			?
*40:185	-																		42							?
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*40:209	-																		42							?
*40:215	-				28																					?
*40:231	-	25			28				32							38										?
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																								ser. ⁵	HLA-B allele ⁴
49	50	51	52	53	54	55	56	57	58	59	60	61	62	63	64	65	66	67	68	69	70	71	72		
	?							57				61	62									71	72	B60, -	*40:31, 40:45, 40:80
49	?											61	62									71		B60, -	*40:38, 40:52, 40:222
												61	62									71		B61	*40:40
	?											61	62									71		B61, -	*40:44, 40:75, 40:86, 40:103, 40:127, 40:131, 40:162, 40:165, 40:167, 40:190, 40:230
49												62										71		B60	*40:46
49	?											62									70			B40, -	*40:47, 40:188
49	?											61	62				67					71		B60	*40:48
	?											61	62									71		B61, B60	*40:53, 40:72:02
	?											61	62		64							71		B40	*40:58
49												61	62									71	72	B40	*40:59
49												61	62									71			*40:60
	?											61										71		-	*40:68, 40:232
	?											61	62			65	67					71		B61	*40:71
49	?											61	62									71		B60, -	*40:74, 40:149, 40:210
49	?											62												B60	*40:76
												61	62									71		-	*40:83, 40:177
												62										71		-	*40:93
	?								59			61	62									71		-	*40:95
	?											62										70		-	*40:96
	?											61	62									71	72	-	*40:98
	?											61	62									71		-	*40:105
	?								58	60		62										70		-	*40:109
	?											62										70		-	*40:110
49	?								58	60		62										70		-	*40:117
49	?			53								61	62									71		-	*40:132, 40:178
	?	51										61	62									71		-	*40:136
49												62										71	72	-	*40:137
49												61	62									71		-	*40:138
	?								59			61	62									71		-	*40:148, 40:161
	?											62										70		-	*40:157, 40:201
	?											61	62									71		-	*40:158
	?											61	62									71		-	*40:159
49	?		52									61										71		-	*40:166
49												61	62									71		-	*40:170
	?											61	62									71		-	*40:174
49	?											61	62									71		-	*40:183, 40:198
	?											61	62									71		-	*40:184
49												62										71		-	*40:185
49	?											62										71		-	*40:208
												62										71		-	*40:209
49												61	62									71		-	*40:215
49	?	51		53								61	62									71		-	*40:231
																								Well No.	

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HLA-B allele ⁴	ser. ⁵																									
*41:01, 41:06-41:07, 41:12, 41:14, 41:16-41:17, 41:20-41:22, 41:25	B41, -				28				32																	48
*41:02:01-41:02:05, 41:11, 41:13, 41:19, 41:23, 41:27	B41, -				28				32																	48
*41:03:01-41:03:02, 41:15	B41, -				28				32																	48
*41:04, 41:10, 41:18	B41, -				28																					48
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*41:26	-				28				32																	48
*42:01:01-42:02, 42:06, 42:10, 42:12, 42:15, 42:17-42:18	B42, -								32																	48
*42:04	B42								32																	48
*42:05:01-42:05:02	B42	25							32						38											48
*42:08	B42								32																	48
*42:09	B42											36														48
*42:11	-								32		35															48
*42:13	-								32																	48
*42:14	-								32																	48
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*42:19	-								32																	48
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*44:02:22, 44:12, 44:171N	B44, Null, -				28														41							
Well No.		25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48	

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		51		54								61	62									71		B41, -	*41:01, 41:06-41:07, 41:12, 41:14, 41:16-41:17, 41:20-41:22, 41:25
		51										61	62									71	72	B41, -	*41:02:01-41:02:05, 41:11, 41:13, 41:19, 41:23, 41:27
		51										61	62									71		B41, -	*41:03:01-41:03:02, 41:15
		51										61	62									71	72	B41, -	*41:04, 41:10, 41:18
		51		54								?	62									71		B41	*41:05
		51										61	62									71		B41	*41:08
				54								61	62									71		B45, -	*41:09, 45:02-45:03 ¹⁰
		51										61	62									71	72	-	*41:24
		51		54								62												-	*41:26
		51	52																			71	72	B42, -	*42:01:01-42:02, 42:06, 42:10, 42:12, 42:15, 42:17-42:18
		51	52	54																		71		B42	*42:04
		51	52																			71	72	B42	*42:05:01-42:05:02
			52																			71		B42	*42:08
		51	52																			71	72	B42	*42:09
		51										62										71	72	-	*42:11
		51	52	53																		71	72	-	*42:13
		51	52																			71		-	*42:14
		51	52																			71	72	-	*42:16, 42:20
			52																			71	72	-	*42:19
				53								62	63									70		B44, Null, -	*44:02:01:01-44:02:21, 44:02:23-44:02:29, 44:11, 44:19N, 44:21-44:24, 44:27:01-44:27:02, 44:33-44:34:02, 44:48, 44:52N, 44:55, 44:59:01-44:59:02, 44:63, 44:66-44:68, 44:71-44:74, 44:80, 44:84, 44:86-44:87, 44:89, 44:93, 44:101-44:102, 44:104, 44:112-44:113, 44:116, 44:118-44:119, 44:121, 44:126:01-44:126:02, 44:137, 44:142, 44:148-44:149N, 44:151-44:152, 44:162, 44:168, 44:170, 44:172-44:173
				53								63										70		B44, Null, -	*44:02:22, 44:12, 44:171N
49	50	51	52	53	54	55	56	57	58	59	60	61	62	63	64	65	66	67	68	69	70	71	72		Well No.

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HLA-B allele ⁴	ser. ⁵																									
*44:03:01-44:03:06, 44:03:08-44:03:15, 44:03:17-44:03:18, 44:04-44:05:04, 44:13, 44:26, 44:28:01-44:30, 44:32, 44:35-44:36, 44:38-44:39, 44:42, 44:45, 44:51, 44:56N, 44:58N, 44:61N, 44:69-44:70, 44:76-44:79, 44:82, 44:85, 44:88, 44:92, 44:94, 44:96, 44:98, 44:105, 44:107-44:109, 44:114-44:115, 44:117, 44:120, 44:122-44:125, 44:128, 44:133, 44:136, 44:139, 44:141, 44:143, 44:147, 44:153-44:155, 44:157, 44:159-44:161, 44:163-44:165, 44:167, 44:174-44:175	B44, Null, -				28													41								
*44:03:07, 44:03:16, 44:03:19, 44:07, 44:81, 44:103, 44:111, 44:134	B44, -																	41								
*44:06	B44																	41								
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*44:09	B45				28													41								
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*44:14	B44				28				32									41								
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*44:17, 44:43:01-44:43:02, 44:144	B44, -				28							36	37					41								
*44:18	B44				28				32			35														
*44:20, 44:100	B44, -				28				32																	
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*44:31	B44				28																					
*44:37:01-44:37:02, 44:64:01-44:64:02	B44, -				28		30											41								
*44:40, 44:130	B44, -											35					40	41								
*44:41:01-44:41:02, 44:53, 44:99, 44:138Q	B44, -				28																					
*44:44	B44											35					40	41								
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*44:49	B44			26	28													41								
*44:54	B44				27	28																				
*44:57	-			w														41								
*44:60, 44:110	-				27	28												41								
*44:62	-				28				32	33								41								
Well No.		25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48	

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 101.701-24u/06u – without *Taq* pol., IFU-02

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49	50	51	52	53	54	55	56	57	58	59	60	61	62	63	64	65	66	67	68	69	70	71	72	ser. ⁵	Well No. HLA-B allele ⁴
				53									62								70			B44, Null, -	*44:03:01-44:03:06, 44:03:08-44:03:15, 44:03:17-44:03:18, 44:04-44:05:04, 44:13, 44:26, 44:28:01-44:30, 44:32, 44:35-44:36, 44:38-44:39, 44:42, 44:45, 44:51, 44:56N, 44:58N, 44:61N, 44:69-44:70, 44:76-44:79, 44:82, 44:85, 44:88, 44:92, 44:94, 44:96, 44:98, 44:105, 44:107-44:109, 44:114-44:115, 44:117, 44:120, 44:122-44:125, 44:128, 44:133, 44:136, 44:139, 44:141, 44:143, 44:147, 44:153-44:155, 44:157, 44:159-44:161, 44:163-44:165, 44:167, 44:174-44:175
				53									62								70			B44, -	*44:03:07, 44:03:16, 44:03:19, 44:07, 44:81, 44:103, 44:111, 44:134
				53	54						60		63						68		70			B44	*44:06
				53									62	63							70			B44	*44:08
				53								61	62	63								71		B45	*44:09
				53									62			65					70			B44	*44:10
				53									62								70			B44	*44:14
					54								62			65					70			B12	*44:15
				53									62	63							70			B47/B44 , -	*44:16, 44:91, 44:132
				53									62								70			B44, -	*44:17, 44:43:01-44:43:02, 44:144
					54					58			62			65					70			B44	*44:18
				53	54								62	63							70			B44, -	*44:20, 44:100
				53						58	60		62								70			B44	*44:25, 44:50
49				53									62								70			B44	*44:31
													62								70			B44, -	*44:37:01-44:37:02, 44:64:01-44:64:02
				53									62								70			B44, -	*44:40, 44:130
				53									62	63							70			B44, -	*44:41:01-44:41:02, 44:53, 44:99, 44:138Q
				53									62	63							70			B44	*44:44
				53								61	62									71		B12, -	*44:46, 44:75, 44:129
				53									62								70			B44, -	*44:47, 44:65
				53									62	63							70			B44	*44:49
				53									62								70			B44	*44:54
				53									62								70			-	*44:57
				53									62								70			-	*44:60, 44:110
				53									62								70			-	*44:62
49	50	51	52	53	54	55	56	57	58	59	60	61	62	63	64	65	66	67	68	69	70	71	72		Well No.

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 101.701-24u/06u – without *Taq* pol., IFU-02

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Well No.		25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48	
HLA-B allele ⁴	ser. ⁵																									
*44:83, 44:145	-																	41								
*44:90	-				28													41								
*44:95	-				28													41								
*44:97	-				28													41								
*44:106	-				27	28																				
*44:127	-				28													41								
*44:131	-																	41								
*44:140	-				28							35						41								
*44:146	-				28													41								
*44:150	-	25			28		30											41								
*44:156	-		26									35						41								
*44:166	-				28				32																	
*44:169	-				28													41								
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*45:04	B21				28				32																	48
*45:06	B45				28				32			35														48
*45:08	-				28				32																	48
*45:09	-				28				32				36	37												48
*45:10	-				28				32		34															48
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*46:01:07	-								31			36														
*46:02	B46								31			36														
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*46:06									31			36														
*46:11	B22								31																	
*46:12	-				27				31			36														
*46:17	-								31			36	37													
*46:18	-								31																	
*46:32	-								31			36														
*46:33	-								31			36						41								
*47:01:01:01-47:01:02, 47:06-47:08	B47, -				28																					
*47:02	B47				28																					
*47:03	B47				28																					
*47:04-47:05	B17, -				28	29																				
*48:01:01-48:01:04, 48:07, 48:09, 48:11, 48:19-48:20, 48:22, 48:27, 48:29-48:30	B48, -											35														48
Well No.		25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48	

101.701-24/06– including *Taq* pol., IFU-01
 101.701-24u/06u – without *Taq* pol., IFU-02

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49	50	51	52	53	54	55	56	57	58	59	60	61	62	63	64	65	66	67	68	69	70	71	72	ser. ⁵	HLA-B allele ⁴	Well No.
				53								62	63								70			-	*44:83, 44:145	
			52	53		56						61	62	63								71		-	*44:90	
				53				58	60			62	63									70		-	*44:95	
			52	53		56						62	63									70		-	*44:97	
				53								62	63									70		-	*44:106	
				53								62	63											-	*44:127	
				53								61	62	63								71		-	*44:131	
				53								62			65							70		-	*44:140	
				53								62								69	70			-	*44:146	
												62										70	72	-	*44:150	
				53								62										70		-	*44:156	
		51										62										70	72	-	*44:166	
49				53								62	63									70		-	*44:169	
				54								61	62			65						71		B45, -	*45:01, 45:05, 45:07, 45:11-45:14	
				54								61	62			65						71		B21	*45:04	
		52		54								61	62			65						71		B45	*45:06	
				54								61	62	64								71		-	*45:08	
				54								61	62									71		-	*45:09	
				54								61	62									71		-	*45:10	
			52			55															69	71		B46, Null, -	*46:01:01-46:01:06, 46:01:08-46:01:09, 46:04-46:05, 46:07N, 46:09-46:10, 46:14-46:16, 46:20, 46:22-46:24, 46:26-46:31, 46:34-46:38	
	50		52			55															69	71		-	*46:01:07	
			w			55															69	71		B46	*46:02	
				52		55																71		B46, -	*46:03, 46:08, 46:13:01-46:13:03, 46:19, 46:21:01-46:21:02, 46:25	
49			52			55																71			*46:06	
			52			55										65						71		B22	*46:11	
			52			55															69	71		-	*46:12	
			52			55															69	71		-	*46:17	
			52			55									64							71		-	*46:18	
			52			55			w												69	71		-	*46:32	
	50		52			55																71		-	*46:33	
	50					56							62									70		B47, -	*47:01:01:01-47:01:02, 47:06-47:08	
	50					56						61	62									71		B47	*47:02	
	50					56					w	62										70	w	B47	*47:03	
	50											62										70		B17, -	*47:04-47:05	
								57					62									71	72	B48, -	*48:01:01-48:01:04, 48:07, 48:09, 48:11, 48:19-48:20, 48:22, 48:27, 48:29-48:30	
49	50	51	52	53	54	55	56	57	58	59	60	61	62	63	64	65	66	67	68	69	70	71	72		Well No.	

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HLA-B allele ⁴	ser. ⁵																									
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*48:03:01-48:03:02	B48											35														48
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*48:05, 48:08	B48, -	25										35														48
*48:06	-																									48
*48:10, 48:12	B48											35														48
*48:13	-											35														48
*48:14	B48											35	36													48
*48:15	B48	25										35														48
*48:16	B48											35														48
*48:17	-											35														48
*48:18	B48											35														
*48:21, 48:26	-					29						35														48
*48:23	-											35	36													48
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*49:01:02, 49:11	B49, -				28																					
*49:02	B49				28																					
*49:03	B49																									
*49:04-49:05	B49				28								36													
*49:07	-				28						34															
*49:18	-				28					33																
*49:20	-				28							35														
*49:21	-				28																					
*49:25	-		26																							
*49:26	-															40								46	47	
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*50:02	B45				28							35														48
*50:06	-				28																					48
*50:07	-																									48
*50:09, 50:20	-				28																					48
*50:12	-				28																					48
*50:14	-				28					33																48
*50:15	-				28																					48
*50:17	-				28													41								48
*50:31	-				28						34															48
Well No.		25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48	

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 101.701-24u/06u – without *Taq* pol., IFU-02

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49	50	51	52	53	54	55	56	57	58	59	60	61	62	63	64	65	66	67	68	69	70	71	72	ser. ⁵	Well No. HLA-B allele ⁴
													62									71		B48/B70	*48:02:01-48:02:03, 48:25
49													62									71		B48	*48:03:01-48:03:02
								57					62									71		B48, -	*48:04, 48:24
													62									71	72	B48, -	*48:05, 48:08
								57														71	72	-	*48:06
													62									71	72	B48	*48:10, 48:12
													62									71		-	*48:13
													62									71	72	B48	*48:14
								57					62									71	72	B48	*48:15
								57														71	72	B48	*48:16
49													62									71	72	-	*48:17
								57					62								70	72		B48	*48:18
													62									71		-	*48:21, 48:26
49													62									71		-	*48:23
								57					62									71	72	-	*48:28
									58	59			62			65						70		B49, Null, -	*49:01:01, 49:01:03-49:01:04, 49:06, 49:08-49:10, 49:12-49:17, 49:19N, 49:22-49:24
									58				62			65						70		B49, -	*49:01:02, 49:11
									59				62			65						70		B49	*49:02
									59				62			65						70		B49	*49:03
									58	59			62									70		B49	*49:04-49:05
									58	59			62									70		-	*49:07
									58	59			62									70		-	*49:18
									58	59			62			65						70		-	*49:20
									58	59			62			65								-	*49:21
									58	59			62			65						70		-	*49:25
									59							65						70		-	*49:26
									59			61	62			65						71		B50, -	*50:01:01-50:01:03, 50:04- 50:05, 50:08, 50:10-50:11, 50:13, 50:16, 50:18-50:19, 50:32
									59			61	62			65						71		B45	*50:02
									59			62				65						71		-	*50:06
									59			61	62			65						71		-	*50:07
									59			61	62									71		-	*50:09, 50:20
												61	62			65						71		-	*50:12
									59			61	62									71		-	*50:14
									59			61				65						71		-	*50:15
												61	62			65						71		-	*50:17
									59			61	62									71		-	*50:31
49	50	51	52	53	54	55	56	57	58	59	60	61	62	63	64	65	66	67	68	69	70	71	72		Well No.

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HLA-B allele ⁴	ser. ⁵																									
*51:01:01, 51:01:03, 51:01:05-51:01:08, 51:01:10-51:01:20, 51:01:22-51:01:24, 51:01:26-51:01:39, 51:01:41-51:02:01, 51:02:03, 51:02:05-51:03, 51:07:01, 51:09:01, 51:11N-51:12, 51:13:02-51:14, 51:16-51:19, 51:21-51:23, 51:26-51:33, 51:38-51:41N, 51:43, 51:48-51:53, 51:55, 51:57-51:58, 51:60, 51:65-51:67, 51:69-51:77, 51:79-51:80, 51:82-51:88, 51:90-51:91, 51:94-51:96, 51:98N, 51:100, 51:102, 51:105, 51:107-51:111, 51:113-51:115, 51:117, 51:120-51:130, 51:133-51:134, 51:136-51:138, 51:140, 51:142, 51:145-51:146, 51:149N-51:152	B51, B5102/B51, B5103/B51, B51/blank, Null -									33																
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*51:10	B51																								48	
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*51:24:02	B51																								48	
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*51:42	-																	41								
*51:45	-												36													
*51:61:01-51:61:02	-									33																
*51:62	-																									
*51:64	-				27					33																
*51:68	-		26							33																
Well No.		25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48	

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																							ser. ⁵	HLA-B allele ⁴	
					54					59	60								68		70			B51, B5102/B 51, B5103/B 51, B51/blank, Null -	*51:01:01, 51:01:03, 51:01:05-51:01:08, 51:01:10-51:01:20, 51:01:22-51:01:24, 51:01:26-51:01:39, 51:01:41-51:02:01, 51:02:03, 51:02:05-51:03, 51:07:01, 51:09:01, 51:11N-51:12, 51:13:02-51:14, 51:16-51:19, 51:21-51:23, 51:26-51:33, 51:38-51:41N, 51:43, 51:48-51:53, 51:55, 51:57-51:58, 51:60, 51:65-51:67, 51:69-51:77, 51:79-51:80, 51:82-51:88, 51:90-51:91, 51:94-51:96, 51:98N, 51:100, 51:102, 51:105, 51:107-51:111, 51:113-51:115, 51:117, 51:120-51:130, 51:133-51:134, 51:136-51:138, 51:140, 51:142, 51:145-51:146, 51:149N-51:152
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					54					59	60								68		70			B51, B5102/B 51, -	*51:01:04, 51:02:04, 51:13:01, 51:24:01, 51:34-51:35, 51:92, 51:99, 51:131, 51:143
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					54					59	60								68		70			B51, -	*51:01:21, 51:01:25, 51:24:03-51:24:04
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					54						60								68		70			B51, -	*51:06:01-51:06:02, 51:59, 51:135
					54					59	60								68		70			B51, Null, -	*51:08, 51:20, 51:44N, 51:141
					54						60								68		70			B51	*51:10
											60					65			68		70			-	*51:15
					54					59	60								68		70			B51	*51:24:02
					54					59	60								68		70			B51	*51:36
					54					59	60								68		70			B51, -	*51:37, 51:63
					53	54					60								68		70			-	*51:42
					54						60								68		70			-	*51:45
					54					59	60								68	69	70			-	*51:61:01-51:61:02
					54						60					65		67	68		70			-	*51:62
					54						60								68		70			-	*51:64
					54					59	60								68		70			-	*51:68
49	50	51	52	53	54	55	56	57	58	59	60	61	62	63	64	65	66	67	68	69	70	71	72	Well No.	

101.701-24/06– including *Taq* pol., IFU-01
 101.701-24u/06u – without *Taq* pol., IFU-02

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Well No.		25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48		
HLA-B allele ⁴	ser. ⁵																										
*51:81	-																										
*51:93, 51:144	-																										
*51:97	-								32	33		36															
*51:101	-									33													45				
*51:104, 51:118N, 51:147	Null, -									33																	
*51:106	-									33																	
*51:112	-									33																	
*51:148	-			27																							
*52:01:01:01-52:01:01:02, 52:01:03, 52:01:06-52:01:08, 52:01:11-52:01:14, 52:01:16- 52:01:17, 52:04-52:05, 52:07- 52:08, 52:10:01-52:13, 52:15, 52:17-52:18, 52:22-52:24, 52:27- 52:31	B52, -									33																	
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*52:01:05, 52:01:15, 52:14	B52, -																										
*52:01:10	-									33														46			
*52:16	-									33	35																
*52:19	-								32	33																	
*52:20	-									33																	
*52:21	-									33																	
*52:25	-																										
*52:26	-						30			33																	
*53:01:01-53:01:08, 53:05, 53:08:01-53:08:02, 53:10, 53:16, 53:18, 53:20-53:21, 53:23-53:27, 53:29	B53, -												36						41								
*53:02	B53												36						41								
*53:03, 53:09, 53:11-53:13	B53/B35												36						41								
*53:04, 53:07, 53:19	B53, -																		41								
*53:06	B53/B51												36						41								
*53:14	-			27									36														
*53:15	-												36						41								
*53:17:01-53:17:02	-												36						41								
*53:22	-												36	37					41								
*53:28	-									33			36						41								
*53:30, 57:45, 57:51	-				28								36						41								
*54:01:01, 54:01:03-54:02, 54:05N, 54:07-54:08N, 54:10, 54:13, 54:16-54:19, 54:21-54:25, 54:27-54:28	B54, Null, -																										
Well No.		25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48		

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 101.701-24u/06u – without *Taq* pol., IFU-02

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					54						60								68		70			-	*51:81
										59	60								68		70			-	*51:93, 51:144
					54					59	60								68		70			-	*51:97
					54					59	60								68		70			-	*51:101
					54					59	60										70			Null, -	*51:104, 51:118N, 51:147
					54					59	60					65			68		70			-	*51:106
					54				58	59	60										70			-	*51:112
											60								68		70			-	*51:148
										59	60		62									70		B52, -	*52:01:01:01-52:01:01:02, 52:01:03, 52:01:06-52:01:08, 52:01:11-52:01:14, 52:01:16- 52:01:17, 52:04-52:05, 52:07- 52:08, 52:10:01-52:13, 52:15, 52:17-52:18, 52:22-52:24, 52:27- 52:31
					54					59	60		62									70		B52, -	*52:01:02, 52:01:04, 52:01:09, 52:02:01-52:03, 52:06:01- 52:06:02, 52:09
										59	60		62								70		B52, -	*52:01:05, 52:01:15, 52:14	
										59	60		62								70		-	-	*52:01:10
										59	60		62								70		-	-	*52:16
					54					59	60		62								70		-	-	*52:19
										59			62								70		-	-	*52:20
					54					59	60		62								69	70		-	*52:21
										59	60		62			65					70		-	-	*52:25
										59	60		62								70		-	-	*52:26
											60								68			70		B53, -	*53:01:01-53:01:08, 53:05, 53:08:01-53:08:02, 53:10, 53:16, 53:18, 53:20-53:21, 53:23-53:27, 53:29
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											60								68		70		B53/B35	-	*53:03, 53:09, 53:11-53:13
											60								68		70		B53, -	-	*53:04, 53:07, 53:19
					54	55					60								68		70		B53/B51	-	*53:06
											60								68		70		-	-	*53:14
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											60		62								70		-	-	*53:17:01-53:17:02
					53						60									68	70		-	-	*53:22
						55					60		62								70		-	-	*53:28
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49	50	51	52	53	54	55	56	57	58	59	60	61	62	63	64	65	66	67	68	69	70	71	72		Well No.

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HLA-B allele ⁴	ser. ⁵																									
*54:01:02, 55:01:07, 55:02:01-55:02:06, 55:07, 55:10, 55:12, 55:16, 55:19, 55:26, 55:30, 55:35, 55:37, 55:39, 55:41-55:43, 55:47-55:48, 55:50, 55:57 ¹¹	B55, B54, -																									
*54:03	B22																									
*54:04, 54:15	B54, -																									
*54:06	-												36													
*54:09, 54:14	-												36													
*54:11	B54																								48	
*54:12	-																									
*54:20	-																									
*54:26	-										34															
*55:01:01-55:01:06, 55:01:08-55:01:10, 55:03, 55:05, 55:11, 55:15, 55:25, 55:29, 55:31, 55:33, 55:36, 55:38, 55:44-55:45, 55:52-55:55N	B55, Null, -																									
*55:04, 55:08, 55:13, 55:27, 55:46, 55:49, 56:01:05, 56:15, 56:19N, 56:22 ¹²	B55, B56, Null, -																									
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*55:14	-												36					41								
*55:17, 55:28, 55:58	B55, -																									
*55:18	-											35														
*55:20	B22								32																	
*55:21	B55																									
*55:22	B22										34															
*55:23, 55:32, 56:18, 56:31-56:32 ¹³	B55, -												36													
*55:34	-																									
*55:40	-																									
*55:51	-				27																					
*55:56	-								32																	
*56:01:01-56:01:04, 56:08, 56:14, 56:16, 56:20:01, 56:24, 56:26-56:30, 56:34-56:36, 56:38N	B56, Null, -																									
*56:02, 56:04	B56																									
*56:03	B22/15												36													
*56:05:01	B56										33															
*56:05:02	B56										33															
*56:06	B78										33								42							
*56:07	B56																									
Well No.		25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48	

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			52				56								64							71		B55, B54, -	*54:01:02, 55:01:07, 55:02:01- 55:02:06, 55:07, 55:10, 55:12, 55:16, 55:19, 55:26, 55:30, 55:35, 55:37, 55:39, 55:41- 55:43, 55:47-55:48, 55:50, 55:57 ¹¹
			52				56							63	65							71		B22	*54:03
			52				56							63								71		B54, -	*54:04, 54:15
			52				56							63						69		71		-	*54:06
			52				56							63								71		-	*54:09, 54:14
			52				56							63								71		B54	*54:11
			52				56		58					63	64							70		-	*54:12
			52				56			59				63	64							71		-	*54:20
			52				56							63								71		-	*54:26
			52				56			59					64							71		B55, Null, -	*55:01:01-55:01:06, 55:01:08- 55:01:10, 55:03, 55:05, 55:11, 55:15, 55:25, 55:29, 55:31, 55:33, 55:36, 55:38, 55:44- 55:45, 55:52-55:55N
			52				56															71		B55, B56, Null, -	*55:04, 55:08, 55:13, 55:27, 55:46, 55:49, 56:01:05, 56:15, 56:19N, 56:22 ¹²
			52				56			59												71		B22, B55	*55:09, 55:24
			52				56												66			71		-	*55:14
			52				56			59												71		B55, -	*55:17, 55:28, 55:58
														62	64							71		-	*55:18
			51	52		54	56															71		B22	*55:20
			52				56			w					64						69	71		B55	*55:21
			52				56															71		B22	*55:22
			52				56															71		B55, -	*55:23, 55:32, 56:18, 56:31- 56:32 ¹³
			52				56							62	64							71		-	*55:34
			52				56			59				62	64							71		-	*55:40
			52				56															71		-	*55:51
			52			54	56								64							71		-	*55:56
			52				56															71		B56, Null, -	*56:01:01-56:01:04, 56:08, 56:14, 56:16, 56:20:01, 56:24, 56:26-56:30, 56:34-56:36, 56:38N
			52				56										65		67			71		B56	*56:02, 56:04
			52				56														69	71		B22/15	*56:03
			52				56			59					64							71		B56	*56:05:01
			52				56			59												71		B56	*56:05:02
			52				56			59					64						w	71		B78	*56:06
			52				56										65					70		B56	*56:07
49	50	51	52	53	54	55	56	57	58	59	60	61	62	63	64	65	66	67	68	69	70	71	72		Well No.

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Well No.		25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48	
HLA-B allele ⁴	ser. ⁵																									
*56:09	B56												36					41								
*56:10	B55																									
*56:11-56:12	B56, B22																	41								
*56:13	B56								32																	
*56:17, 56:33	B56, -																									
*56:20:02	-																								48	
*56:21	-											33														
*56:23	-																									
*56:25, 56:37	-																									
*56:39	-																									
*57:01:01-57:01:04, 57:01:06-57:01:14, 57:06, 57:08, 57:10, 57:15-57:16, 57:18-57:20, 57:22-57:23, 57:25-57:27, 57:29-57:30, 57:33-57:38, 57:40-57:41, 57:43-57:44, 57:48-57:50, 57:52-57:56, 57:58, 57:60-57:62, 57:64	B57, -												36					41								
*57:01:05, 57:11, 57:13, 57:21, 57:31, 57:47	B57, -												36													
*57:02:01-57:03:02, 57:17, 57:28N, 57:32, 57:39, 57:42, 57:46, 57:57, 57:63	B57, Null, -																	41								
*57:04	B57							30										41								
*57:05	B57																	41								
*57:07	B57																	41								
*57:09	B57								32									41								
*57:12	B57																	41								
*57:14	-												36					41								
*57:24	-												36					41								
*57:59	-												36					41								
*58:01:01-58:01:02, 58:01:04-58:01:12, 58:04-58:05, 58:10N-58:15, 58:19, 58:21-58:24, 58:29, 58:31N-58:33, 58:35, 58:37, 58:39N-58:40, 58:42	B58, Null, -												36					41								
*58:01:03, 58:02, 58:06, 58:16, 58:25-58:26, 58:38	B58, -												36													
*58:07	B58												36	37												
*58:08:01	B17/B5											33														
*58:08:02	-											33														
*58:09	B17												36					41								
*58:17N	Null												36					41								
*58:18	-				27								36													
*58:20	-																							45		
Well No.		25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48	

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			52				56															71		B56	*56:09
			52				56							64			67					71		B55	*56:10
			52				56															71		B56, B22	*56:11-56:12
			52	54			56									65						71		B56	*56:13
			52				56									65						71		B56, -	*56:17, 56:33
			52				56									65						71		-	*56:20:02
			52				56	58	59													70		-	*56:21
														64								71		-	*56:23
			52				56			59						65						71		-	*56:25, 56:37
			52				56	w								65						71		-	*56:39
											60						66					70		B57, -	*57:01:01-57:01:04, 57:01:06-57:01:14, 57:06, 57:08, 57:10, 57:15-57:16, 57:18-57:20, 57:22-57:23, 57:25-57:27, 57:29-57:30, 57:33-57:38, 57:40-57:41, 57:43-57:44, 57:48-57:50, 57:52-57:56, 57:58, 57:60-57:62, 57:64
											60						66					70		B57, -	*57:01:05, 57:11, 57:13, 57:21, 57:31, 57:47
											60						66					70		B57, Null, -	*57:02:01-57:03:02, 57:17, 57:28N, 57:32, 57:39, 57:42, 57:46, 57:57, 57:63
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				53							60						66					70		B57	*57:07
				53							60						66					70		B57	*57:09
											60						66					71		B57	*57:12
						55					60						66					70		-	*57:14
				53							60						66					70		-	*57:24
49											60						66					70		-	*57:59
											60							67				70		B58, Null, -	*58:01:01-58:01:02, 58:01:04-58:01:12, 58:04-58:05, 58:10N-58:15, 58:19, 58:21-58:24, 58:29, 58:31N-58:33, 58:35, 58:37, 58:39N-58:40, 58:42
											60							67				70		B58, -	*58:01:03, 58:02, 58:06, 58:16, 58:25-58:26, 58:38
											60							67				70		B58	*58:07
				54						59	60							67				70		B17/B5	*58:08:01
										59	60							67				70		-	*58:08:02
						55					60							67				70		B17	*58:09
											60							67				70		Null	*58:17N
											60							67				70		-	*58:18
											60							67				70		-	*58:20
49	50	51	52	53	54	55	56	57	58	59	60	61	62	63	64	65	66	67	68	69	70	71	72		Well No.

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HLA-B allele ⁴	ser. ⁵																								
*58:27	-																								
*58:28, 58:34	-																	41							
*58:36	-											36						41							
*59:01:01:01-59:01:01:02, 59:05	B59, -																								
*59:02-59:03	B59, -																								
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*78:05	-									33									42						
*78:06	-									33															
*81:01	B81																								
*81:02	B81																								48
*81:03-81:06	Null, -																								
*82:01-82:03	B82, -								32		35								43						
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C*03:102	-																	41							
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C*03:179	-																		43						
C*06:72	-																								
C*07:02:30, C*08:16:02	-							31																	
C*07:46	Cw7								32																
C*07:302	-																				44				
C*15:02:04	-																								
C*15:25	-																								
C*15:39	-																								
C*15:51	-																							45	
Well No.		25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48

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										60							67			70				-	*58:27
										60							67			70				-	*58:28, 58:34
	50									60						66				70				-	*58:36
									58					64						70				B59, -	*59:01:01:01-59:01:01:02, 59:05
									58											70				B59, -	*59:02-59:03
									58						65					70				-	*59:04
			52																			71		B67, -	*67:01:01, 67:03
			52																			71		B67, -	*67:01:02-67:02
			52																	69		71		B73, -	*73:01-73:02
										59				64				68			71			B78, -	*78:01:01-78:01:02, 78:02:02-78:03, 78:07
										59								68			71			B78, B35	*78:02:01, 78:04
										59			62								71			-	*78:05
										59			62								71			-	*78:06
			52				56	57														71	72	B81	*81:01
			52					57														71	72	B81	*81:02
			52					57														71	72	Null, -	*81:03-81:06
			52				56									65						71		B82, -	*82:01-82:03
			52	53			56							63								71		-	*83:01
																								-	A*23:31, A*24:106, C*07:231, C*16:10
																								-	A*24:174
																				69				-	A*26:68, A*68:56, C*02:56, C*06:20, C*12:50
																								-	C*01:30, C*12:87
	50					55																		-	C*01:73
																		w						Cw2, -	C*02:06, C*02:47
																								-	C*02:23, C*04:77
																								Cw3, Cw10, -	C*03:05, C*03:25, C*03:27, C*03:143, C*03:167
																65								Cw3	C*03:19
															65									-	C*03:102
49																								-	C*03:129, C*17:16
																								-	C*03:179
																	66							-	C*06:72
																								-	C*07:02:30, C*08:16:02
																								Cw7	C*07:46
																								-	C*07:302
														64										-	C*15:02:04
				53																				-	C*15:25
						55																		-	C*15:39
																								-	C*15:51

101.701-24/06– including *Taq* pol., IFU-01
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Lot-specific information

¹The internal positive control primer pairs amplify segments of the human growth hormone gene. The two different control primer pairs give rise to either an internal positive control band of 1070 base pairs, for most wells, or a band of 800 base pairs, for some wells.

Well number 25 contains the primer pair giving rise to the shorter, 800 bp, internal positive control band in order to help in the correct orientation of the HLA-B low resolution typing.

In addition, wells number 28 to 30, 34, 41, 44, 45, 52, 54, 55, 59, 66 and 72 contain the primer pair giving rise to the shorter, 800 bp, internal positive control band in order to allow kit identification.

²The nucleotide position, in the 1st, 2nd or 3rd exon or in the 1st intron, matching the specificity-determining 3'-end of the primer is given. Nucleotide numbering as on the www.ebi.ac.uk, imgt, hla web site. The sequence of the 3 terminal nucleotides of the primer is given.

³The nucleotide position, in the 2nd or 3rd exon, matching the specificity-determining 3'-end of the primer is given in the anti-sense direction. Nucleotide numbering as on the www.ebi.ac.uk, imgt, hla web site. The sequence of the 3 terminal nucleotides of the primer is given.

⁴The sequence of the B*0701 allele has been shown to be in error.

The sequence of the B*08:06 allele has been shown to be identical to B*08:20.

The sequence of the B*1305 allele has been shown to be identical to B*13:04.

The B*1324 allele has been renamed B*13:22:02

The B*150105 allele has been corrected and renamed B*15:120

The B*1522 allele has been renamed B*35:43.

The sequence of the B*1541 allele has been shown to be identical to B*15:39.

The B*1559 allele has been renamed B*35:44.

The B*15:100 allele has never been assigned.

The sequence of the B*1816 allele has been shown to be identical to B*18:14.

The sequence of the B*27051 allele has been shown to be identical to B*27:05:02.

The sequence of the B*2722 allele has been shown to be identical to the corrected B*27:06 sequence.

The B*3573 allele has been renamed B*35:08:03.

The B*35:43:02 allele has been renamed B*35:185.

The sequence of the B*39012 allele has been shown to be identical to B*39:01:01:01.

The sequence of the B*3921 allele has been shown to be identical to B*39:24.

The sequence of the B*4017 allele has been shown to be identical to B*40:16.

The sequence of the B*4041 allele has been shown to be identical to B*40:40.

The sequence of the B*4203 allele has never been assigned.

The sequence of the B*4401 allele has been shown to be identical to B*44:02:01:01.

The sequence of the B*5003 allele has been shown to be identical to B*50:02.

The sequence of the B*5125 allele has been shown to be identical to B*51:22.

The B*5147 allele has been renamed B*51:09:02.

The sequence of the B*5506 allele has been shown to be identical to B*55:04.

The sequence of the B*5803 allele has never been assigned.

The sequence of the B*58:30 allele has been shown to be identical to B*58:01:01.

The B*7901 allele has been renamed B*15:18:01.

The B*9530 allele has been renamed B*15:27:02.

⁵The serological reactivity of all HLA-B alleles is not known. In this table we use the expert-assigned serological grouping in Tissue Antigens (2009) 73:95-170 and the serological grouping of the sequence-defined allele.

⁶The B*08:26, 08:50, 08:62, 08:85, 08:94 and 42:07 alleles give rise to identical amplification patterns with the HLA-B low resolution primer set. These alleles can be separated by the respective high resolution primer sets.

⁷The B*13:21, 13:35 and 13:59 and the B*44:135 and 44:158 alleles give rise to identical amplification patterns with the HLA-B low resolution primer set. These alleles can be separated by the respective high resolution primer sets.

⁸The B*14:08 and the B*39:25N, 39:30, 39:32-39:34, 39:47, 39:50, 39:74 and 39:82 alleles give rise to identical amplification patterns with the HLA-B low resolution primer set. These alleles can be separated by the respective high resolution primer sets.

⁹The B*18:29 and 18:72 and the B*35:32:01-35:32:02, 35:37, 35:53N, 35:64:01-35:64:02, 35:68:01-35:68:02, 35:99, 35:118-35:119 and 35:174 alleles give rise to identical amplification

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patterns with the HLA-B low resolution primer set. These alleles can be separated by the respective high resolution primer sets.

¹⁰The B*41:09 and the B*45:02-45:03 alleles give rise to identical amplification patterns with the HLA-B low resolution primer set. These alleles can be separated by the respective high resolution primer sets.

¹¹The B*54:01:02 and the B*55:01:07, 55:02:01-55:02:06, 55:07, 55:10, 55:12, 55:16, 55:19, 55:26, 55:30, 55:35, 55:37, 55:39, 55:41-55:43, 55:47-55:48, 55:50 and 55:57 alleles give rise to identical amplification patterns with the HLA-B low resolution primer set. These alleles can be separated by the respective high resolution primer sets.

¹²The B*55:04, 55:08, 55:13, 55:27, 55:46, 55:49, 56:15, 56:19N, 56:22 alleles give rise to identical amplification patterns with the HLA-B low resolution primer set. These alleles can be separated by the respective high resolution primer sets.

¹³The B*55:23 and 55:32 and the B*56:18 and 56:31-56:32 alleles give rise to identical amplification patterns with the HLA-B low resolution primer set. These alleles can be separated by the respective high resolution primer sets.

‘ser’, serological HLA specificity.

‘w’, might be weakly amplified.

‘?’, nucleotide sequence information not available for the primer matching sequence.

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Lot-specific information

		INTERPRETATION TABLE																								
		DR low resolution SSP typing																								
		Amplification patterns of the DRB1*01:01 to DRB1*10:05 alleles																								
		Well ⁶																								
		73	74	75	76	77	78	79	80	81	82	83	84	85	86	87	88	89	90	91	92	93	94	95	96	
Length of spec.	PCR product(s)	265	205																							
Length of int. pos. control ¹		515	430	430	430	430	430	430	430	430	430	430	430	430	430	430	430	430	430	430	430	430	430	430	430	
5'-primer(s) ²		5'-GAA ³ 14(129) 5'-AT ³ 12(124)	5'-GAA ³ 14(129) 5'-gAA ³ 14(129)	5'-AAg ³ 13(126) 5'-Agg ³ 13(126)	5'-AAg ³ 13(126) 5'-Agg ³ 13(126)	5'-gTT ³ 47(227) 5'-gTC ³ 13(125)	5'-gTT ³ 15(133) 5'-gTC ³ 13(125)	5'-gTT ³ 15(133) 5'-gTC ³ 13(125)	5'-gTT ³ 15(133) 5'-gTC ³ 13(125)	5'-gTC ³ 13(125) 5'-ACA ³ 13(125)	5'-gTC ³ 13(125) 5'-ATA ³ 13(127)	5'-gTT ³ 15(133) 5'-gTT ³ 15(133)	5'-gAg ³ 58(261) 5'-TAT ³ 26(165)	5'-gCg ³ 30(178) 5'-gTA ³ 26(164)	5'-gTC ³ 15(133) 5'-gTC ³ 13(125)	5'-gTC ³ 13(122) 5'-TAT ³ 12(122)	5'-gTC ³ 13(122) 5'-TAT ³ 12(122)	5'-gTC ³ 13(125) 5'-gTC ³ 13(125)	5'-gTC ³ 13(125) 5'-gTC ³ 13(125)	5'-gTA ³ 37(197) 5'-CAA ³ 1 ⁵ 1	5'-CAG ³ 34(189) 5'-gTA ³ 26(164)	5'-CAG ³ 34(189) 5'-gTC ³ 13(125)	5'-TCC ³ 37(199) 5'-gCT ³ 10(116)	5'-gAT ³ 28(170)	5'-gTA ³ 13(125)	
3'-primer(s) ³		5'-CCA ³ 86(344) 5'-AgT ³ 77(317) 5'-gCg ³ 71(299) 5'-CTg ³ 70(297) 5'-gAT ³ 66(286) 5'-gAg ³ 66(286) 5'-gAT ³ 66(286)	5'-gAg ³ 66(286) 5'-gAT ³ 66(286)	5'-CTg ³ 69(295) 5'-CTg ³ 69(295) 5'-gAT ³ 66(286)	5'-gAg ³ 66(286) 5'-gAA ³ 66(286)	5'-gAg ³ 66(286) 5'-gAA ³ 66(286)	5'-gAg ³ 66(286) 5'-gAA ³ 66(286)	5'-gAg ³ 66(286) 5'-gAA ³ 66(286)	5'-gAg ³ 66(286) 5'-gAA ³ 66(286)	5'-gAg ³ 66(286) 5'-gAA ³ 66(286)	5'-gAg ³ 66(286) 5'-gAA ³ 66(286)	5'-gAg ³ 66(286) 5'-gAA ³ 66(286)	5'-gAg ³ 66(286) 5'-gAA ³ 66(286)	5'-gAg ³ 66(286) 5'-gAA ³ 66(286)	5'-gAg ³ 66(286) 5'-gAA ³ 66(286)	5'-gAg ³ 66(286) 5'-gAA ³ 66(286)	5'-gAg ³ 66(286) 5'-gAA ³ 66(286)	5'-gAg ³ 66(286) 5'-gAA ³ 66(286)	5'-gAg ³ 66(286) 5'-gAA ³ 66(286)	5'-gAg ³ 66(286) 5'-gAA ³ 66(286)	5'-gAg ³ 66(286) 5'-gAA ³ 66(286)	5'-gAg ³ 66(286) 5'-gAA ³ 66(286)	5'-gAg ³ 66(286) 5'-gAA ³ 66(286)	5'-gAg ³ 66(286) 5'-gAA ³ 66(286)	5'-gAg ³ 66(286) 5'-gAA ³ 66(286)	5'-gAg ³ 66(286) 5'-gAA ³ 66(286)
Well No.	DR	73	74	75	76	77	78	79	80	81	82	83	84	85	86	87	88	89	90	91	92	93	94	95	96	



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Lot-specific information

Well No.	DR	73	74	75	76	77	78	79	80	81	82	83	84	85	86	87	88	89	90	91	92	93	94	95	96
DRB1 allele ⁴	ser ⁵																								
*01:01:01-01:02:08, 01:04-01:38, 01:40N-01:41, 01:43-01:58	DR1, Null, -	73																							
*01:03, 01:39N	DR103/DR1, Null	74																							
*01:42	-	73	74																						
*03:01:01:01-03:01:22, 03:04:01-03:06, 03:09, 03:11:01-03:16, 03:18-03:20, 03:22-03:23, 03:25-03:26, 03:28, 03:30-03:31, 03:33-03:34, 03:36-03:37, 03:43-03:45, 03:47-03:48, 03:50-03:52, 03:54-03:63, 03:66-03:68N, 03:70-03:73, 03:75, 03:77-03:84, 03:86, 03:89	DR17, DR3, Null, -					77	78											89							
*03:02:01-03:03, 03:27, 03:29, 03:38, 03:53, 03:74, 03:88, 03:90	DR18, DR3, -					77		79										89							
*03:07, 03:17, 03:21, 03:24, 03:32, 03:35, 03:39-03:41, 03:49	DR3, -					77												89							
*03:08, 03:65	DR3, -					77	78					83		85											
*03:10	DR3					77	78												91	92					
*03:42, 03:69, 03:87	-					77																			
*03:46, 03:64	-					77	78																		
*03:76	-						78						84			87		89							
*04:01:01-04:05:11, 04:05:13-04:61, 04:63-04:68, 04:70-04:72:02, 04:74-04:104, 04:106-04:121, 04:123-04:145, 04:147-04:158N	DR4, DR4/DR3, Null, -								80																
*04:62, 04:69, 04:73, 04:105:01-04:105:02, 04:122, 04:146	DR4, -								80										90						
*07:01:01:01-07:01:04, 07:03-07:24	DR7, Null, -									81															
*08:01:01-08:02:04, 08:04:01-08:07, 08:11, 08:16-08:17, 08:22, 08:24, 08:26, 08:28, 08:39, 08:42-08:44, 08:50, 08:52	DR8, -										82						88								
*08:03:02-08:03:03, 08:10, 08:12-08:15, 08:18-08:19, 08:23, 08:25, 08:27, 08:29-08:30:03, 08:33-08:34, 08:36:01, 08:37-08:38, 08:45-08:49, 08:51	DR8, -										82														
*08:08	DR8										82						88		90						
*08:09, 14:15 ⁷	DR8										82						88			92					
*08:20, 13:18, 13:47, 13:55, 13:158 ⁸	DR13, -																87	88	89		92				
Well No.	DR	73	74	75	76	77	78	79	80	81	82	83	84	85	86	87	88	89	90	91	92	93	94	95	96

Negative Control



101.701-24/06– including *Taq* pol., IFU-01
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Lot-specific information

Well No.	DR	73	74	75	76	77	78	79	80	81	82	83	84	85	86	87	88	89	90	91	92	93	94	95	96
DRB1 allele ⁴	ser ⁵																								
*08:21	DR8										82					87	88			92					
*08:31, 08:41, 11:67 ⁹	DR8/DR1 1, -										82			85		88									
*08:32, 08:53	-										82			86						92					
*08:35, 08:36:02	-										82									92					
*08:40	-						78				82														
*09:01:02-09:01:05, 09:01:07-09:02:02, 09:04-09:20	DR9, -											83								91					
*09:01:06, 09:03	DR9											83													
*10:01:01-10:05	DR10, -												84												
*11:01:01-11:01:17, 11:04:01-11:04:11, 11:06:01-11:06:03, 11:09-11:10:02, 11:12:01-11:12:02, 11:15, 11:24, 11:27:01-11:30, 11:32-11:33, 11:35, 11:37:01-11:39, 11:43-11:44, 11:46:01-11:47, 11:49:01-11:51, 11:54:01-11:54:02, 11:56, 11:58:01-11:58:02, 11:60-11:62, 11:66, 11:72, 11:74:01-11:75, 11:77-11:78, 11:81, 11:84:01-11:84:02, 11:88, 11:90-11:92, 11:94-11:95, 11:97, 11:99-11:102:02, 11:106, 11:108-11:117, 11:120-11:121, 11:123, 11:126, 11:128-11:129, 11:133-11:134, 11:137, 11:140-11:141, 11:144-11:145	DR11, -													85		87	88								
*11:01:18, 11:08:01-11:08:02, 11:18-11:19:03, 11:42, 11:57, 11:130	DR11, -													85		87									
*11:02:01-11:03, 11:11:01-11:11:02, 11:14:01-11:14:02, 11:16, 11:20-11:21, 11:36, 11:40-11:41, 11:48, 11:63, 11:65:01-11:65:02, 11:68, 11:70, 11:76, 11:85-11:86, 11:93, 11:118, 11:122, 11:124, 11:127, 11:138-11:139	DR11, DR11/DR 13, -						78							85		87	88								
*11:05	DR11													85		88									
*11:07, 11:53, 11:103, 11:105, 11:107, 11:125	DR11, -						77					83		85											
*11:13:01-11:13:02	DR11							w						85						91	92				
*11:17, 11:52	DR14, DR11													85						91	92				
*11:22, 11:98, 11:104, 11:136, 11:143	-													85											
*11:23, 11:25, 11:96	DR11, -													85		87	88			92					
*11:26, 11:34	DR11							79						85											
*11:31, 11:45, 11:64, 11:119	DR11, -													85		87				92					
Well No.	DR	73	74	75	76	77	78	79	80	81	82	83	84	85	86	87	88	89	90	91	92	93	94	95	96

Negative Control



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Well No.	DR	73	74	75	76	77	78	79	80	81	82	83	84	85	86	87	88	89	90	91	92	93	94	95	96
DRB1 allele ⁴	ser ⁵																								
*11:55	DR11													85		88				92					
*11:59, 11:80, 11:83, 11:87, 11:135, 11:142	DR11, -					78							84	85		87	88								
*11:69, 11:82	-													85		88			90						
*11:73, 11:79, 11:131-11:132	-					78								85		87									
*11:89	-													85							92				
*12:01:01-12:01:05, 12:03:02-12:03:03, 12:05-12:12, 12:14, 12:17, 12:24N-12:25, 12:28-12:30, 12:34-12:36, 12:38	DR12, Null, -														86										
*12:02:01-12:02:05, 12:13, 12:15, 12:18-12:21, 12:23, 12:26-12:27, 12:31N-12:33, 12:37	DR12, Null, -														86		88								
*12:04, 12:39	DR12, -											82			86										
*12:16:01-12:16:02	-											82			86		88								
*12:22	-											81	82		86										
*13:01:01-13:02:01, 13:02:03-13:02:08, 13:04, 13:08, 13:16, 13:20, 13:22-13:24, 13:28-13:29, 13:31-13:32, 13:34-13:36, 13:38-13:40, 13:48, 13:51-13:52, 13:54, 13:59, 13:61:01-13:61:02, 13:63-13:65, 13:68-13:70, 13:72-13:76, 13:78-13:80, 13:83-13:84, 13:87, 13:91-13:93, 13:96:01-13:99, 13:102, 13:105-13:107, 13:109, 13:111-13:114, 13:117, 13:121, 13:123-13:128, 13:130-13:131, 13:135, 13:138-13:143, 13:145, 13:147-13:149, 13:153, 13:155	DR13, DR11, DR14, Null, -						78										87	88	89						
*13:02:02	DR13						78													89					
*13:03:01-13:03:06, 13:10, 13:33:01-13:33:03, 13:37, 13:66:01-13:66:02, 13:81, 13:88-13:90, 13:94:01-13:95, 13:101, 13:115, 13:120, 13:133, 13:137N, 13:151-13:152	DR13, Null, -						78									87			89						
*13:05:01-13:05:02, 13:07:01-13:07:02, 13:11:01-13:11:02, 13:14:01-13:14:03, 13:21:01-13:21:02, 13:42, 13:46, 13:49-13:50:02, 13:62, 13:100, 13:108, 13:132, 13:136, 13:150	DR13, DR13/DR11, DR6, -																87	88	89						
Well No.	DR	73	74	75	76	77	78	79	80	81	82	83	84	85	86	87	88	89	90	91	92	93	94	95	96

Negative Control

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Lot-specific information

Well No.	DR	73	74	75	76	77	78	79	80	81	82	83	84	85	86	87	88	89	90	91	92	93	94	95	96
DRB1 allele ⁴	ser ⁵																								
*13:06, 13:12:01-13:12:03, 13:25, 13:30, 13:56, 13:58, 13:60, 13:77, 13:82, 13:110, 13:118, 13:134, 13:157, 13:161	DR13, DR11, DR6, -															87		89							
*13:09	DR13																88	89							
*13:13, 13:119, 13:154, 13:156, 14:84, 14:116 ¹⁰	DR13, -															87		89			92				
*13:15, 13:19, 13:53, 13:57, 13:104	DR13, -						78	79								87	88	89							
*13:17, 13:116	DR13, -						78			81							88								
*13:26:01-13:26:02	DR14, -							79								87	88	89							
*13:27, 13:41, 13:71	DR13						78						84			87	88	89							
*13:43, 13:159	DR13, -						78									87	88			91	92				
*13:44, 13:86	-							79										89							
*13:45	DR13						78									87	88		90	92					
*13:67, 13:103, 13:160	DR13, -															87	88								
*13:85	-						78	79								87		89							
*13:122	-						78									87									
*13:129	-						78						84				88	89							
*13:144	-						78									87	88	89			92				
*13:146	-																88	89			92				
*14:01:01-14:01:02, 14:01:04, 14:04, 14:07:01-14:07:02, 14:10, 14:26, 14:28, 14:31, 14:32:03, 14:35, 14:38-14:39, 14:54:01, 14:55, 14:57, 14:60-14:62, 14:70-14:71, 14:75-14:76, 14:79, 14:86-14:88, 14:90, 14:99, 14:101, 14:104, 14:107, 14:110-14:114, 14:117-14:118, 14:120, 14:122, 14:124-14:125, 14:129, 14:131, 14:138-14:140	DR14, DR1404/DR14, DR4/DR6, -																		90	91	92				
*14:01:03, 14:08, 14:23:02, 14:34, 14:54:02, 14:72, 14:92N, 14:97, 14:126, 14:130, 14:133	DR14, Null, -																				91	92			
*14:02, 14:06:01-14:06:02, 14:09, 14:13, 14:17, 14:20, 14:29-14:30, 14:33, 14:41, 14:47-14:48, 14:51, 14:80, 14:83, 14:94, 14:106, 14:108, 14:121	DR14, DR6, -							79										89		91					
*14:03:01-14:03:02, 14:12:01-14:12:02, 14:40, 14:63, 14:67, 14:77-14:78, 14:85, 14:102, 14:115, 14:135	DR1403/DR14, DR6, -							79								87		89			92				
Well No.	DR	73	74	75	76	77	78	79	80	81	82	83	84	85	86	87	88	89	90	91	92	93	94	95	96

Negative Control



101.701-24/06– including *Taq* pol., IFU-01
101.701-24u/06u – without *Taq* pol., IFU-02

Visit www.olerup-ssp.com for
“Instructions for Use” (IFU)

Lot No.: **63S**

Lot-specific information

Well No.	DR	73	74	75	76	77	78	79	80	81	82	83	84	85	86	87	88	89	90	91	92	93	94	95	96
DRB1 allele ⁴	ser ⁵																								
*14:05:01-14:05:04, 14:14, 14:23:01, 14:23:03-14:23:04, 14:36, 14:43-14:45, 14:56, 14:59, 14:64, 14:91, 14:96, 14:100, 14:103, 14:123, 14:127:01-14:127:02, 14:134	DR14, -																	89		91	92				
*14:11	DR14									82											91	92			
*14:16	DR6						78										87	88		90	91	92			
*14:18, 14:81	DR14, -							79											89		91	92			
*14:19, 14:21, 14:109	DR14, -						78	79									87		89	w					
*14:22, 14:105	DR14, -																87	88		90	91	92			
*14:24	DR14							79										88	89						
*14:25, 14:53, 14:128	DR6, DR13/14, -																	87	88		90	92			
*14:27	DR14							79									87	88	89			92			
*14:32:01-14:32:02	DR14							w												90	91	92			
*14:37	DR14																	88	89	90					
*14:42, 14:136	-																		89			92			
*14:46, 14:52	DR14																				91				
*14:49, 14:119	DR14, -							79												90	91	92			
*14:50	DR14									81											90	91	92		
*14:58	DR14																			90	92				
*14:65	DR6							w											89		91	92			
Well No.	DR	73	74	75	76	77	78	79	80	81	82	83	84	85	86	87	88	89	90	91	92	93	94	95	96

Negative Control

¹The internal positive control primer pairs amplify segments of the human growth hormone gene. The two different control primer pairs give rise to either an internal positive control band of 430 base pairs, for most wells, or a band of 515 base pairs, for some wells.

Well number 73 contains the primer pair giving rise to the longer, 515 bp, internal positive control band in order to help in the correct orientation of the DR low resolution typing.

In addition, well number 82 contains the primer pair giving rise to the longer, 515 bp, internal positive control band in order to allow kit identification.

²The codon, and in parenthesis the nucleotide, in the 2nd exon or 1st intron, matching the specificity-determining 3'-end of the primer is given. Codon and nucleotide numbering as on the www.ebi.ac.uk/imgt/hla web site. The sequence of the 3 terminal nucleotides of the primer is given.

³The codon, and in parenthesis the nucleotide, in the 2nd exon, matching the specificity-determining 3'-end of the primer is given in the anti-sense direction. Codon and nucleotide numbering as on the www.ebi.ac.uk/imgt/hla web site. The sequence of the 3 terminal nucleotides of the primer is given.

⁴The DRB1*03:11:02 allele has been renamed DRB1*03:81.

The sequence of the DRB1*04:05:12 allele has been shown to be identical to DRB1*04:05:14.

The sequence of the DRB1*0702 allele has been shown to be identical to DRB1*07:01:01:01.

The sequence of the DRB1*080301 allele has been shown to be identical to DRB1*08:03:02.

The sequence of the DRB1*09011 allele has been shown to be identical to DRB1*09:01:02.

The sequence of the DRB1*1171 allele has been shown to be identical to DRB1*11:02:01.

The sequence of the DRB1*12031 allele has been shown to be identical to DRB1*12:01:01.

The DRB1*1466 allele has been renamed DRB1*14:32:02.

The sequence of the DRB1*1606 allele has been shown to be identical to DRB1*16:05:01.

The sequence of the DRB3*010101 allele has been shown to be identical to DRB3*01:01:02:01.

The DRB4*0101102N allele has been renamed DRB4*01:03:10:02N.

The sequence of the DRB5*0201 allele has been shown to be identical to DRB5*02:02.

Due to sharing of sequence motifs in codon 38, DRB3*01:14 will also be amplified in primer mixes 77, 78 and 89 in addition to primer mix 93.

The DRB4*02:01N and DRB4*03:01N null alleles will not be amplified by the DR low resolution primer set.

101.701-24/06– including *Taq* pol., IFU-01
101.701-24u/06u – without *Taq* pol., IFU-02

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Lot No.: **63S**

Lot-specific information

Well No.	DR	73	74	75	76	77	78	79	80	81	82	83	84	85	86	87	88	89	90	91	92	93	94	95	96
DRB1 allele ⁴	ser ⁵																								
*14:68, 14:93	DR14, -									82								90	91	92					
*14:69	-															87		90	92						
*14:73	-																88	90	91	92					
*14:74	-															87		90	91	92					
*14:82	-						78											90	91	92					
*14:89	-							79										89		92					
*14:95	-						78											89	91	92					
*14:98	-							79									87	89							
*14:132	-						78												91	92					
*14:137N	Null						78										87	90	91	92					
*15:01:01:01-15:20, 15:22-15:24, 15:26, 15:28-15:33, 15:35-15:65, 15:67-15:94	DR15, DR2, Null, -			75																					
*15:21	DR2			75																w					
*15:25	-			75		77																			
*15:27, 15:34, 15:66	-			75															91						
*16:01:01-16:03, 16:05:01-16:05:02, 16:07-16:17, 16:19-16:23	DR16, Null, -				76																				
*16:04, 16:18	DR16, -				76															w					
DRB3*01:01:02:01-01:15, DRB3*02:01-02:26, DRB3*02:28-02:29N, DRB3*03:01:01-03:03	DR52, Null, -																					93			
DRB3*02:27	-																87					93			
DRB4*01:01:01:01-01:03:01:01, DRB4*01:03:01:03-01:08	DR53, -																						94		
DRB4*01:03:01:02N	Null																		90				94		
DRB5*01:01:01-01:14, DRB5*02:02-02:06	DR51, Null, -																							95	
Well No.	DR	73	74	75	76	77	78	79	80	81	82	83	84	85	86	87	88	89	90	91	92	93	94	95	96

Negative Control

⁵The serological reactivity of all DRB alleles is not known. In this table we use the expert-assigned serological grouping in Tissue Antigens (2009) 73:95-170 and the serological grouping of the sequence-defined allele.

⁶Primer mix 96 contains a negative control, which will amplify more than 95% of HLA amplicons as well as the amplicons generated by control primer pairs. PCR product sizes range from 75 to 200 base pairs. The PCR product generated by the control primer pair is 430 base pairs.

⁷The DRB1*08:09 and the DRB1*14:15 alleles yield identical amplification patterns with the DR low resolution primer set. These alleles can be separated by the respective high resolution primer sets.

⁸The DRB1*08:20 and the DRB1*13:18, 13:47, 13:55 and 13:158 alleles yield identical amplification patterns with the DR low resolution primer set. These alleles can be separated by the respective high resolution primer sets.

⁹The DRB1*08:31, 08:41 and DRB1*11:67 alleles yield identical amplification patterns with the DR low resolution primer set. These alleles can be separated by the respective high resolution primer sets.

¹⁰The DRB1*13:13, 13:119, 13:154 and 13:156 and the DRB1*14:84 and 14:116 alleles yield identical amplification patterns with the DR low resolution primer set. These alleles can be separated by the respective high resolution primer sets.

‘ser’, serological HLA specificity.

‘w’, may be weakly amplified.

101.701-24/06– including *Taq* pol., IFU-01
 101.701-24u/06u – without *Taq* pol., IFU-02

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Lot No.: **63S**

Lot-specific information

CELL LINE VALIDATION SHEET																				
HLA-A low resolution primer set																				
				Lot No.:	Well															
					1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
	IHWC cell line	A*	A*		201321701	201211702	201321703	201211704	201321705	201211706	201211707	201211708	201211709	201211710	201211711	201321712	201211713	201321714	201321715	201211716
1	9001 SA	*24:02			-	-	-	-	+	-	+	-	-	-	-	-	-	-	-	-
2	9280 LK707	*02:01			-	+	-	-	-	-	-	-	-	-	-	-	-	-	-	-
3	9011 E4181324	*01:01			+	-	-	+	-	-	-	-	-	-	-	-	-	-	-	-
4	9275 GU373	*30:01			-	-	-	-	-	-	-	-	-	-	-	-	-	-	+	-
5	9009 KAS011	*01:01			+	-	-	+	-	-	-	-	-	-	-	-	-	-	-	-
6	9353 SM	*02:01	*26:03		-	+	-	-	-	-	-	+	-	-	+	-	+	-	-	-
7	9020 QBL	*26:01			-	-	-	-	-	-	-	+	-	+	-	-	+	-	-	-
8	9025 DEU	*31:01			-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	+
9	9026 YAR	*26:01			-	-	-	-	-	-	-	+	-	+	-	-	+	-	-	-
10	9107 LKT3	*24:02			-	-	-	-	+	-	+	-	-	-	-	-	-	-	-	-
11	9051 PITOUT	*29:02			-	-	-	-	-	-	-	-	-	-	-	-	-	+	-	-
12	9052 DBB	*02:01			-	+	-	-	-	-	-	-	-	-	-	-	-	-	-	-
13	9004 JESTHOM	*02:01			-	+	-	-	-	-	-	-	-	-	-	-	-	-	-	-
14	9071 OLGA	*31:01			-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	+
15	9075 DKB	*24:02			-	-	-	-	+	-	+	-	-	-	-	-	-	-	-	-
16	9037 SWEIG007	*29:02			-	-	-	-	-	-	-	-	-	-	-	-	-	+	-	-
17	9282 CTM3953540	*03:01	*80:01		-	-	+	-	-	+	-	-	-	-	-	-	+	-	-	-
18	9257 32367	*33:03	*74:01		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
19	9038 BM16	*02:01			-	+	-	-	-	-	-	-	-	-	-	-	-	-	-	-
20	9059 SLE005	*02:01			-	+	-	-	-	-	-	-	-	-	-	-	-	-	-	-
21	9064 AMALA	*02:17			-	+	-	-	-	-	W	-	-	-	-	-	-	-	-	-
22	9056 KOSE	*02:01			-	+	-	-	-	-	-	-	-	-	-	-	-	-	-	-
23	9124 IHL	*02:01	*34:01		-	+	-	-	-	-	-	+	-	-	+	+	-	-	-	-
24	9035 JBUSH	*32:01			-	-	-	-	-	-	-	-	+	-	-	-	-	-	-	-
25	9049 IBW9	*33:01			-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
26	9285 WT49	*02:05			-	+	-	-	-	-	-	-	-	-	-	-	-	-	-	-
27	9191 CH1007	*24:10	*29:01		-	-	-	-	+	-	+	-	-	-	-	-	-	+	-	-
28	9320 BEL5GB	*02:01	*29:02		-	+	-	-	-	-	-	-	-	-	-	-	-	+	-	-
29	9050 MOU	*29:02			-	-	-	-	-	-	-	-	-	-	-	-	-	+	-	-
30	9021 RSH	*30:01	*68:02		-	-	-	-	-	-	-	+	-	-	-	-	-	-	+	-
31	9019 DUCAF	*30:02			-	-	-	-	-	-	-	-	-	-	-	-	-	-	+	-
32	9297 HAG	*02:01			-	+	-	-	-	-	-	-	-	-	-	-	-	-	-	-
33	9098 MT14B	*31:01			-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	+
34	9104 DHIF	*31:01			-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	+
35	9302 SSTO	*32:01			-	-	-	-	-	-	-	-	+	-	-	-	-	-	-	-
36	9024 KT17	*02:06	*11:01		-	+	-	+	-	-	-	-	-	+	-	-	-	-	-	-
37	9065 HHKB	*03:01			-	-	+	-	-	-	-	-	-	-	-	-	+	-	-	-
38	9099 LZL	*02:17			-	+	-	-	-	-	W	-	-	-	-	-	-	-	-	-
39	9315 CML	*01:01	*03:01		+	-	+	+	-	-	-	-	-	-	-	-	+	-	-	-
40	9134 WHONP199	*02:07	*30:01		-	+	-	-	-	-	-	-	-	-	-	-	-	-	+	-
41	9055 H0301	*03:01			-	-	+	-	-	-	-	-	-	-	-	-	+	-	-	-
42	9066 TAB089	*02:07			-	+	-	-	-	-	-	-	-	-	-	-	-	-	-	-
43	9076 T7526	*02:06	*02:07		-	+	-	-	-	-	-	-	-	-	-	-	-	-	-	-
44	9057 TEM	*66:01			-	-	-	-	-	-	-	+	-	-	+	-	+	-	-	-
45	9239 SHJO	*23:01	*24:02		-	-	-	-	+	+	+	-	-	-	-	-	-	-	-	-
46	9013 SCHU	*03:01			-	-	+	-	-	-	-	-	-	-	-	-	+	-	-	-
47	9045 TUBO	*02:16	*03:01		-	+	+	-	-	-	-	-	-	-	-	-	+	-	-	-
48	9303 TER-ND	*02:01	*11:01		-	+	-	+	-	-	-	-	-	-	+	-	-	-	-	-



101.701-24/06– including *Taq* pol., IFU-01
 101.701-24u/06u – without *Taq* pol., IFU-02

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 “Instructions for Use” (IFU)

Lot No.: **63S**

Lot-specific information

CELL LINE VALIDATION SHEET				Well							
HLA-A low resolution primer set				17	18	19	20	21	22	23	24
			Lot No.:	201211717	201321718	201321719	201211720	201321721	201211722	201211723	201211724
	IHWC cell line	A*	A*								
1	9001 SA	*24:02		-	-	-	-	-	-	-	-
2	9280 LK707	*02:01		-	-	-	-	-	-	-	-
3	9011 E4181324	*01:01		-	-	-	-	-	-	-	-
4	9275 GU373	*30:01		-	-	-	-	-	-	-	-
5	9009 KAS011	*01:01		-	-	-	-	-	-	-	-
6	9353 SM	*02:01	*26:03	-	-	-	-	-	-	+	-
7	9020 QBL	*26:01		-	-	-	-	-	-	-	-
8	9025 DEU	*31:01		-	-	-	-	-	-	-	-
9	9026 YAR	*26:01		-	-	-	-	-	-	-	-
10	9107 LKT3	*24:02		-	-	-	-	-	-	-	-
11	9051 PITOUT	*29:02		-	-	-	-	-	-	-	-
12	9052 DBB	*02:01		-	-	-	-	-	-	-	-
13	9004 JESTHOM	*02:01		-	-	-	-	-	-	-	-
14	9071 OLGA	*31:01		-	-	-	-	-	-	-	-
15	9075 DKB	*24:02		-	-	-	-	-	-	-	-
16	9037 SWEIG007	*29:02		-	-	-	-	-	-	-	-
17	9282 CTM3953540	*03:01	*80:01	-	-	-	-	-	-	+	-
18	9257 32367	*33:03	*74:01	-	+	+	-	-	-	-	-
19	9038 BM16	*02:01		-	-	-	-	-	-	-	-
20	9059 SLE005	*02:01		-	-	-	-	-	-	-	-
21	9064 AMALA	*02:17		-	-	-	-	-	-	-	-
22	9056 KOSE	*02:01		-	-	-	-	-	-	-	-
23	9124 IHL	*02:01	*34:01	-	-	-	-	-	-	-	-
24	9035 JBUSH	*32:01		+	-	-	-	-	-	-	-
25	9049 IBW9	*33:01		-	+	-	-	-	-	-	-
26	9285 WT49	*02:05		-	-	-	-	-	-	-	-
27	9191 CH1007	*24:10	*29:01	-	-	-	-	-	-	-	-
28	9320 BEL5GB	*02:01	*29:02	-	-	-	-	-	-	-	-
29	9050 MOU	*29:02		-	-	-	-	-	-	-	-
30	9021 RSH	*30:01	*68:02	-	-	-	+	-	-	-	-
31	9019 DUCAF	*30:02		-	-	-	-	-	-	-	-
32	9297 HAG	*02:01		-	-	-	-	-	-	-	-
33	9098 MT14B	*31:01		-	-	-	-	-	-	-	-
34	9104 DHIF	*31:01		-	-	-	-	-	-	-	-
35	9302 SSTO	*32:01		+	-	-	-	-	-	-	-
36	9024 KT17	*02:06	*11:01	-	-	-	-	-	-	-	-
37	9065 HHKB	*03:01		-	-	-	-	-	-	-	-
38	9099 LZL	*02:17		-	-	-	-	-	-	-	-
39	9315 CML	*01:01	*03:01	-	-	-	-	-	-	-	-
40	9134 WHONP199	*02:07	*30:01	-	-	-	-	-	-	-	-
41	9055 H0301	*03:01		-	-	-	-	-	-	-	-
42	9066 TAB089	*02:07		-	-	-	-	-	-	-	-
43	9076 T7526	*02:06	*02:07	-	-	-	-	-	-	-	-
44	9057 TEM	*66:01		-	-	-	-	-	-	-	-
45	9239 SHJO	*23:01	*24:02	-	-	-	-	-	-	-	-
46	9013 SCHU	*03:01		-	-	-	-	-	-	-	-
47	9045 TUBO	*02:16	*03:01	-	-	-	-	-	-	-	-
48	9303 TER-ND	*02:01	*11:01	-	-	-	-	-	-	-	-

101.701-24/06– including *Taq* pol., IFU-01
 101.701-24u/06u – without *Taq* pol., IFU-02

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 “Instructions for Use” (IFU)

Lot No.: **63S**

Lot-specific information

CELL LINE VALIDATION SHEET																				
HLA-B low resolution SSP kit																				
				Well																
				25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	
				Prod. No.:	201318701	201318702	201321803	201318704	201318705	201320806	201318707	201321808	201321809	201318710	201318711	201318712	201318713	201318714	201318715	201318716
	IHWC cell line	B*																		
1	9001 SA	*07:02		+	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
2	9280 LK707	*52:01	*73:01	-	-	-	-	-	-	-	-	-	+	-	-	-	-	-	-	-
3	9011 E4181324	*52:01		-	-	-	-	-	-	-	-	-	+	-	-	-	-	-	-	-
4	9275 GU373	*15:10	*53:01	-	-	-	-	-	-	-	-	+	-	-	+	-	+	-	-	-
5	9009 KAS011	*37:01		-	-	-	-	-	-	-	-	-	-	-	-	+	-	-	-	-
6	9353 SM	*39:01	*51:01	-	-	-	-	+	-	-	-	-	+	-	-	-	-	-	-	-
7	9020 QBL	*18:01		-	-	-	-	-	-	-	-	-	-	-	-	+	-	-	+	-
8	9025 DEU	*35:01		-	-	-	-	-	-	-	-	-	-	-	-	+	-	-	-	-
9	9026 YAR	*38:01		-	-	-	-	+	-	-	-	-	-	-	-	-	-	-	-	-
10	9107 LKT3	*54:01		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
11	9051 PITOUT	*44:03		-	-	-	+	-	-	-	-	-	-	-	-	-	-	-	-	-
12	9052 DBB	*57:01		-	-	-	-	-	-	-	-	-	-	-	-	+	-	-	-	-
13	9004 JESTHOM	*27:05		-	-	-	-	+	-	-	-	-	-	-	-	-	-	-	-	+
14	9071 OLGA	*15:01	*15:20	-	-	-	-	-	-	-	+	-	-	-	-	+	-	-	-	-
15	9075 DKB	*40:01		-	-	-	+	-	-	-	-	-	-	-	-	-	-	-	-	-
16	9037 SWEIG007	*40:02		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
17	9282 CTM3953540	*08:01	*55:01	-	+	-	-	-	-	-	-	+	-	-	-	-	-	-	-	-
18	9257 32367	*14:01	*56:01	-	-	-	+	+	-	-	-	-	-	-	-	-	-	-	-	-
19	9038 BM16	*18:01		-	-	-	-	-	-	-	-	-	-	-	-	+	-	-	+	-
20	9059 SLE005	*40:01		-	-	-	+	-	-	-	-	-	-	-	-	-	-	-	-	-
21	9064 AMALA	*15:01		-	-	-	-	-	-	-	+	-	-	-	-	+	-	-	-	-
22	9056 KOSE	*35:03		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
23	9124 IHL	*40:02	*56:02	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
24	9035 JBUSH	*38:01		-	-	-	-	+	-	-	-	-	-	-	-	-	-	-	-	-
25	9049 IBW9	*14:02		-	-	-	+	-	+	-	-	-	-	-	-	-	-	-	-	-
26	9285 WT49	*58:01		-	-	-	-	-	-	-	-	-	-	-	-	+	-	-	-	-
27	9191 CH1007	*07:05	*51:01	+	-	-	-	-	-	-	-	-	+	-	-	-	-	-	-	-
28	9320 BEL5GB	*44:02	*44:03	-	-	-	+	-	-	-	-	-	-	-	-	-	-	-	-	-
29	9050 MOU	*44:03		-	-	-	+	-	-	-	-	-	-	-	-	-	-	-	-	-
30	9021 RSH	*42:01		-	-	-	-	-	-	-	-	+	-	-	-	-	-	-	-	-
31	9019 DUCAF	*18:01		-	-	-	-	-	-	-	-	-	-	-	-	+	-	-	+	-
32	9297 HAG	*41:02		-	-	-	+	-	-	-	-	+	-	-	-	-	-	-	-	-
33	9098 MT14B	*40:01		-	-	-	+	-	-	-	-	-	-	-	-	-	-	-	-	-
34	9104 DHIF	*38:01		-	-	-	-	+	-	-	-	-	-	-	-	-	-	-	-	-
35	9302 SSTO	*44:02		-	-	-	+	-	-	-	-	-	-	-	-	-	-	-	-	-
36	9024 KT17	*15:01	*35:01	-	-	-	-	-	-	-	+	-	-	-	-	+	-	-	-	-
37	9065 HHKB	*07:02		+	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
38	9099 LZL	*15:01		-	-	-	-	-	-	-	+	-	-	-	-	+	-	-	-	-
39	9315 CML	*08:01	*27:05	-	+	-	-	+	-	-	+	-	-	-	-	-	-	-	-	+
40	9134 WHONP199	*13:02	*46:01	-	-	+	+	+	-	-	+	-	-	+	-	+	-	-	-	-
41	9055 H0301	*14:02		-	-	-	+	-	+	-	-	-	-	-	-	-	-	-	-	-
42	9066 TAB089	*46:01		-	-	-	-	-	-	-	+	-	-	-	-	+	-	-	-	-
43	9076 T7526	*46:01		-	-	-	-	-	-	-	+	-	-	-	-	+	-	-	-	-
44	9057 TEM	*38:01		-	-	-	-	+	-	-	-	-	-	-	-	-	-	-	-	-
45	9239 SHJO	*42:01	*50:01	-	-	-	+	-	-	-	+	-	-	-	-	-	-	-	-	-
46	9013 SCHU	*07:02		+	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
47	9045 TUBO	*51:01		-	-	-	-	-	-	-	-	-	+	-	-	-	-	-	-	-
48	9303 TER-ND	*35:01	*44:03	-	-	-	+	-	-	-	-	-	-	-	-	+	-	-	-	-

101.701-24/06– including *Taq* pol., IFU-01
 101.701-24u/06u – without *Taq* pol., IFU-02

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 “Instructions for Use” (IFU)

Lot No.: 63S

Lot-specific information

CELL LINE VALIDATION SHEET				Well																
HLA-B low resolution SSP kit																				
				Prod. No.:																
				201318717	201321818	201318719	201318720	201318721	201320822	201320823	201320824	201318725	201318726	201318727	201318728	201321829	201318730	201318731	201318732	
IHWC cell line	B*																			
1	9001 SA	*07:02		-	-	-	-	-	-	-	-	+	-	-	-	+	-	-	-	-
2	9280 LK707	*52:01	*73:01	-	-	-	-	-	-	-	-	+	-	-	-	+	-	-	-	-
3	9011 E4181324	*52:01		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
4	9275 GU373	*15:10	*53:01	+	-	+	-	-	-	-	-	-	-	-	-	-	-	-	-	-
5	9009 KAS011	*37:01		+	-	-	+	-	-	-	-	-	-	-	-	+	-	-	-	-
6	9353 SM	*39:01	*51:01	-	-	-	-	+	-	+	+	-	-	-	-	-	+	-	-	-
7	9020 QBL	*18:01		-	+	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
8	9025 DEU	*35:01		+	+	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
9	9026 YAR	*38:01		-	-	-	-	+	+	+	-	-	-	-	-	-	-	-	-	-
10	9107 LKT3	*54:01		-	-	-	-	-	-	-	-	-	-	-	-	+	-	-	-	+
11	9051 PITOUT	*44:03		+	-	-	-	-	-	-	-	-	-	-	-	-	+	-	-	-
12	9052 DBB	*57:01		+	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
13	9004 JESTHOM	*27:05		-	-	-	-	-	-	-	-	-	-	-	-	+	-	-	-	+
14	9071 OLGA	*15:01	*15:20	+	-	+	-	-	-	-	-	-	-	-	-	-	-	-	-	-
15	9075 DKB	*40:01		-	-	-	-	-	-	-	+	+	-	-	-	-	-	-	-	-
16	9037 SWEIG007	*40:02		-	-	-	-	-	-	-	-	-	+	-	-	-	-	-	-	-
17	9282 CTM3953540	*08:01	*55:01	-	-	-	-	-	-	-	+	-	-	+	+	-	-	-	-	+
18	9257 32367	*14:01	*56:01	-	-	-	-	-	-	+	+	-	-	-	+	-	-	-	-	+
19	9038 BM16	*18:01		-	+	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
20	9059 SLE005	*40:01		-	-	-	-	-	-	-	+	+	-	-	-	-	-	-	-	-
21	9064 AMALA	*15:01		-	-	+	-	-	-	-	-	-	-	-	-	-	-	-	-	-
22	9056 KOSE	*35:03		+	+	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
23	9124 IHL	*40:02	*56:02	-	-	-	-	-	-	-	-	-	+	-	+	-	-	-	-	+
24	9035 JBUSH	*38:01		-	-	-	-	+	+	+	-	-	-	-	-	-	-	-	-	-
25	9049 IBW9	*14:02		-	-	-	-	-	-	+	+	-	-	-	-	-	-	-	-	-
26	9285 WT49	*58:01		+	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
27	9191 CH1007	*07:05	*51:01	-	-	-	-	-	-	-	-	+	-	-	-	+	-	+	-	-
28	9320 BEL5GB	*44:02	*44:03	+	-	-	-	-	-	-	-	-	-	-	-	-	+	-	-	-
29	9050 MOU	*44:03		+	-	-	-	-	-	-	-	-	-	-	-	+	-	-	-	-
30	9021 RSH	*42:01		-	-	-	-	-	-	-	+	-	-	+	+	-	-	-	-	-
31	9019 DUCAF	*18:01		-	+	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
32	9297 HAG	*41:02		-	-	-	-	-	-	-	+	-	-	+	-	-	-	-	-	-
33	9098 MT14B	*40:01		-	-	-	-	-	-	-	+	+	-	-	-	-	-	-	-	-
34	9104 DHIF	*38:01		-	-	-	-	+	+	+	-	-	-	-	-	-	-	-	-	-
35	9302 SSTO	*44:02		+	-	-	-	-	-	-	-	-	-	-	-	+	-	-	-	-
36	9024 KT17	*15:01	*35:01	+	+	+	-	-	-	-	-	-	-	-	-	-	-	-	-	-
37	9065 HHKB	*07:02		-	-	-	-	-	-	-	+	-	-	-	+	-	-	-	-	-
38	9099 LZL	*15:01		-	-	+	-	-	-	-	-	-	-	-	-	-	-	-	-	-
39	9315 CML	*08:01	*27:05	-	-	-	-	-	-	-	+	-	-	+	+	-	-	-	-	+
40	9134 WHONP199	*13:02	*46:01	-	-	-	-	-	-	-	-	-	-	+	+	-	-	-	-	+
41	9055 H0301	*14:02		-	-	-	-	-	-	+	+	-	-	-	-	-	-	-	-	-
42	9066 TAB089	*46:01		-	-	-	-	-	-	-	-	-	-	-	+	-	-	-	-	+
43	9076 T7526	*46:01		-	-	-	-	-	-	-	-	-	-	-	+	-	-	-	-	+
44	9057 TEM	*38:01		-	-	-	-	+	+	+	-	-	-	-	-	-	-	-	-	-
45	9239 SHJO	*42:01	*50:01	-	-	-	-	-	-	-	+	-	-	+	+	-	-	-	-	-
46	9013 SCHU	*07:02		-	-	-	-	-	-	-	+	-	-	-	+	-	-	-	-	-
47	9045 TUBO	*51:01		-	-	-	-	-	-	-	-	-	-	-	-	-	-	+	-	-
48	9303 TER-ND	*35:01	*44:03	+	+	-	-	-	-	-	-	-	-	-	-	+	-	-	-	-



101.701-24/06– including *Taq* pol., IFU-01
101.701-24u/06u – without *Taq* pol., IFU-02

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Lot No.: **63S**

Lot-specific information

CELL LINE VALIDATION SHEET				Well																
HLA-B low resolution SSP kit																				
				Well																
				57	58	59	60	61	62	63	64	65	66	67	68	69	70	71	72	
				201318733	201318734	201318735	201318736	201318737	201318738	201318739	201318740	201318741	201321842	201318743	201318744	201318745	201318746	201318747	201321848	
IHC cell line		B*																		
1	9001	SA	*07:02	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	+	+
2	9280	LK707	*52:01	*73:01	-	-	+	+	-	+	-	-	-	-	-	+	+	+	-	-
3	9011	E4181324	*52:01		-	-	+	+	-	+	-	-	-	-	-	-	+	-	-	-
4	9275	GU373	*15:10	*53:01	-	-	-	+	-	-	-	-	-	-	+	-	+	+	-	-
5	9009	KAS011	*37:01		-	-	-	-	-	+	-	-	-	-	-	-	+	-	-	-
6	9353	SM	*39:01	*51:01	-	-	+	+	-	-	-	-	-	-	-	+	-	+	+	-
7	9020	QBL	*18:01		-	-	-	-	-	-	-	-	-	-	-	+	-	-	+	-
8	9025	DEU	*35:01		-	-	-	-	-	-	-	-	-	-	+	-	-	+	-	-
9	9026	YAR	*38:01		-	-	-	-	-	-	-	-	-	-	-	-	-	+	-	-
10	9107	LKT3	*54:01		-	-	-	-	-	-	+	+	-	-	-	-	-	-	+	-
11	9051	PITOUT	*44:03		-	-	-	-	-	+	-	-	-	-	-	-	-	+	-	-
12	9052	DBB	*57:01		-	-	-	+	-	-	-	-	-	+	-	-	-	+	-	-
13	9004	JESTHOM	*27:05		-	-	-	-	-	+	-	-	-	-	-	-	+	-	-	-
14	9071	OLGA	*15:01	*15:20	-	-	-	-	-	+	-	-	-	-	-	+	-	+	-	-
15	9075	DKB	*40:01		-	-	-	-	+	+	-	-	-	-	-	-	-	+	-	-
16	9037	SWEIG007	*40:02		-	-	-	-	+	+	-	-	-	-	-	-	-	-	+	-
17	9282	CTM3953540	*08:01	*55:01	-	-	+	-	-	-	-	+	-	-	-	-	-	-	+	+
18	9257	32367	*14:01	*56:01	-	-	-	-	-	-	-	-	+	-	-	-	-	-	+	-
19	9038	BM16	*18:01		-	-	-	-	-	-	-	-	-	-	+	-	-	+	-	-
20	9059	SLE005	*40:01		-	-	-	-	+	+	-	-	-	-	-	-	-	-	+	-
21	9064	AMALA	*15:01		-	-	-	-	-	+	-	-	-	-	-	+	-	+	-	-
22	9056	KOSE	*35:03		-	-	-	-	-	-	-	-	-	-	+	-	-	+	-	-
23	9124	IHL	*40:02	*56:02	-	-	-	-	+	+	-	-	+	-	+	-	-	+	-	-
24	9035	JBUSH	*38:01		-	-	-	-	-	-	-	-	-	-	-	-	-	+	-	-
25	9049	IBW9	*14:02		-	-	-	-	-	-	-	-	-	-	-	-	-	-	+	-
26	9285	WT49	*58:01		-	-	-	+	-	-	-	-	-	+	-	-	+	-	-	-
27	9191	CH1007	*07:05	*51:01	-	-	+	+	-	-	-	-	-	-	-	+	-	+	+	+
28	9320	BEL5GB	*44:02	*44:03	-	-	-	-	-	+	+	-	-	-	-	-	+	-	-	-
29	9050	MOU	*44:03		-	-	-	-	-	+	-	-	-	-	-	-	+	-	-	-
30	9021	RSH	*42:01		-	-	-	-	-	-	-	-	-	-	-	-	-	+	+	-
31	9019	DUCAF	*18:01		-	-	-	-	-	-	-	-	-	-	+	-	-	+	-	-
32	9297	HAG	*41:02		-	-	-	-	+	+	-	-	-	-	-	-	-	+	+	-
33	9098	MT14B	*40:01		-	-	-	-	+	+	-	-	-	-	-	-	-	+	-	-
34	9104	DHIF	*38:01		-	-	-	-	-	-	-	-	-	-	-	-	+	-	-	-
35	9302	SSTO	*44:02		-	-	-	-	-	+	+	-	-	-	-	-	+	-	-	-
36	9024	KT17	*15:01	*35:01	-	-	-	-	-	+	-	-	-	-	+	+	-	+	-	-
37	9065	HHKB	*07:02		-	-	-	-	-	-	-	-	-	-	-	-	-	+	+	-
38	9099	LZL	*15:01		-	-	-	-	-	+	-	-	-	-	-	+	-	+	-	-
39	9315	CML	*08:01	*27:05	-	-	-	-	-	+	-	-	-	-	-	-	+	+	+	-
40	9134	WHONP199	*13:02	*46:01	-	-	-	-	-	+	-	-	-	-	-	+	+	+	-	-
41	9055	H0301	*14:02		-	-	-	-	-	-	-	-	-	-	-	-	-	+	-	-
42	9066	TAB089	*46:01		-	-	-	-	-	-	-	-	-	-	-	+	-	+	-	-
43	9076	T7526	*46:01		-	-	-	-	-	-	-	-	-	-	-	+	-	+	-	-
44	9057	TEM	*38:01		-	-	-	-	-	-	-	-	-	-	-	-	+	-	-	-
45	9239	SHJO	*42:01	*50:01	-	-	+	-	+	+	-	-	+	-	-	-	-	+	+	-
46	9013	SCHU	*07:02		-	-	-	-	-	-	-	-	-	-	-	-	-	+	+	-
47	9045	TUBO	*51:01		-	-	+	+	-	-	-	-	-	-	+	-	+	+	-	-
48	9303	TER-ND	*35:01	*44:03	-	-	-	-	-	+	-	-	-	-	+	-	+	+	-	-

101.701-24/06– including *Taq* pol., IFU-01
 101.701-24u/06u – without *Taq* pol., IFU-02

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Lot No.: **63S**

Lot-specific information

CELL LINE VALIDATION SHEET																				
DR low resolution primer set																				
				Prod. No.:	Well															
					73	74	75	76	77	78	79	80	81	82	83	84	85	86	87	88
					201321901	201209002	201209003	201209004	201209005	201209006	201209007	201209008	201209009	201209010	201209011	201209012	201209013	201209014	201209015	201209016
	IHWC cell line	DRB1																		
1	9001 SA	*01:01			+	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
2	9280 LK707	*15:02	*04:05		-	-	+	-	-	-	-	-	+	-	-	-	-	-	-	
3	9011 E4181324	*15:02			-	-	+	-	-	-	-	-	-	-	-	-	-	-	-	
4	9275 GU373	*03:01			-	-	-	-	+	+	-	-	-	-	-	-	-	-	-	
5	9009 KAS011	*16:01			-	-	-	+	-	-	-	-	-	-	-	-	-	-	-	
6	9353 SM	*04:07	*08:03		-	-	-	-	-	-	-	-	+	-	+	-	-	-	-	
7	9020 QBL	*03:01			-	-	-	-	+	+	-	-	-	-	-	-	-	-	-	
8	9025 DEU	*04:01			-	-	-	-	-	-	-	+	-	-	-	-	-	-	-	
9	9026 YAR	*04:02			-	-	-	-	-	-	-	+	-	-	-	-	-	-	-	
10	9107 LKT3	*04:05			-	-	-	-	-	-	-	+	-	-	-	-	-	-	-	
11	9051 PITOUT	*07:01			-	-	-	-	-	-	-	-	+	-	-	-	-	-	-	
12	9052 DBB	*07:01			-	-	-	-	-	-	-	-	+	-	-	-	-	-	-	
13	9004 JESTHOM	*01:01			+	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
14	9071 OLGA	*08:02			-	-	-	-	-	-	-	-	-	+	-	-	-	-	+	
15	9075 DKB	*09:01			-	-	-	-	-	-	-	-	-	-	+	-	-	-	-	
16	9037 SWEIG007	*11:01			-	-	-	-	-	-	-	-	-	-	-	+	-	+	+	
17	9282 CTM3953540	*03:01	*13:01		-	-	-	-	+	+	-	-	-	-	-	-	-	+	+	
18	9257 32367	*09:01	*11:01		-	-	-	-	-	-	-	-	-	-	+	-	+	-	+	
19	9038 BM16	*12:01			-	-	-	-	-	-	-	-	-	-	-	-	+	-	-	
20	9059 SLE005	*13:02			-	-	-	-	-	+	-	-	-	-	-	-	-	+	+	
21	9064 AMALA	*14:02			-	-	-	-	-	-	+	-	-	-	-	-	-	-	-	
22	9056 KOSE	*13:02	*14:54		-	-	-	-	-	+	-	-	-	-	-	-	-	+	+	
23	9124 IHL	*08:03	*14:14		-	-	-	-	-	-	-	-	-	+	-	-	-	-	-	
24	9035 JBUSH	*11:01			-	-	-	-	-	-	-	-	-	-	-	+	-	+	+	
25	9049 IBW9	*07:01			-	-	-	-	-	-	-	-	+	-	-	-	-	-	-	
26	9285 WT49	*03:01			-	-	-	-	+	+	-	-	-	-	-	-	-	-	-	
27	9191 CH1007	*04:05	*10:01		-	-	-	-	-	-	-	+	-	-	-	+	-	-	-	
28	9320 BEL5GB	*04:16	*07:01		-	-	-	-	-	-	-	+	+	-	-	-	-	-	-	
29	9050 MOU	*07:01			-	-	-	-	-	-	-	-	+	-	-	-	-	-	-	
30	9021 RSH	*03:02			-	-	-	-	+	-	+	-	-	-	-	-	-	-	-	
31	9019 DUCAF	*03:01			-	-	-	-	+	+	-	-	-	-	-	-	-	-	-	
32	9297 HAG	*13:03			-	-	-	-	-	+	-	-	-	-	-	-	-	+	-	
33	9098 MT14B	*04:04			-	-	-	-	-	-	-	-	+	-	-	-	-	-	-	
34	9104 DHIF	*11:01			-	-	-	-	-	-	-	-	-	-	-	+	-	+	+	
35	9302 SSTO	*04:03			-	-	-	-	-	-	-	+	-	-	-	-	-	-	-	
36	9024 KT17	*04:03	*04:06		-	-	-	-	-	-	-	+	-	-	-	-	-	-	-	
37	9065 HHKB	*13:01			-	-	-	-	-	+	-	-	-	-	-	-	-	+	+	
38	9099 LZL	*14:02			-	-	-	-	-	-	+	-	-	-	-	-	-	-	-	
39	9315 CML	*03:01	*04:01		-	-	-	-	+	+	-	+	-	-	-	-	-	-	-	
40	9134 WHONP199	*07:01	*09:01		-	-	-	-	-	-	-	-	+	-	+	-	-	-	-	
41	9055 H0301	*13:02			-	-	-	-	-	+	-	-	-	-	-	-	-	+	+	
42	9066 TAB089	*08:03			-	-	-	-	-	-	-	-	-	+	-	-	-	-	-	
43	9076 T7526	*09:01			-	-	-	-	-	-	-	-	-	-	+	-	-	-	-	
44	9057 TEM	*14:01			-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
45	9239 SHJO	*07:01			-	-	-	-	-	-	-	-	+	-	-	-	-	-	-	
46	9013 SCHU	*15:01			-	-	+	-	-	-	-	-	-	-	-	-	-	-	-	
47	9045 TUBO	*11:04	*12:01		-	-	-	-	-	-	-	-	-	-	-	+	+	+	+	
48	9303 TER-ND	*01:03			-	+	-	-	-	-	-	-	-	-	-	-	-	-	-	

101.701-24/06– including *Taq* pol., IFU-01
 101.701-24u/06u – without *Taq* pol., IFU-02

Visit www.olerup-ssp.com for
 “Instructions for Use” (IFU)

Lot No.: **63S**

Lot-specific information

CELL LINE VALIDATION SHEET											
DR low resolution primer set											
				Prod. No.:	Well						
					89	90	91	92	93	94	95
					201209017	201209018	201209019	201321920	201209029	201209030	201209031
	IHWC cell line	DRB1									
1	9001 SA	*01:01			-	-	-	-	-	-	-
2	9280 LK707	*15:02	*04:05		-	-	-	-	-	+	+
3	9011 E4181324	*15:02			-	-	-	-	-	-	+
4	9275 GU373	*03:01			+	-	-	-	+	-	-
5	9009 KAS011	*16:01			-	-	-	-	-	-	+
6	9353 SM	*04:07	*08:03		-	-	-	-	-	+	-
7	9020 QBL	*03:01			+	-	-	-	+	-	-
8	9025 DEU	*04:01			-	-	-	-	-	+	-
9	9026 YAR	*04:02			-	-	-	-	-	+	-
10	9107 LKT3	*04:05			-	-	-	-	-	+	-
11	9051 PITOUT	*07:01			-	-	-	-	-	+	-
12	9052 DBB	*07:01			-	-	-	-	-	+	-
13	9004 JESTHOM	*01:01			-	-	-	-	-	-	-
14	9071 OLGA	*08:02			-	-	-	-	-	-	-
15	9075 DKB	*09:01			-	-	+	-	-	+	-
16	9037 SWEIG007	*11:01			-	-	-	-	+	-	-
17	9282 CTM3953540	*03:01	*13:01		+	-	-	-	+	-	-
18	9257 32367	*09:01	*11:01		-	-	+	-	+	+	-
19	9038 BM16	*12:01			-	-	-	-	+	-	-
20	9059 SLE005	*13:02			+	-	-	-	+	-	-
21	9064 AMALA	*14:02			+	-	+	-	+	-	-
22	9056 KOSE	*13:02	*14:54		+	+	+	+	+	-	-
23	9124 IHL	*08:03	*14:14		+	-	+	+	+	-	-
24	9035 JBUSH	*11:01			-	-	-	-	+	-	-
25	9049 IBW9	*07:01			-	-	-	-	-	+	-
26	9285 WT49	*03:01			+	-	-	-	+	-	-
27	9191 CH1007	*04:05	*10:01		-	-	-	-	-	+	-
28	9320 BEL5GB	*04:16	*07:01		-	-	-	-	-	+	-
29	9050 MOU	*07:01			-	-	-	-	-	+	-
30	9021 RSH	*03:02			+	-	-	-	+	-	-
31	9019 DUCAF	*03:01			+	-	-	-	+	-	-
32	9297 HAG	*13:03			+	-	-	-	+	-	-
33	9098 MT14B	*04:04			-	-	-	-	-	+	-
34	9104 DHIF	*11:01			-	-	-	-	+	-	-
35	9302 SSTO	*04:03			-	-	-	-	-	+	-
36	9024 KT17	*04:03	*04:06		-	-	-	-	-	+	-
37	9065 HHKB	*13:01			+	-	-	-	+	-	-
38	9099 LZL	*14:02			+	-	+	-	+	-	-
39	9315 CML	*03:01	*04:01		+	-	-	-	+	+	-
40	9134 WHONP199	*07:01	*09:01		-	-	+	-	-	+	-
41	9055 H0301	*13:02			+	-	-	-	+	-	-
42	9066 TAB089	*08:03			-	-	-	-	-	-	-
43	9076 T7526	*09:01			-	-	+	-	-	+	-
44	9057 TEM	*14:01			-	+	+	+	+	-	-
45	9239 SHJO	*07:01			-	-	-	-	-	+	-
46	9013 SCHU	*15:01			-	-	-	-	-	-	+
47	9045 TUBO	*11:04	*12:01		-	-	-	-	+	-	-
48	9303 TER-ND	*01:03			-	-	-	-	-	-	-

101.701-24/06– including *Taq* pol., IFU-01
 101.701-24u/06u – without *Taq* pol., IFU-02

Visit www.olerup-ssp.com for
 “Instructions for Use” (IFU)

Lot No.: **63S**

Lot-specific information

CERTIFICATE OF ANALYSIS

Olerup SSP[®] HLA-A-B-DR SSP Combi Tray

Product number: 101.701-24/06 – including *Taq* pol.
 101.701-24u/06u – without *Taq* pol.

Lot number: 63S

Expiry date: 2016-March-01

Number of tests: 24 tests – Product No. 101.701-24/24u
 6 tests – Product No. 101.701-06/06u

Number of wells per test: 95 + 1

Well specifications:

Well No.	Production No.	Well No.	Production No.	Well No.	Production No.
1	2013-217-01	9	2012-117-09	17	2012-117-17
2	2012-117-02	10	2012-117-10	18	2013-217-18
3	2013-217-03	11	2012-117-11	19	2013-217-19
4	2012-117-04	12	2013-217-12	20	2012-117-20
5	2013-217-05	13	2012-117-13	21	2013-217-21
6	2012-117-06	14	2013-217-14	22	2012-117-22
7	2012-117-07	15	2013-217-15	23	2012-117-23
8	2012-117-08	16	2012-117-16	24	2012-117-24

The specificity of each primer solution of the kit has been tested against 48 well characterized IHWC cell line DNAs.

Additional 5'- and 3'-primers in primer solutions 4, 5, 7, 8, 12, 14 to 17 and 20 to 23 were tested by separately adding one 3'-primer, respectively one 5'-primer. Additional 5'-primers in primer solution 1 and 19 were tested by separately adding one 3'-primer. Additional 3'-primers in primer solutions 3 and 18 were tested by separately adding one 5'-primer.

In primer solutions 2, 11, 12 and 15 one or two 5'-primers were not possible to test, and in primer solutions 3, 6, 8, 12, 13, 16 and 18 one 3'-primer was not possible to test.

Well No.	Production No.	Well No.	Production No.	Well No.	Production No.
25	2013-187-01	41	2013-187-17	57	2013-187-33
26	2013-187-02	42	2013-218-18	58	2013-187-34
27	2013-218-03	43	2013-187-19	59	2013-187-35
28	2013-187-04	44	2013-187-20	60	2013-187-36
29	2013-187-05	45	2013-187-21	61	2013-187-37
30	2013-208-06	46	2013-208-22	62	2013-187-38
31	2013-187-07	47	2013-208-23	63	2013-187-39
32	2013-218-08	48	2013-208-24	64	2013-187-40
33	2013-218-09	49	2013-187-25	65	2013-187-41
34	2013-187-10	50	2013-187-26	66	2013-218-42
35	2013-187-11	51	2013-187-27	67	2013-187-43
36	2013-187-12	52	2013-187-28	68	2013-187-44
37	2013-187-13	53	2013-218-29	69	2013-187-45
38	2013-187-14	54	2013-187-30	70	2013-187-46
39	2013-187-15	55	2013-187-31	71	2013-187-47
40	2013-187-16	56	2013-187-32	72	2013-218-48

101.701-24/06– including *Taq* pol., IFU-01
 101.701-24u/06u – without *Taq* pol., IFU-02

Visit www.olerup-ssp.com for
 “Instructions for Use” (IFU)

Lot No.: **63S**

Lot-specific information

The specificity of each primer solution of the kit has been tested against 48 well characterized IHWC cell line DNAs.

Additional 5'-primers and 3'-primers in primer solutions 27, 30, 38, 43, 53, 55 and 64 were tested by separately adding one additional 3'-primer, respectively one additional 5'-primer. Additional 3'-primers in primer solutions 26, 32, 37, 39, 42 and 59 were tested by separately adding one additional 5'-primer. Additional 5'-primers in primer solutions 25, 45, 49 and 72 were tested by separately adding one additional 3'-primer.

In primer mixes 55, 66 and 67 one 5'-primer was not possible to test, and in primer mixes 27, 53, 62 and 66 one or two 3'-primer was not possible to test.

Well No.	Production No.	Well No.	Production No.	Well No.	Production No.
73	2013-219-01	81	2012-090-09	89	2012-090-17
74	2012-090-02	82	2012-090-10	90	2012-090-18
75	2012-090-03	83	2012-090-11	91	2012-090-19
76	2012-090-04	84	2012-090-12	92	2013-219-20
77	2012-090-05	85	2012-090-13	93	2012-090-29
78	2012-090-06	86	2012-090-14	94	2012-090-30
79	2012-090-07	87	2012-090-15	95	2012-090-31
80	2012-090-08	88	2012-090-16		

The specificity of each primer solution of the kit has been tested against 48 well characterized IHWC cell line DNAs.

Additional 5'- and 3'-primers in primer solutions 81, 83 and 90 were tested by separately adding one 3'-primer, respectively one 5'-primer.

Additional 5'-primers in primer solutions 78, 84, 87 and 88 were tested by separately adding one 3'-primer. Additional 3'-primers in primer solutions 73, 75, 76, 82 and 92 were tested by separately adding one 5'-primer.

One, two or three of the 5'-primers in primer solution 73, 75, 76, 80 to 82, 85, 87, 88 and 92 were not possible to test. One or two of the 3'-primers in primer solution 73, 75, 76, 85, 87 and 94 were not possible to test.

The negative control primer pairs, **Production No. 2013-165-01**, can detect contamination with PCR products diluted 10^{-7} .

Results: No false positive or false negative amplifications were obtained.

Date of approval: 2013-October-04

Approved by:

Production Quality Control

101.701-24/06– including *Taq* pol., IFU-01
101.701-24u/06u – without *Taq* pol., IFU-02

Visit www.olerup-ssp.com for
“Instructions for Use” (IFU)

Lot No.: **63S**

Lot-specific information

Declaration of Conformity

Product name: *Olerup* SSP® HLA-A-B-DR SSP Combi Tray

Product number: 101.701-24/24u, 06/06u

Lot number: 63S

Intended use: HLA-A, HLA-B and HLA-DR low resolution histo-compatibility testing

Manufacturer: *Olerup* SSP AB
Franzengatan 5
SE-112 51 Stockholm, Sweden
Phone: +46-8-717 88 27
Fax: +46-8-717 88 18

We, *Olerup* SSP AB, hereby declare that this product, to which this Declaration of Conformity relates is in conformity with the following Standard(s) and other normative document(s) ISO 9001:2008 and ISO 13485:2012, following the provisions of the 98/79/EC Directive on *in vitro* diagnostic medical devices, Annex II List B, conformity assessed using Annex IV, as transposed into the national laws of the Member States of the European Union.

The Technical Documentation File is maintained at *Olerup* SSP AB, Franzengatan 5, SE-112 51 Stockholm, Sweden.

Notified Body: Lloyd's Register Quality Assurance Limited, Hiramford, Middlemarch Office Village, Siskin Drive, Coventry CV3 4FJ, United Kingdom. (Notified Body number: 0088.)

Stockholm, Sweden
2013-October-04

Ann-Cathrin Jareman
Head of QA and Regulatory Affairs

101.701-24/06– including *Taq* pol., IFU-01
101.701-24u/06u – without *Taq* pol., IFU-02

Visit www.olerup-ssp.com for
“Instructions for Use” (IFU)

Lot No.: **63S**

Lot-specific information

101.701-24/06– including *Taq* pol., IFU-01
101.701-24u/06u – without *Taq* pol., IFU-02

Visit www.olerup-ssp.com for
“Instructions for Use” (IFU)

Lot No.: **63S**

Lot-specific information

101.701-24/06– including *Taq* pol., IFU-01
101.701-24u/06u – without *Taq* pol., IFU-02

Visit www.olerup-ssp.com for
“Instructions for Use” (IFU)

Lot No.: **63S**

Lot-specific information

101.701-24/06– including *Taq* pol., IFU-01
101.701-24u/06u – without *Taq* pol., IFU-02

Visit www.olerup-ssp.com for
“Instructions for Use” (IFU)

Lot No.: **63S**

Lot-specific information

ADDRESSES:

Manufacturer:

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Tel: +46-8-717 88 27

Fax: +46-8-717 88 18

E-mail: info-ssp@olerup.com

Web page: <http://www.olerup-ssp.com>

Distributed by:

Olerup GmbH, Löwengasse 47 / 6, AT-1030 Vienna, Austria.

Tel: +43-1-710 15 00

Fax: +43-1-710 15 00 10

E-mail: support-at@olerup.com

Web page: <http://www.olerup.com>

Olerup Inc., 901 S. Bolmar St., Suite R, West Chester, PA 19382

Tel: 1-877-OLERUP1

Fax: 610-344-7989

E-mail: info.us@olerup.com

Web page: <http://www.olerup.com>

For information on *Olerup* SSP distributors worldwide, contact **Olerup GmbH**.

101.708-24 – including *Taq* polymerase, IFU-01
 101.708-24u – without *Taq* polymerase, IFU-02

Visit www.olerup-ssp.com for
 “Instructions for Use” (IFU)

Lot No.: **70S**

Lot-specific information

Olerup SSP[®] HLA-A-B-DR-DQ SSP Combi Tray

Product number: 101.708-24 – including *Taq* pol.
 101.708-24u – without *Taq* pol.

Lot number: 70S

Expiry date: 2016-March-01

Number of tests: 24 tests

Number of wells per test: 95 +1

Storage - pre-aliquoted primers: dark at -20°C

- PCR Master Mix: -20°C
- Adhesive PCR seals RT
- Product Insert RT

This Product Description is only valid for Lot No. 70S.

CHANGES COMPARED TO THE PREVIOUS OLERUP SSP[®] HLA-A-B-DR-DQ SSP COMBI TRAY LOT (43R)

The Lot-specific information for HLA-A-B-DR-DQ Combi Tray including and without *Taq* polymerase is now described in one common Product Insert.

The **HLA-A low resolution** specificity and interpretation tables have been updated for the HLA-A alleles described since the previous *Olerup SSP[®]* HLA-A-B-DR-DQ SSP Combi Tray lot was made (**Lot No. 43R**).

The primers of the wells detailed below have been exchanged, added or modified compared to the previous lot.

Well	5'-primer	3'-primer	rationale
2	Exchanged	-	5'-primer exchanged for improved specificity of primer pair.
3	-	Added	3'-primer added for the A*03:05:02 allele.
5	-	Exchanged	3'-primers exchanged for resolution of the A*23:14:02 and A*23:34 alleles.
8	Exchanged	-	Exchanged 5'-primer for the A*25:17 allele.
9	Exchanged, added	-	5'-primer added for the A*26:72 allele.
11	-	Added	3'-primer added for the A*34:11 allele.
12	-	Added	3'-primer added for the A*25:18 allele.

101.708-24 – including *Taq* polymerase, IFU-01
 101.708-24u – without *Taq* polymerase, IFU-02

Visit www.olerup-ssp.com for
 “Instructions for Use” (IFU)

Lot No.: 70S**Lot-specific information**

13	-	Exchanged	3'-primer exchanged for the A*29:48 allele.
14	Added	-	5'-primer added for the A*30:72 allele.
15	-	Added	3'-primer added for the A*31:01:07 allele.
17	Added	-	5'-primer added for the A*33:51 allele.
18	New	New	New primer pair for the A*74 alleles.
20	Added	Added	Primer pair added for the A*23:57 allele.

The **HLA-B low resolution** specificity and interpretation tables have been updated for the HLA-B alleles described since the previous *Olerup* SSP® HLA-A-B-DR-DQ SSP Combi Tray lot was made (**Lot No. 43R**).

The primers of the wells detailed below have been exchanged, modified or added compared to the previous lot.

Well	5'-primer	3'-primer	rationale
24	-	Added	3'-primer added for the B*13:12:02 allele.
29	-	Added	3'-primer added for the B*42:19 allele.
38	-	Added	3'-primer added for the B*35:222 allele.
60	-	Added	3'-primer added for the B*57:62 allele.

The **HLA-DR low resolution** specificity and interpretation tables have been updated for the HLA-DRB alleles described since the previous *Olerup* SSP® HLA-A-B-DR-DQ SSP Combi Tray lot was made (**Lot No. 43R**).

The primers of the wells detailed below have been exchanged, modified or added compared to the previous lot.

Well	5'-primer	3'-primer	rationale
65	-	Added	3'-primer added for the DRB1*01:55 allele.
84	Added	-	5'-primer added for the DRB1*08:53 allele.

The **DQ low resolution** specificity and interpretation tables have been updated for the HLA-DQB1 alleles described since the previous *Olerup* SSP® HLA-A-B-DR-DQ SSP Combi Tray lot was made (**Lot No. 43R**).

The primers of the wells detailed below have been exchanged, modified or added compared to the previous lot.

Well	5'-primer	3'-primer	rationale
88	Added	-	5'-primer added for the DQB1*05:21 allele.
89	Added	Added	Primer pair added for the DQB1*06:04:06 and 06:67 alleles, exchanged control primer pair.
90	Added	-	5'-primer added for the DQB1*02:25 allele.
91	-	Added	3'-primer added for the DQB1*03:01:08 allele.
94	Exchanged	Added	5'-primers exchanged, 3'-primer added for the DQB1*04:09 and DQB1*03:01:08 alleles.

101.708-24 – including *Taq* polymerase, IFU-01
101.708-24u – without *Taq* polymerase, IFU-02

Visit www.olerup-ssp.com for
“Instructions for Use” (IFU)

Lot No.: **70S**

Lot-specific information

Changes in revision R01 compared to R00:

Primer mix 39 does not amplify the B*44:10 allele. This has been corrected in the Specificity and Interpretation Tables.

Change in revision R02 compared to R01:

1. Primer mix 18 does not amplify the A*74:07 allele, and primer mix 10 does not amplify the A*31:03 and A*66:15 alleles. This has been corrected in the Specificity and Interpretation tables.

The A*32:01:14, 32:03, 32:38 and the A*74:07 alleles give rise to identical amplification patterns with this lot of the HLA-A low resolution primer set. These alleles can be separated by the respective high resolution primer sets.

101.708-24 – including *Taq* polymerase, IFU-01
 101.708-24u – without *Taq* polymerase, IFU-02

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 “Instructions for Use” (IFU)

Lot No.: **70S**

Lot-specific information

Well 96 contains Negative Control primer pairs, that will amplify more than 95% of the *Olerup* SSP[®] HLA Class I, DRB, DQB1 and DPB1 amplicons as well as amplicons generated by a control primer pair.

PCR product sizes range from 75 to 430 base pairs.
 The PCR product generated by the control primer pair is 430 base pairs.

Length of PCR product	105	200	105	80	75	80
5'-primer¹	164	340	440	45	45	43
	⁵ -CAC ³	⁵ -Agg ³	⁵ -TTA ³	⁵ -Tgg ³	⁵ -Tgg ³	⁵ -Tgg ³
3'-primer²	231	2nd I	507	59	58	57
	⁵ -TgC ³	⁵ -AAA ³	⁵ -TTg ³	⁵ -CTC ³	⁵ -ggC ³	⁵ -CTC ³
A*	+	+	+			
B*	+	+	+			
C*	+	+	+			
DRB1				+	+	
DRB3				+	+	
DRB5				+		
DQB1					+	
DPB1						+

¹The nucleotide position for HLA class I genes and the codon for HLA class II genes, in the 2nd or 3rd exon, matching the specificity-determining 3'-end of the primer is given. Nucleotide and codon numbering as on the www.ebi.ac.uk/imgt/hla web site. The sequence of the 3 terminal nucleotides of the primer is given.

²The nucleotide position for HLA class I genes and the codon for HLA class II genes, in the 2nd or 3rd exon or the 2nd intron, matching the specificity-determining 3'-end of the primer is given in the anti-sense direction. Nucleotide and codon numbering as on the www.ebi.ac.uk/imgt/hla web site. The sequence of the 3 terminal nucleotides of the primer is given.

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PRODUCT DESCRIPTION

HLA-A-B-DR-DQ SSP Combi Tray

CONTENT

The primer set contains 5'- and 3'-primers for grouping the HLA-A*01:01 to A*80:03 alleles into the corresponding serological groups A1 to A80.

The primer set contains 5'- and 3'-primers for grouping the B*07:02 to B*83:01 alleles into the corresponding serological groups B7 to B81 as well as primer pairs for recognizing the Bw4 and Bw6 sequence motifs.

The primer set contains 5'- and 3'-primers for grouping the DRB1*01:01 to DRB1*10:05 alleles into the corresponding serological groups DR1 to DR18 as well as primer pairs for recognizing the DRB3, DRB4 and DRB5 groups of alleles.

The primer set contains 5'- and 3'-primers for grouping the DQB1 alleles into the serological groups DQ2 to DQ9.

Please note that DQB1 amplifications usually are somewhat less pronounced than e.g. DRB and DQA1 amplifications even when using the same DNA preparation and exactly the same experimental procedures.

PLATE LAYOUT

Each test consists of 96 PCR reactions in a 96 well PCR plate.

1	2	3	4	5	6	7	8
9	10	11	12	13	14	15	16
17	18	19	20	21	22	23	24
25	26	27	28	29	30	31	32
33	34	35	36	37	38	39	40
41	42	43	44	45	46	47	48
49	50	51	52	53	54	55	56
57	58	59	60	61	62	63	64
65	66	67	68	69	70	71	72
73	74	75	76	77	78	79	80
81	82	83	84	85	86	87	88
89	90	91	92	93	94	95	ctrl

Wells 1 to 21 – HLA-A low resolution primers.

Wells 22 to 64 – HLA-B low resolution primers.

Wells 65 to 87 – HLA-DR low resolution primers.

Wells 88 to 95 – HLA-DQ low resolution primers.

Well 96 – Negative Control.

The 96 well PCR plate is marked with 'A-B-DR-DQ' in silver/gray ink.

Well No. 1 is marked with the Lot No. '70S'.

A faint row of numbers is seen between wells 1 and 2 or wells 7 and 8 of the PCR trays. These stem from the manufacture of the trays, and should be disregarded.

The PCR plates are covered with a PCR-compatible foil.

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INTERPRETATION

Only HLA-A alleles will be amplified by the 21 wells of the HLA-A low resolution primer set, **wells 1 to 21**, except that primer mix 4 will amplify the C*03:174, C*08:69 and C*16:56 alleles, primer mix 5 will amplify the B*18:27 allele and primer mix 8 will amplify the B*07:81, B*08:52, B*18:67, B*38:41, B*53:05 and B*53:16 alleles. Thus, the interpretation of HLA-A low resolution is only influenced by these seven HLA-B alleles and three HLA-C alleles and not by other HLA Class I genes.

Only HLA-B alleles will be amplified by the 43 wells of the HLA-B low resolution, primer set, **wells 22 to 64**, except that the C*03:05, C*03:25, C*03:27, C*03:143 and C*03:167 alleles will be amplified by primer mix 24, the C*01:30 and C*12:87 alleles will be amplified by primer mix 25, the A*23:31, A*24:106, C*07:231 and C*16:10 alleles will be amplified by primer mix 27, the C*07:02:30 and C*08:16:02 alleles will be amplified by primer mix 28, the C*01:73 allele will be amplified by primer mixes 28 and 49, the C*07:46 allele will be amplified by primer mix 29, the A*24:174 allele will be amplified by primer mix 33, the C*03:102 allele will be amplified by primer mixes 37 and 59, the C*03:179 allele will be amplified by primer mix 39, the C*07:302 allele will be amplified by primer mix 40, the C*15:51 allele will be amplified by primer mix 41, the C*03:129 and C*17:16 alleles will be amplified by primer mix 45, the C*15:25 allele will be amplified by primer mix 48, the C*15:39 alleles will be amplified by primer mix 49, the C*15:02:04 allele will be amplified by primer mix 58, the C*03:19 allele will be amplified by primer mix 59, the C*03:102 alleles will be amplified by primer mix 65, the C*06:72 allele will be amplified by primer mix 60 and the A*26:68, A*68:56, C*02:56, C*06:20 and C*12:50 alleles will be amplified by primer mix 62.

Thus, the interpretation of HLA-B low resolution typings is only influenced by these alleles and not by other alleles of other HLA class I genes.

Only HLA-DRB alleles will be amplified by the 23 wells the DR low resolution primer set, **wells 65 to 87**. Thus, the interpretation of DR low resolution typings is not influenced by other HLA class II genes.

Only the DQB1 alleles will be amplified by the 8 wells the DQ low resolution primer set, **wells 88 to 95**. Thus, the interpretation of DQ low resolution typings is not influenced the DQB2 and DQB3 genes.

UNIQUELY IDENTIFIED ALLELES

All the HLA-A alleles, i.e. **A*01:01 to A*80:03**, recognized by the HLA Nomenclature Committee in April 2013¹ will be amplified by the primers in the HLA-A low resolution primer set, **wells 1 to 21**. The HLA-A alleles will be grouped into their corresponding serological specificities².

All the HLA-B alleles, i.e. **B*07:02 to B*83:01**, recognized by the HLA Nomenclature Committee in April 2013¹ will be amplified by the primers in the HLA-B low

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resolution primer set, wells 22 to 64. The HLA-B alleles will be grouped into their corresponding serological specificities³.

All the HLA-DRB1, -DRB3, -DRB4⁴ and –DRB5 alleles, i.e. **DRB1*01:01:01 to 10:05, DRB3*01:01:02:01 to DRB3*03:03, DRB4*01:01:01:01 to DRB4*01:08, DRB5*01:01:01 to DRB5*02:06**, recognized by the HLA Nomenclature Committee in April 2013¹ will be amplified by the primers in the DR low resolution primer set, wells 65 to 87. The HLA-DRB alleles will be grouped into their corresponding serological specificities⁵.

All the DQB1 alleles, i.e. **DQB1*05:01:01:01 to 05:26, DQB1*06:01:01 to 06:84, DQB1*02:01:01 to 02:29, DQB1*03:01:01:01 to 03:72 and DQB1*04:01:01 to 04:12**, recognized by the HLA Nomenclature Committee in April 2013¹ will be amplified by the primers in the DQ low resolution primer set. The DQB1 alleles will be grouped into their corresponding serological specificities⁶, i.e.:

DQ5(1) =	DQB1*05:01:01-05:05
DQ6(1) =	DQB1*06:01:01-06:44
DQ2 =	DQB1*02:01:01-02:05
DQ3 =	DQB1*03:06, 03:10, 03:14
DQ7(3) =	DQB1*03:01:01-03:01:06, 03:04, 03:09, 03:13, 03:16, 03:19
DQ8(3) =	DQB1*03:02:01-03:02:05, 03:05:01-03:05:04, 03:07-03:08, 03:11, 03:18
DQ9(3) =	DQB1*03:03:02:01-03:03:04, 03:12, 03:15, 03:17, 03:20
DQ4 =	DQB1*04:01-04:02

¹HLA-A, HLA-B, HLA-DRB and HLA-DQB1 alleles listed on the IMGT/HLA web page 2013-April-17, release 3.12.0, www.ebi.ac.uk/imgt/hla.

²The A*36 alleles will give rise to identical amplification patterns as some A*01 alleles. These alleles can be separated by the A*01 and A*36 high resolution SSP primer sets.

The A*03:01:23, 03:08, 03:32, 03:36N, 03:57, 03:59, 03:72, 03:89, 03:107-03:108, 03:111, 03:142 and 03:152 and the A*24:92 alleles will give rise to identical amplification patterns. These alleles can be separated by the respective high resolution SSP primer sets.

The A*03:88 and the A*11:130 alleles will give rise to identical amplification patterns. These alleles can be separated by the respective high resolution SSP primer sets.

The A*23:01:01-23:13, 23:15-23:56 and A*23:58 and the B*18:27 alleles will give rise to identical amplification patterns. These alleles can be separated by the respective high resolution SSP primer sets.

The A*23:14:01-23:14:02 and the A*24:24 and 24:71 alleles will give rise to identical amplification patterns. These alleles can be separated by the respective high resolution SSP primer sets.

The A*31:01:02-31:02, 31:05-31:28, 31:30-31:34, 31:36-31:40 and 31:42-31:74 and the A*33:53 alleles will give rise to identical amplification patterns. These alleles can be separated by the respective high resolution SSP primer sets.

The A*32:01:14, 32:03, 32:38 and the A*74:07 alleles give rise to identical amplification patterns. These alleles can be separated by the respective high resolution primer sets. set.

³The B*07:174 and the 81:02 alleles give rise to identical amplification patterns with the HLA-B low resolution primer set. These alleles can be separated by the respective high resolution primer sets.

The B*08:26, 08:50, 08:62, 08:85 and 08:94 and the B*42:07 alleles give rise to identical amplification patterns with the HLA-B low resolution primer set. These alleles can be separated by the respective high resolution primer sets.

The B*13:04, 13:10, 13:21, 13:35 and 13:59 and the 44:135 and 44:158 alleles give rise to identical amplification patterns with the HLA-B low resolution primer set. These alleles can be separated by the respective high resolution primer sets.

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The B*14:08 and the B*39:25N, 39:30, 39:32-39:34, 39:43, 39:47, 39:50, 39:74 and 39:82 alleles give rise to identical amplification patterns with the HLA-B low resolution primer set. These alleles can be separated by the respective high resolution primer sets.

The B*18:29 and 18:72 and the B*35:09:01-35:09:03, 35:18, 35:31-35:32:02, 35:37, 35:53N, 35:64:01-35:64:02, 35:68:01-35:68:02, 35:75, 35:88, 35:99, 35:118-35:119, 35:127, 35:151, 35:174 and 35:205 alleles give rise to identical amplification patterns with the HLA-B low resolution primer set. These alleles can be separated by the respective high resolution primer sets.

The B*41:09 and the B*45:02-45:03 alleles give rise to identical amplification patterns with the HLA-B low resolution primer set. These alleles can be separated by the respective high resolution primer sets.

The B*51:104, 51:118N and 51:147 and the B*58:08:01-58:08:02 alleles give rise to identical amplification patterns with the HLA-B low resolution primer set. These alleles can be separated by the respective high resolution primer sets.

The B*51:148 and the B*53:14 alleles give rise to identical amplification patterns with the HLA-B low resolution primer set. These alleles can be separated by the respective high resolution primer sets.

The B*53:30 and the B*57:45 and 57:51 alleles give rise to identical amplification patterns with the HLA-B low resolution primer set. These alleles can be separated by the respective high resolution primer sets.

The B*54:01:02, 55:01:07, 55:02:01-55:02:06, 55:07, 55:10, 55:12, 55:16, 55:19, 55:26, 55:30, 55:35, 55:37, 55:39, 55:41-55:43, 55:47-55:48, 55:50 and 55:57 and the B*56:10 alleles give rise to identical amplification patterns with the HLA-B low resolution primer set. These alleles can be separated by the respective high resolution primer sets.

The B*55:04, 55:08, 55:13, 55:23, 55:27, 55:32, 55:46, 55:49 and the B*56:01:05, 56:15, 56:18-56:19N, 56:22 and 56:31-56:32 alleles give rise to identical amplification patterns with the HLA-B low resolution primer set. These alleles can be separated by the respective high resolution primer sets.

The B*57:01:01-57:01:04, 57:01:06-57:03:02, 57:05-57:06, 57:08, 57:10, 57:15-57:20, 57:22-57:23, 57:25-57:30, 57:32-57:44, 57:46, 57:48-57:50, 57:52-57:58 and 57:60-57:64 and the B*58:36 alleles give rise to identical amplification patterns with the HLA-B low resolution primer set. These alleles can be separated by the respective high resolution primer sets.

⁴The DRB4*02:01N and DRB4*03:01N null alleles will not be amplified by the DR low resolution primer set.

⁵The DRB1*08:09 and the DRB1*14:15 alleles yield identical amplification patterns with the DR low resolution primer set. These alleles can be separated by the respective high resolution primer sets.

The DRB1*08:20 and the DRB1*13:18, 13:47, 13:55 and 13:158 alleles yield identical amplification patterns with the DR low resolution primer set. These alleles can be separated by the respective high resolution primer sets.

The DRB1*08:31, 08:41 and DRB1*11:67 alleles yield identical amplification patterns with the DR low resolution primer set. These alleles can be separated by the respective high resolution primer sets.

The DRB1*13:13, 13:119, 13:154, 13:156 and the DRB1*14:84 and 14:116 alleles yield identical amplification patterns with the DR low resolution primer set. These alleles can be separated by the respective high resolution primer sets.

⁶The serological split of the DQB1*05:05-05:26, DQB1*06:06 to 06:07 alleles, the DQB1*06:10, 06:13, 06:15-06:24 and 06:27 to 06:84, the DQB1*02:04-02:29, the DQB1*03:07-03:09 and 03:11-03:72 alleles and the DQB1:04:0301-04:12 alleles is not known. In this table we have used the expert-assigned serological grouping in Tissue Antigens (2009) 73:95-170, and also inferred the serological grouping from the naming of the sequence-defined allele.

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SPECIFICITY TABLE

HLA-A low resolution primer set

Specificities and sizes of the PCR products of the 21 primer mixes used for HLA-A low resolution SSP typing

Primer Mix	Size of spec. PCR product ¹	Size of control band ²	HLA-A serology ³	Amplified HLA-A alleles ^{4,5,6}
1^{6,7}	120 bp, 145 bp, 225 bp	800 bp	A1, A36	*01:01:01:01-01:04N, 01:06-01:33, 01:35-01:130, 03:18, 03:135, 11:94, 11:112, 36:01-36:05
2⁷	175 bp, 215 bp, 255 bp, 365 bp, 415 bp	800 bp	A2, A203, A210, A19, A28	*02:01:01:01-02:01:15, 02:01:17-02:01:19, 02:01:21-02:01:81, 02:01:83-02:22:02, 02:24:01-02:35:01, 02:35:03-02:47, 02:49-02:77, 02:78 ^w , 02:79:01-02:97:02, 02:99, 02:101:01-02:128, 02:130-02:414, 02:416-02:417
3¹¹	205 bp, 235 bp	1070 bp	A1, A3, A11, A32, A34, A36	*01:12, 01:19, 01:21, 01:126, 02:338, 03:01:01:01-03:17:02, 03:19-03:74, 03:76-03:94, 03:96-03:134, 03:136-03:166, 11:25, 11:60, 11:130, 24:92, 32:04, 34:02:01-34:04, 34:07-34:10N, 36:02
4	190 bp	800 bp	A1, A2, A3, A11, A26, A30, A36, A68	*01:01:01:01-01:01:22, 01:01:24-01:01:47, 01:01:49-01:04N, 01:06-01:07, 01:09-01:11N, 01:13, 01:16N-01:18N, 01:20-01:29, 01:31N-01:33, 01:35-01:78, 01:80-01:98, 01:100-01:130, 02:78, 02:169, 03:12, 03:18, 03:88, 03:135, 11:01:01-11:27, 11:29-11:52Q, 11:54-11:139, 11:141-11:142, 26:19, 26:72, 30:08, 36:04, 68:13:01, 68:66, C*03:174, C*08:69, C*16:56
5^{8,12}	135 bp, 200 bp	800 bp	A9, A23, A24, A29, A80	*23:01:01-23:56, 23:58, 24:24, 24:71, 29:07, 29:49, 31:29, 80:01:01:01-80:03, B*18:27
6	175 bp, 205 bp	1070 bp	A2, A23, A24, A26, A33	*02:17:01 ^w -02:17:02 ^w , 11:139, 23:14:01-23:14:02, 24:02:01:01-24:11N, 24:13:01-24:13:02, 24:17-24:50, 24:54-24:56, 24:58-24:63, 24:66-24:91, 24:93, 24:95-24:113, 24:115-24:137, 24:139-24:187, 24:189-24:210, 24:212-24:221, 24:223-24:227, 24:229-24:232N, 26:16, 33:19, 68:45
7	165 bp, 200 bp	800 bp	A2/A28, A3, A10, A11, A25, A26, A32, A34, A66, A68, A69	*01:51, 02:55, 03:24, 03:50, 11:10, 25:01:01-25:16, 25:18-25:22, 26:01:01-26:06, 26:08-26:15, 26:17-26:18, 26:20-26:43:02, 26:45-26:63, 26:65-26:71N, 26:73-26:85, 29:28, 32:15, 33:51, 34:01:01-34:11, 66:01-66:19, 68:01:01:01-68:100, 69:01
8^{6,9}	75 bp	800 bp	A3, A25, A32	*25:01:01-25:22, 32:01:01-32:01:13, 32:01:15-32:02, 32:04, 32:06-32:37,

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				32:39-32:57, B*07:81, B*08:52, B*18:67, B*38:41, B*53:05, B*53:16
9⁶	80 bp, 240 bp	800 bp	A10, A26, A43	*01:43, 01:51, 11:17, 11:40, 26:01:01-26:02, 26:04, 26:07:01-26:20, 26:22-26:29, 26:31-26:43:02, 26:45-26:77, 26:79-26:85, 33:13, 33:48, 43:01, 68:84
10^{6,7,8}	80 bp, 175 bp, 500 bp	1070 bp	A1, A11, A24, A26, A31, A34, A66	*01:13, 01:28, 03:63, 03:88, 11:01:01-11:27, 11:29-11:52Q, 11:54-11:139, 11:141-11:142, 24:19, 24:44, 26:03:01-26:03:02, 26:06, 26:21, 26:78, 34:01:01-34:08, 34:10N-34:11, 66:01, 66:04-66:11, 66:13-66:14, 66:17-66:19, 80:02
11⁶	125 bp, 185 bp	800 bp	A3, A10, A25, A26, A31, A34, A43, A66	*02:309, 03:01:19, 11:11, 25:05-25:06, 26:09, 26:54, 31:03-31:04, 34:01:01-34:11, 43:01, 66:02-66:03, 66:16
12	175 bp, 225 bp	1070 bp	A1, A2, A3, A10, A25, A26, A34, A43, A66	*01:01:56 ^w , 01:13, 02:34-02:35:03, 02:56:01-02:56:02, 02:62, 02:103, 02:135, 03:01:01:01-03:01:22, 03:01:24-03:07, 03:09-03:11N, 03:13-03:31, 03:33-03:35, 03:37-03:40, 03:42-03:56, 03:58, 03:60-03:71, 03:73-03:87, 03:90-03:106, 03:109-03:110, 03:112-03:141, 03:143-03:151, 03:153-03:166, 25:01:01-25:05, 25:07-25:22, 26:01:01-26:01:20, 26:01:22-26:01:27, 26:02 ^w , 26:03:01-26:03:02, 26:05-26:08, 26:10-26:28, 26:29 ^w , 26:30-26:33, 26:35-26:43:02, 26:45-26:48, 26:49 ^w , 26:50-26:72, 26:74-26:77, 26:79-26:85, 30:55, 34:08, 43:01, 66:01, 66:04-66:09, 66:10 ^w , 66:11-66:15, 66:17-66:19, 68:71, 74:13
13^{6,7,10,12}	80 bp, 115 bp, 200 bp, 240 bp, 460 bp	1070 bp	A26, A29, A31, A34,	*02:237, 02:309, 03:95, 26:19, 26:22, 29:01:01:01-29:53, 31:03-31:04, 32:42, 34:04, 66:09
14^{6,12}	90 bp, 135 bp, 205 bp	1070 bp	A1, A30	*01:13, 01:28, 03:43, 03:82, 11:113, 30:01:01-30:04:02, 30:06-30:20, 30:22-30:74, 31:35
15	240 bp, 380 bp	1070 bp	A24, A31, A32	*02:237, 03:95, 29:14, 31:01:02-31:74, 32:05, 33:53
16	140 bp, 180 bp	1070 bp	A29, A32	*01:95, 03:43, 03:82, 29:13, 29:39, 31:35, 32:01:01-32:03, 32:05-32:57, 74:07
17	200 bp, 390 bp	1070 bp	A32, A33, A68, A74	*02:243, 29:48, 32:15, 33:01:01-33:01:07, 33:03:01-33:37, 33:39-33:52, 33:54-33:68, 68:29, 74:04
18	340 bp, 375 bp	800 bp	A2, A19, A68, A74	*01:121, 02:65, 02:407, 68:25, 74:01-74:06, 74:08-74:17
19¹²	210 bp, 240 bp	800 bp	A2, A210, A25, A30, A68	*02:34-02:35:03, 02:46, 02:48, 02:56:01-02:56:02, 02:62, 02:70, 02:78, 02:103, 02:129, 25:05, 26:54, 68:01:01:01-68:100

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20⁶	65 bp, 240 bp, 375 bp	800 bp	A2, A26, A28, A32, A66, A68, A69	*02:55, 02:149, 02:243, 02:309, 23:57, 24:82, 26:22, 31:41, 32:06, 33:22, 66:06, 66:09, 68:29, 69:01
21^{6,12}	75 bp, 160 bp, 240 bp, 495 bp	800 bp	A2, A26, A68, A80	*02:55, 03:41, 03:63, 03:75, 03:88, 11:130, 24:18, 24:204, 24:213, 26:03:01-26:03:02, 26:05-26:06, 26:21, 26:30, 26:78, 33:24, 36:02, 68:05, 68:15, 68:20, 80:01:01:01- 80:01:01:02, 80:03

¹ Alleles are assigned by the presence of specific PCR product(s). However, the sizes of the specific PCR products may be helpful in the interpretation of HLA-A low resolution SSP typings.

When the primers in a primer mix can give rise to HLA-specific PCR products of more than one length this is indicated if the size difference is more than 20 base pairs. Size differences of 20 base pairs or less are not given. For high resolution SSP kits the respective lengths of the HLA-specific PCR product(s) are given for the alleles amplified by these primer mixes.

Nonspecific amplifications, i.e. a ladder or a smear of bands, may sometimes be seen. GC-rich primers have a higher tendency of giving rise to nonspecific amplifications than other primers.

PCR fragments longer than the control bands may sometimes be observed. Such bands should be disregarded and do not influence the interpretation of the SSP typings.

PCR fragments migrating faster than the control bands, but slower than a 400 bp fragment may be seen in some gel read-outs. Such bands can be disregarded and do not influence the interpretation of the SSP typings.

Some primers may give rise to primer oligomer artifacts. Sometimes this phenomenon is an inherent feature of the primer pair(s) of a primer mix. More often it is due to other factors such as too low amount of DNA in the PCR reactions, taking too long time in setting up the PCR reactions, working at elevated room temperature or using thermal cyclers that are not pre-heated.

² The internal positive control primer pairs amplify segments of the human growth hormone gene. The two different control primer pairs give rise to either an internal positive control band of 1070 base pairs, for most wells, or a band of 800 base pairs, for some wells.

Well number 1 contains the primer pair giving rise to the shorter, 800 bp, internal positive control band in order to help in the correct orientation of the HLA-A low resolution typing. In addition, wells number 2, 4, 5, 7, 8, 9, 11 and 18 to 21 contain the primer pair giving rise to the shorter, 800 bp, internal positive control band in order to allow kit identification.

In the presence of a specific amplification the intensity of the control band often decreases.

³ The serological reactivity of all HLA-A alleles is not known. The grouping of not serologically defined alleles is taken from Tissue Antigens 73, 95-170, 2009.

⁴ For several HLA Class I alleles 1st and/or 4th exon(s) and beyond, as well as intron nucleotide sequences, are not available. In these instances it is not known whether some of the primers of the SSP sets are completely matched with the target sequences or not. We assume that unknown sequences in these regions are conserved within allelic groups.

⁵ Due to the sharing of sequence motifs between HLA-Class I alleles, primer mix 4 will amplify the C*03:174, C*08:69 and C*16:56 alleles, primer mix 5 will amplify the B*18:27 allele and primer mix 8 will amplify the B*07:81, B*08:52, B*18:67, B*38:41, B*53:05 and B*53:16 alleles.

⁶ HLA-specific PCR products shorter than 125 base pairs have a lower intensity and are less sharp than longer PCR products.

⁷ The primer pairs in vials 1, 2, 9 and 13 will in many samples give rise to two or three HLA-specific PCR fragments.

⁸ Primer mix 5 may give rise to a lower yield of A*23 alleles than the other A low primer mixes.

⁹ Primer mix 8 may weakly amplify the A*34 alleles.

¹⁰ Primer mix 13 may give rise to a lower yield of HLA-specific PCR product than the other HLA-A low primer mixes.

¹¹ Primer mix 3 may faintly amplify the A*30:04:01-30:04:02, 30:06, 30:17 and 30:29 alleles.

¹² Primer mixes 5, 13, 14, 19 and 21 may have a tendency of giving rise to primer oligomer formation.

‘w’, might be weakly amplified.

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SPECIFICITY TABLE

HLA-B low resolution primer set

**Specificities and sizes of the PCR products of the 43 primer mixes used for
 HLA-B low resolution SSP typing**

Primer Mix	Size of spec. PCR product ¹	Size of control band ²	HLA-B serol. ³	Amplified HLA-B alleles ^{4,5}
22¹⁰	285 bp	800 bp	7, 15, 37, 40, 41, 42, 48	*07:02:01-07:06, 07:08-07:18:02, 07:20-07:32, 07:34-07:39, 07:41-07:52, 07:54-07:59, 07:61-07:76, 07:79-07:83, 07:85-07:99, 07:101-07:121, 07:123- 07:138, 07:140-07:164, 07:166-07:190, 08:01:01- 08:05, 08:07-08:08N, 08:10-08:11, 08:13-08:15, 08:17-08:83, 08:85-08:88, 08:90-08:102, 08:104- 08:106, 08:108, 35:66, 35:87, 37:07, 40:15-40:16, 40:30-40:32, 40:34, 40:45, 40:59, 40:80, 40:98, 40:137, 40:160:01-40:160:02, 41:02:01-41:02:05, 41:04, 41:10-41:11, 41:13, 41:18-41:19, 41:23-41:24, 41:27, 42:01:01-42:02, 42:05:01-42:07, 42:09-42:13, 42:15-42:20, 44:150, 44:166, 48:01:01-48:01:04, 48:05-48:12, 48:14-48:20, 48:22, 48:27-48:30, 53:15, 81:01-81:06
23	215 bp	1070 bp	8, 15, 44	*08:01:01-08:05, 08:07-08:25, 08:27-08:49, 08:51- 08:61, 08:63-08:64, 08:66-08:84, 08:86N-08:93, 08:95-08:108, 15:142, 15:180, 35:218, 44:49, 44:156, 49:25, 51:68
24	140 bp, 235 bp	1070 bp	7, 8, 13, 15, 35, 40, 4005, 44, 46, 53, 57, 58	*07:20, 07:24, 07:60, 07:100, 07:131, 08:21, 08:25, 13:01:01-13:04, 13:06-13:08, 13:10-13:23, 13:25- 13:38, 13:40-13:57, 13:59-13:66, 15:07:01-15:07:02, 15:36 ^w , 15:45, 15:55, 15:68, 15:89 ^w , 15:126, 15:207, 35:05:01-35:05:03, 35:16-35:17, 35:22, 35:30, 35:51, 35:58, 35:72, 35:89, 35:97, 35:113-35:114, 35:125, 35:164, 35:199, 40:05, 40:71, 40:174, 44:08 ^w , 44:54, 44:57 ^w , 44:60, 44:106, 44:110, 44:135, 44:158, 46:12, 51:64, 51:148, 53:14, 55:51, 58:18, C*03:05, C*03:25, C*03:27, C*03:143, C*03:167
25^{7,8}	130 bp, 265 bp	800 bp	13, 14, 15, 35, 40, 41, 44, 45, 47, 49, 50	*13:01:01-13:04, 13:06-13:13, 13:15-13:23, 13:25- 13:57, 13:59-13:67, 14:01:01-14:02:08, 14:03-14:04, 14:07N, 14:09, 14:11-14:12, 14:14-14:33, 15:46, 15:53, 15:106, 15:212, 18:44:01-18:44:02, 35:46- 35:47, 35:63, 35:154, 35:207, 35:217, 40:01:01- 40:01:29, 40:07, 40:10:01-40:10:02, 40:14:01-40:16, 40:22N-40:23, 40:25, 40:30-40:34, 40:36, 40:38, 40:42-40:43, 40:45, 40:47-40:49, 40:51-40:55, 40:58- 40:63, 40:65-40:67, 40:69, 40:72:01-40:73, 40:76- 40:77, 40:79-40:81, 40:84, 40:87:01-40:88, 40:92, 40:100-40:102, 40:106, 40:108, 40:110, 40:112- 40:114, 40:116-40:118N, 40:121, 40:123-40:126,

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26⁸	185 bp, 235 bp	800 bp	14, 16, 27, 37, 38, 39, 47, 64, 67	*07:02:32, 14:01:01-14:01:03, 14:07N-14:08, 14:10, 14:12, 14:14, 14:19, 14:26, 14:32, 27:01-27:05:15, 27:05:17-27:05:19, 27:05:21-27:06, 27:08-27:10, 27:12-27:13, 27:16-27:18, 27:20, 27:23, 27:26-27:27, 27:29, 27:31, 27:35-27:37, 27:39-27:42, 27:44-27:46, 27:48-27:61, 27:64N-27:69, 27:72-27:75, 27:77-27:80, 27:82-27:105, 37:02, 38:01:01-38:02:02, 38:02:04-38:03, 38:07-38:24, 38:26-38:32, 38:34N-38:43, 39:01:01:01-39:01:01:03, 39:01:03-39:01:08, 39:01:10-39:02:01, 39:03, 39:05:01-39:09, 39:11, 39:14-39:15, 39:18, 39:19:02, 39:22, 39:24:01-39:39:01, 39:40:01N-39:44, 39:46-39:48, 39:50-39:62, 39:64-39:71, 39:73-39:75, 39:77, 39:79-39:82, 47:04-47:05, 48:21, 48:26, 67:01:01, 67:03
27⁹	180 bp	800 bp	14, 35, 38, 39, 65	*07:28, 08:87, 14:02:01-14:02:02, 14:02:04-14:02:05, 14:02:07-14:06:02, 14:09, 14:11, 14:13, 14:15-14:18, 14:20, 14:22-14:23, 14:25, 14:27, 14:29-14:31, 14:33, 15:77, 15:189, 15:233, 35:26, 38:05, 38:33, 39:04, 44:16, 44:37:01-44:37:02, 44:64:01-44:64:02, 44:91, 44:132, 44:150, 52:26, 57:04, A*23:31, A*24:106, C*07:231, C*16:10
28	290 bp	1070 bp	15, 62, 63, 75, 76, 77, 46	*15:01:01:01-15:01:03, 15:01:06-15:02:06, 15:03:03, 15:04-15:08, 15:10:02-15:11:03, 15:11:05-15:15, 15:17:01:01-15:17:02, 15:19-15:21, 15:24:01-15:28, 15:30-15:36, 15:38:01-15:40, 15:42-15:46, 15:48, 15:50, 15:55-15:58, 15:60, 15:63, 15:65-15:66, 15:70-15:71, 15:73, 15:75-15:79N, 15:81-15:89, 15:92, 15:94N, 15:96-15:97, 15:101-15:102, 15:104-15:107, 15:109-15:113, 15:116-15:118, 15:120-15:122, 15:125-15:126, 15:128-15:129, 15:135-15:150, 15:152, 15:154-15:155, 15:157, 15:159-15:160, 15:162-15:172, 15:174-15:175, 15:177-15:179, 15:181N-15:185, 15:187-15:196, 15:199, 15:201-15:209N, 15:211, 15:213-15:219, 15:223-15:225, 15:227-15:228, 15:230-15:234,

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29	165 bp, 220 bp, 285 bp, 330 bp	1070 bp	8, 15, 35, 37, 40, 41, 42, 44, 45, 51, 56, 57, 70, 71, 72	*08:01:01-08:05, 08:08N-08:13, 08:15-08:27, 08:29- 08:36, 08:38-08:48, 08:50-08:73, 08:75-08:76, 08:78, 08:80-08:86N, 08:88, 08:90-08:106, 13:46, 15:03:01- 15:03:04, 15:09-15:10:02, 15:18:01-15:18:05, 15:23, 15:29, 15:37, 15:46-15:47:02, 15:49, 15:51-15:54, 15:61-15:62, 15:64:01-15:64:02, 15:69, 15:72, 15:74, 15:80, 15:83, 15:90-15:91, 15:93, 15:98-15:99, 15:103, 15:106, 15:108, 15:114-15:115, 15:119, 15:123-15:124, 15:127, 15:131-15:134, 15:143, 15:151, 15:153, 15:156, 15:158, 15:161, 15:173, 15:176, 15:186, 15:197-15:198, 15:200, 15:210, 15:212, 15:220-15:221, 15:226N, 15:229, 15:235, 15:238, 15:242-15:243, 15:252-15:253, 15:255, 15:259, 15:263, 15:266, 15:274-15:275, 35:87, 37:12, 38:30, 40:12, 40:136, 40:231, 41:01-41:03:02, 41:05-41:09, 41:11-41:17, 41:19-41:27, 42:01:01- 42:02, 42:04-42:08, 42:10-42:15, 42:17-42:19, 44:14- 44:15, 44:18, 44:20, 44:62, 44:100, 44:166, 45:01- 45:14, 51:08, 51:20, 51:36, 51:44N, 51:97, 51:141, 52:19, 55:20, 55:56, 56:13, 57:09, 82:01-82:03, C*07:46
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31	180 bp	800 bp	13, 15, 40, 55, 62, 70, 71, 72, 75	*07:78, 13:01:01-13:02:15, 13:07N-13:09, 13:11, 13:14-13:20, 13:22:01-13:23, 13:25, 13:27-13:34, 13:36-13:45, 13:47, 13:49N-13:50, 13:52, 13:54- 13:58, 13:60-13:61, 13:63N-13:67, 40:48, 45:10, 49:07, 50:31, 54:26, 55:09, 55:22, 55:24
32⁶	105 bp, 195 bp	1070 bp	7, 8, 15, 27, 38, 39, 40, 44, 45, 48, 55, 72	*07:27, 07:50, 08:04, 08:17, 08:54, 15:03:01- 15:03:04, 15:47:01-15:47:02, 15:49, 15:54, 15:61- 15:62, 15:64:01-15:64:02, 15:68-15:69, 15:91, 15:98, 15:103, 15:123, 15:127, 15:131-15:132, 15:151, 15:156, 15:158, 15:173, 15:210, 15:220, 15:235, 15:242, 15:253, 15:259, 15:266, 15:274, 18:37, 27:18, 27:29, 37:28, 38:03, 39:02:01-39:02:02, 39:08, 39:13:01-39:13:02, 39:23, 39:39:01-39:39:02,

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33	195 bp	1070 bp	15, 35, 37, 38, 44, 45, 58, 76	*15:12, 15:14, 15:19, 15:91, 15:131, 15:161, 15:270, 18:54, 18:56, 35:45, 35:71, 37:01:01-37:09, 37:12-37:13, 37:15-37:21, 37:23-37:28, 37:30N-37:33N, 37:35-37:36, 38:17, 44:17, 44:43:01-44:43:02, 44:144, 45:09, 46:17, 53:22, 58:07, A*24:174
34^{6,10}	105 bp, 395 bp, 435 bp	1070 bp	7, 15, 41, 42, 59, 62, 63, 77	*07:04, 07:25, 07:146, 15:09-15:10:02, 15:13:01-15:13:02, 15:16:01-15:18:05, 15:21, 15:23-15:24:02, 15:37, 15:44, 15:51-15:52, 15:66-15:67, 15:72, 15:80, 15:87, 15:90, 15:93, 15:95, 15:99, 15:108, 15:114-15:115, 15:119, 15:124, 15:133-15:134, 15:153, 15:157, 15:161-15:162, 15:168, 15:176-15:177, 15:186, 15:189, 15:196-15:198, 15:200, 15:208, 15:216, 15:221-15:222, 15:226N, 15:229-15:230, 15:238, 15:243, 15:252, 15:254, 15:263, 15:268, 15:273, 15:275, 40:136, 40:231, 41:08, 42:05:01-42:05:02
35^{6,10}	115 bp, 150 bp	1070 bp	18	*18:01:01:01-18:15, 18:17N-18:28, 18:30-18:71, 18:73-18:89, 48:28
36⁶	80 bp	1070 bp	27, 40, 44	*07:73, 08:88, 08:102, 27:01-27:21, 27:23-27:51, 27:53-27:66N, 27:68-27:74, 27:76-27:105, 38:22, 40:46, 40:93, 44:40, 44:44, 44:130, 49:26
37	150 bp	800 bp	13, 15, 18, 27, 35, 37, 39, 40, 44, 48, 51, 53, 55, 56, 57, 58, 62, 75, 77	*08:49, 13:01:01-13:01:06, 13:06-13:07N, 13:12:01-13:13, 13:17, 13:20, 13:22:01-13:23, 13:25-13:26, 13:28-13:29, 13:36, 13:39, 13:43, 13:50-13:52, 13:57, 13:60-13:61, 13:63N, 14:10, 15:02:01-15:02:06, 15:13:01-15:13:02, 15:20-15:21, 15:25:01-15:25:03, 15:36, 15:44, 15:62, 15:77, 15:80, 15:85, 15:88-15:89, 15:106, 15:112, 15:121, 15:139, 15:144, 15:154, 15:165, 15:170, 15:194, 15:204, 15:213-15:214, 15:223, 15:240, 15:250, 15:265, 15:271, 18:22, 18:69, 27:19, 27:30, 35:01:01:01-35:04:03, 35:06-35:08:06, 35:10-35:17, 35:19-35:21, 35:23-35:30, 35:33-35:36, 35:38-35:42:02, 35:45-35:50, 35:52, 35:54-35:57, 35:59, 35:61:01-35:63, 35:65Q, 35:69-35:71, 35:74, 35:76-35:78, 35:80-35:85, 35:90-35:96, 35:98, 35:100-35:101:02, 35:103-35:113, 35:115-35:116, 35:120-35:126, 35:128-35:134N, 35:136-35:150, 35:152-35:173N, 35:175-35:184, 35:186-35:198, 35:200-35:204, 35:206-35:229, 37:01:01-37:01:07, 37:01:09, 37:03N-37:06, 37:08, 37:10-37:11, 37:13-37:37, 38:20, 39:42, 40:28, 44:02:01:01-44:14, 44:16-44:17, 44:19N, 44:21-44:30, 44:32-44:40, 44:42-44:46, 44:48-44:52N, 44:55-44:64:02, 44:66-44:98, 44:101-44:105, 44:107-44:134, 44:136-44:137, 44:139-44:157, 44:159-44:165, 44:167-44:175, 46:33, 48:02:01-48:02:03, 48:25, 50:17, 51:04, 51:42,

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38	140 bp	1070 bp	7, 8, 18, 35, 37, 39, 56, 78	*07:65, 07:134, 08:32, 15:202, 15:239, 18:01:01:01-18:08, 18:10-18:15, 18:17N-18:36, 18:38-18:47, 18:50-18:53, 18:55-18:65, 18:68-18:78, 18:80-18:89, 35:01:01:01-35:03:02, 35:03:04-35:18, 35:20:01-35:24:02, 35:28-35:45, 35:48, 35:50-35:55, 35:57-35:62, 35:64:01-35:72, 35:74-35:153, 35:155-35:197, 35:199-35:202, 35:204-35:206, 35:208-35:209, 35:211-35:216N, 35:218-35:229, 37:11, 37:37, 39:19:01-39:19:02, 40:185, 40:209, 56:06, 78:01:01-78:05, 78:07
39^{6,10}	60 bp, 245 bp, 400 bp	1070 bp	15, 62, 63, 70, 71, 72, 75, 76, 77, 40, 44	*15:01:01:01-15:01:04, 15:01:06-15:21, 15:23-15:40, 15:42-15:58, 15:60-15:67, 15:69-15:99, 15:102-15:129, 15:131-15:179, 15:181N-15:235, 15:237-15:254, 15:256-15:275, 40:12, 82:01-82:03, C*03:179
40^{9,10}	210 bp	800 bp	7, 8, 15, 18, 37, 38	*07:27, 08:49, 18:54, 37:01:01-37:37, 38:17, C*07:302
41⁸	170 bp	800 bp	15, 35, 38, 39, 67	*08:55, 15:69, 15:186, 35:35, 38:01:01-38:09, 38:11-38:21, 38:23-38:29, 38:31-38:35, 38:38-38:43, 39:01:01:01-39:01:01:03, 39:01:03-39:20, 39:22-39:24:02, 39:26-39:29, 39:31, 39:35, 39:37-39:42, 39:44-39:46, 39:48-39:49, 39:51-39:73, 39:75-39:81, 40:184, 51:101, 58:20, 67:01:01-67:03, C*15:51
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43	395 bp	1070 bp	14, 38, 39, 64, 65	*07:69, 07:85, 07:180, 08:65, 14:01:01-14:20, 14:22-14:33, 38:01:01-38:02:05, 38:04-38:05, 38:08-38:25, 38:27-38:43, 39:01:01:01-39:01:01:03, 39:01:03-39:01:16, 39:03-39:07, 39:09, 39:11-39:12, 39:14-39:15, 39:18-39:19:02, 39:22, 39:24:01-39:38Q, 39:40:01N-39:48, 39:50-39:57, 39:59-39:62, 39:64-39:82, 49:26
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48⁶	80 bp, 115 bp, 160 bp, 195 bp, 225 bp, 260 bp	1070 bp	35, 37, 44, 47, 51, 57	*08:49, 08:60, 08:76, 08:87, 35:38, 35:45, 35:71, 35:115, 35:169, 37:01:01-37:01:07, 37:01:09, 37:03N-37:06, 37:08, 37:10-37:37, 40:132, 40:178, 40:231, 42:13, 44:02:01:01-44:03:16, 44:03:18- 44:14, 44:16-44:17, 44:19N-44:36, 44:38-44:63, 44:65-44:134, 44:136-44:149N, 44:151-44:157, 44:159-44:165, 44:167-44:175, 51:42, 53:22, 57:07, 57:09, 57:24, 83:01, C*15:25
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51⁶	90 bp, 175 bp	1070 bp	15, 27, 35, 40, 48, 62, 75, 77, 81	*07:174, 13:36, 15:02:01-15:02:06, 15:08, 15:11:01- 15:11:05, 15:13:01-15:13:02, 15:15, 15:21, 15:31, 15:44, 15:55, 15:76 ^w , 15:88-15:89, 15:112, 15:121, 15:139, 15:144, 15:148, 15:170, 15:189, 15:191, 15:194, 15:209N, 15:213-15:215, 15:223, 15:265, 27:24, 35:46, 40:31, 40:45, 40:80, 48:01:01- 48:01:04, 48:04, 48:06-48:07, 48:09, 48:11, 48:15- 48:16, 48:18-48:20, 48:22, 48:24, 48:27-48:30, 56:39 ^w , 81:01-81:06
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62 ^{6,8,10}	115 bp, 150 bp	1070 bp	15, 18, 27, 35, 39, 46, 54, 55, 56, 62, 73, 75, 76	*07:100, 13:31, 13:41, 15:01:01:01-15:01:04, 15:01:06-15:01:16, 15:01:18-15:01:30, 15:01:32, 15:04, 15:07:01-15:08, 15:11:01-15:12, 15:14-15:15, 15:19, 15:24:01-15:24:02, 15:26N-15:28, 15:30, 15:32, 15:34-15:35, 15:38:01-15:38:02, 15:43, 15:45-15:46, 15:50, 15:53-15:54, 15:56-15:58, 15:60, 15:63, 15:66, 15:68, 15:70-15:71, 15:73, 15:75-15:77, 15:79N, 15:81-15:82, 15:85, 15:87, 15:92, 15:94N, 15:96-15:97, 15:101-15:102, 15:104-15:105, 15:109-15:111N, 15:113, 15:117-15:118, 15:120, 15:122, 15:125-15:126, 15:128-15:129, 15:135, 15:137, 15:140, 15:142-15:149N, 15:152, 15:154, 15:157, 15:159-15:160, 15:163-15:167, 15:169, 15:171-15:172, 15:174-15:175, 15:178, 15:180-15:184, 15:187, 15:189-15:193, 15:201-15:203, 15:205-15:207, 15:209N, 15:211-15:212, 15:215, 15:217, 15:225, 15:227-15:228, 15:231-15:234, 15:236, 15:239, 15:241, 15:244-15:247, 15:251, 15:256-15:262N, 15:264, 15:267, 15:269-15:270, 15:272N, 18:19, 27:25, 27:75, 35:14:01-35:14:02, 35:43:01-35:44, 35:62, 35:67, 35:79, 35:86, 35:102, 35:117, 35:135, 35:163, 35:185, 35:213, 39:18, 39:36, 44:146, 46:01:01-46:02, 46:04-46:05, 46:07N, 46:09-46:10, 46:12, 46:14-46:17, 46:20, 46:22-46:24, 46:26-46:32, 46:34-46:38, 51:61:01-51:61:02, 52:21, 54:06, 55:21, 56:03, 73:01-73:02, A*26:68, A*68:56, C*02:56, C*06:20, C*12:50
63 ¹⁵	360 bp	1070 bp	Bw4	
64	350 bp	1070 bp	Bw6	

¹Alleles are assigned by the presence of specific PCR product(s). However, the sizes of the specific PCR products may be helpful in the interpretation of HLA-B low resolution SSP typings.

When the primers in a primer mix can give rise to HLA-specific PCR products of more than one length this is indicated if the size difference is more than 20 base pairs. Size differences of 20 base pairs or less are not given. For high resolution SSP kits the respective lengths of the HLA-specific PCR product(s) are given for the alleles amplified by these primer mixes.

Nonspecific amplifications, i.e. a ladder or a smear of bands, may sometimes be seen. GC-rich primers have a higher tendency of giving rise to nonspecific amplifications than other primers.

PCR fragments longer than the control bands may sometimes be observed. Such bands should be disregarded and do not influence the interpretation of the SSP typings.

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PCR fragments migrating faster than the control bands, but slower than a 400 bp fragment may be seen in some gel read-outs. Such bands can be disregarded and do not influence the interpretation of the SSP typings.

Some primers may give rise to primer oligomer artifacts. Sometimes this phenomenon is an inherent feature of the primer pair(s) of a primer mix. More often it is due to other factors such as too low amount of DNA in the PCR reactions, taking too long time in setting up the PCR reactions, working at elevated room temperature or using thermal cyclers that are not pre-heated.

²The internal positive control primer pairs amplify segments of the human growth hormone gene. The two different control primer pairs give rise to either an internal positive control band of 1070 base pairs, for most wells, or a band of 800 base pairs, for some wells.

Well number 22 contains the primer pair giving rise to the shorter, 800 bp, internal positive control band.

In addition, wells number 25, 26, 27, 31, 37, 40, 41, 47, 49, 53 and 60 contain the primer pair giving rise to the shorter, 800 bp, internal positive control band.

In the presence of a specific amplification the intensity of the control band often decreases.

³The serological reactivity of all HLA-B alleles is not known. The grouping of not serologically defined alleles is taken from Tissue Antigens 73, 95-170, 2009.

⁴For several HLA Class I alleles 1st and/or 4th exon(s) and beyond, as well as intron nucleotide sequences, are not available. In these instances it is not known whether some of the primers of the SSP sets are completely matched with the target sequences or not. We assume that unknown sequences in these regions are conserved within allelic groups.

⁵The HLA-C*03:05, C*03:25, C*03:27, C*03:143 and C*03:167 alleles will be amplified by primer mix 24, the C*01:30 and C*12:87 alleles will be amplified by primer mix 25, the A*23:31, A*24:106, C*07:231 and C*16:10 alleles will be amplified by primer mix 27, the C*07:02:30 and C*08:16:02 alleles will be amplified by primer mix 28, the C*01:73, allele will be amplified by primer mixes 28 and 49, the C*07:46 allele will be amplified by primer mix 29, the A*24:174 allele will be amplified by primer mix 33, the C*03:102 allele will be amplified by primer mixes 37 and 59, the C*03:179 allele will be amplified by primer mix 39, the C*07:302 allele will be amplified by primer mix 40, the C*15:51 allele will be amplified by primer mix 41, the C*03:129 and C*17:16 alleles will be amplified by primer mix 45, the C*15:25 allele will be amplified by primer mix 48, the C*15:39 alleles will be amplified by primer mix 49, the C*15:02:04 allele will be amplified by primer mix 58, the C*03:19 allele will be amplified by primer mix 59, the C*03:102 alleles will be amplified by primer mix 65, the C*06:72 allele will be amplified by primer mix 60 and the A*26:68, A*68:56, C*02:56, C*06:20 and C*12:50 alleles will be amplified by primer mix 62.

⁶HLA-specific PCR products shorter than 125 base pairs have a lower intensity and are less sharp than longer PCR products.

⁷Primer mix 25 may give rise to a lower yield of HLA-specific PCR product than the other HLA-B low resolution primer mixes in B*40, B*41, B*45, B*49 and B*50 alleles.

⁸Primer mixes 25, 26, 30, 41, 55, 57 and 62 may give rise to a lower yield of HLA-specific PCR product than the other HLA-B low resolution primer mixes.

⁹Primer mixes 27, 30, 40 and 57 may have tendencies of unspecific amplifications, most pronounced in primer mix 30.

¹⁰Primer mixes 22, 34, 35, 39, 40, 42, 60 and 62 have a tendency to giving rise to primer oligomer formation.

¹¹The B*15, B*46, B*57, B*58 and C*03 alleles may be faintly amplified by primer mix 30.

¹²Primer mix 57 may give rise to a lower yield of B*54 alleles than the other B low primer mixes.

¹³The C*17:01 to C*17:04 alleles might be faintly amplified by primer mix 45.

¹⁴Primer mix 50 might generate a false band of about 800 base pairs. This band should be disregarded when interpreting HLA-B low resolution typings.

¹⁵The Bw4-associated HLA-A specificities A23, A24, A2403, A25 and A32 are not amplified by the primer pair in primer mix 63.

'w', might be weakly amplified.

'?', nucleotide sequence information not available for the primer matching sequence.

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Lot-specific information
SPECIFICITY TABLE

Specificities and sizes of the PCR products of the 23 primer mixes used for
 DR low resolution SSP typing

Primer Mix	Size of spec. PCR product ¹	Size of control band ²	DR serology ³	Amplified HLA-DRB alleles ⁴
65 ^{6,7}	205 bp, 255 bp	515 bp	1	*01:01:01-01:02:08, 01:04-01:38, 01:40N-01:58
66	200 bp	430 bp	103	*01:03, 01:39N, 01:42
67	200 bp, 220 bp	430 bp	15	*15:01:01-01-15:94
68	210 bp	430 bp	16	*16:01:01-16:05:02, 16:07-16:23
69 ^{5,6,11}	120 bp, 220 bp	430 bp	3, 17, 18, 11	*03:01:01-01-03:75, 03:77-03:84, 03:86-03:90, 11:07, 11:53, 11:103, 11:105, 11:107, 11:125, 15:25
70 ^{5,11}	80 bp, 210 bp	430 bp	3, 17, 11, 13, 14	*03:01:01-01-03:01:22, 03:04-01-03:06, 03:08- 03:16, 03:18-03:20, 03:22-03:23, 03:25-03:26, 03:28, 03:30-03:31, 03:33-03:34, 03:36-03:37, 03:43-03:48, 03:50-03:52, 03:54-03:68N, 03:70- 03:73, 03:75-03:84, 03:86, 03:89, 08:40, 11:02-01-11:03, 11:11-01-11:11:02, 11:14-01- 11:14:02, 11:16, 11:20-11:21, 11:36, 11:40- 11:41, 11:48, 11:59, 11:63, 11:65-01-11:65:02, 11:68, 11:70, 11:73, 11:76, 11:79-11:80, 11:83, 11:85-11:87, 11:93, 11:118, 11:122, 11:124, 11:127, 11:131-11:132, 11:135, 11:138-11:139, 11:142, 13:01-01-13:04, 13:08, 13:10, 13:15- 13:17, 13:19-13:20, 13:22-13:24, 13:27-13:29, 13:31-13:41, 13:43, 13:45, 13:48, 13:51-13:54, 13:57, 13:59, 13:61-01-13:61:02, 13:63- 13:66:02, 13:68-13:76, 13:78-13:81, 13:83- 13:85, 13:87-13:99, 13:101-13:102, 13:104- 13:107, 13:109, 13:111-13:117, 13:120-13:131, 13:133, 13:135, 13:137N-13:145, 13:147- 13:149, 13:151-13:153, 13:155, 13:159, 14:16, 14:19, 14:21, 14:82, 14:95, 14:109, 14:132, 14:137N
71 ⁵	85 bp, 210 bp	430 bp	3, 18, 11, 13, 14	*03:02-01-03:03, 03:27, 03:29, 03:38, 03:53, 03:74, 03:88, 03:90, 11:13-01 ^w -11:13:02 ^w , 11:26, 11:34, 13:15, 13:19, 13:26-01-13:26:02, 13:44, 13:53, 13:57, 13:85-13:86, 13:104, 14:02- 14:03:02, 14:06-01-14:06:02, 14:09, 14:12-01- 14:13, 14:17-14:21, 14:24, 14:27, 14:29-14:30, 14:32-01 ^w -14:32:02 ^w , 14:33, 14:40-14:41, 14:47- 14:49, 14:51, 14:63, 14:65 ^w , 14:67, 14:77-14:78, 14:80-14:81, 14:83, 14:85, 14:89, 14:94, 14:98, 14:102, 14:106, 14:108-14:109, 14:115, 14:119, 14:121, 14:135

101.708-24 – including *Taq* polymerase, IFU-01
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Lot-specific information

72 ^{5,6,7}	100 bp, 175 bp	430 bp	3, 4	*04:01:01-04:05:11, 04:05:13-04:158N
73	210 bp, 235 bp	430 bp	7, 13, 14	*07:01:01:01-07:01:04, 07:03-07:24, 12:22, 13:17, 13:116, 14:50
74 ⁶	170 bp, 215 bp, 250 bp	515 bp	8, 12, 14	*08:01:01-08:19, 08:21-08:53, 11:67, 12:04, 12:16:01-12:16:02, 12:22, 12:39, 14:11, 14:15, 14:68, 14:93
75 ^{5,6}	90 bp, 135 bp, 180 bp	430 bp	3, 9, 11	*03:08, 03:65, 09:01:02-09:20, 11:07, 11:53, 11:103, 11:105, 11:107, 11:125
76 ⁷	175 bp	430 bp	10	*03:76, 10:01:01-10:05, 11:59, 11:80, 11:83, 11:87, 11:135, 11:142, 13:27, 13:41, 13:71, 13:129
77 ^{5,6}	100 bp, 170 bp	430 bp	11, 3, 8	*03:08, 03:65, 08:31, 08:41, 11:01:01-11:70, 11:72-11:145
78 ^{5,6,9}	85 bp, 105 bp	430 bp	12, 8	*08:32, 08:53, 12:01:01-12:39
79 ^{7,8}	215 bp	430 bp	6, 8, 11, 13, 14, 1403	*03:76, 08:20-08:21, 11:01:01-11:04:11, 11:06:01-11:06:03, 11:08:01-11:12:02, 11:14:01- 11:16, 11:18-11:21, 11:23:01-11:25, 11:27:01- 11:33, 11:35-11:51, 11:54:01-11:54:02, 11:56- 11:66, 11:68, 11:70, 11:72-11:81, 11:83-11:88, 11:90-11:97, 11:99-11:102:02, 11:106, 11:108- 11:124, 11:126-11:135, 11:137-11:142, 11:144- 11:145, 13:01:01-13:02:01, 13:02:03-13:08, 13:10-13:16, 13:18-13:43, 13:45-13:85, 13:87- 13:115, 13:117-13:128, 13:130-13:145, 13:147- 13:161, 14:03:01-14:03:02, 14:12:01-14:12:02, 14:16, 14:19, 14:21-14:22, 14:25, 14:27, 14:40, 14:53, 14:63, 14:67, 14:69, 14:74, 14:77-14:78, 14:84-14:85, 14:98, 14:102, 14:105, 14:109, 14:115-14:116, 14:128, 14:135, 14:137N, DRB3*02:27
80 ^{6,7,8}	195 bp, 225 bp	430 bp	13, 8, 11, 12, 14	*08:01:01-08:02:04, 08:04:01-08:09, 08:11, 08:16-08:17, 08:20-08:22, 08:24, 08:26, 08:28, 08:31, 08:39, 08:41-08:44, 08:50, 08:52, 11:01:01-11:01:17, 11:02:01-11:06:03, 11:09- 11:12:02, 11:14:01-11:16, 11:20-11:21, 11:23:01-11:25, 11:27:01-11:30, 11:32-11:33, 11:35-11:41, 11:43-11:44, 11:46:01-11:51, 11:54:01-11:56, 11:58:01-11:63, 11:65:01-11:70, 11:72, 11:74:01-11:78, 11:80-11:88, 11:90- 11:97, 11:99-11:102:02, 11:106, 11:108-11:118, 11:120-11:124, 11:126-11:129, 11:133-11:135, 11:137-11:142, 11:144-11:145, 12:02:01- 12:02:05, 12:13, 12:15-12:16:02, 12:18-12:21, 12:23, 12:26-12:27, 12:31N-12:33, 12:37, 13:01:01-13:02:01, 13:02:03-13:02:08, 13:04- 13:05:02, 13:07:01-13:09, 13:11:01-13:11:02,

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				13:14:01-13:24, 13:26:01-13:29, 13:31-13:32, 13:34-13:36, 13:38-13:43, 13:45-13:55, 13:57, 13:59, 13:61:01-13:65, 13:67-13:76, 13:78-13:80, 13:83-13:84, 13:87, 13:91-13:93, 13:96:01-13:100, 13:102-13:109, 13:111-13:114, 13:116-13:117, 13:121, 13:123-13:132, 13:135-13:136, 13:138-13:150, 13:153, 13:155, 13:158-13:160, 14:15-14:16, 14:22, 14:24-14:25, 14:27, 14:37, 14:53, 14:73, 14:105, 14:128
81¹¹	175 bp	430 bp	3, 13, 14, 8	*03:01:01:01-03:07, 03:09, 03:11:01-03:41, 03:43-03:45, 03:47-03:63, 03:66-03:68N, 03:70-03:84, 03:86, 03:88-03:90, 08:20, 13:01:01-13:16, 13:18-13:42, 13:44, 13:46-13:66:02, 13:68-13:102, 13:104-13:115, 13:117-13:121, 13:123-13:158, 13:161, 14:02-14:03:02, 14:05:01-14:06:02, 14:09, 14:12:01-14:14, 14:17-14:21, 14:23:01, 14:23:03-14:24, 14:27, 14:29-14:30, 14:33, 14:36-14:37, 14:40-14:45, 14:47-14:48, 14:51, 14:56, 14:59, 14:63-14:65, 14:67, 14:77-14:78, 14:80-14:81, 14:83-14:85, 14:89, 14:91, 14:94-14:96, 14:98, 14:100, 14:102-14:103, 14:106, 14:108-14:109, 14:115-14:116, 14:121, 14:123, 14:127:01-14:127:02, 14:134-14:136
82⁵	100 bp, 140 bp, 155 bp	430 bp	14, 4, 8, 13	*04:62, 04:69, 04:73, 04:105:01-04:105:02, 04:122, 04:146, 08:08, 11:69, 11:82, 13:45, 14:01:01-14:01:02, 14:01:04, 14:04, 14:07:01-14:07:02, 14:10, 14:16, 14:22, 14:25-14:26, 14:28, 14:31-14:32:03, 14:35, 14:37-14:39, 14:49-14:50, 14:53-14:54:01, 14:55, 14:57-14:58, 14:60-14:62, 14:68-14:71, 14:73-14:76, 14:79, 14:82, 14:86-14:88, 14:90, 14:93, 14:99, 14:101, 14:104-14:105, 14:107, 14:110-14:114, 14:117-14:120, 14:122, 14:124-14:125, 14:128-14:129, 14:131, 14:137N-14:140, DRB4*01:03:01:02N
83^{5,6,7,10}	110 bp, 135 bp, 170 bp	430 bp	14, 3, 9, 11, 12, 13, 15	*03:10, 09:01:02-09:01:05, 09:01:07-09:02:02, 09:04-09:20, 11:13:01-11:13:02, 11:17, 11:52, 13:43, 13:159, 14:01:01-14:02, 14:04-14:11, 14:13-14:14, 14:16-14:18, 14:19 ^w , 14:20, 14:21 ^w , 14:22-14:23:04, 14:26, 14:28-14:36, 14:38-14:39, 14:41, 14:43-14:52, 14:54:01-14:57, 14:59-14:62, 14:64-14:65, 14:68, 14:70-14:76, 14:79-14:83, 14:86-14:88, 14:90-14:97, 14:99-14:101, 14:103-14:108, 14:109 ^w , 14:110-14:114, 14:117-14:127:02, 14:129-14:134, 14:137N-14:140, 15:27, 15:34, 15:66
84^{5,6}	110 bp, 175 bp, 225 bp	430 bp	14, 3, 8, 11, 13, 15, 16	*03:10, 08:09, 08:20-08:21, 08:32, 08:35, 08:36:02, 08:53, 11:13:01-11:13:02, 11:17, 11:23:01, 11:25, 11:31, 11:45, 11:52, 11:55,

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				11:64, 11:89, 11:96, 11:119, 13:13, 13:18, 13:43, 13:45, 13:47, 13:55, 13:119, 13:144, 13:146, 13:154, 13:156, 13:158-13:159, 14:01:01-14:01:04, 14:03:01-14:05:04, 14:07:01- 14:08, 14:10-14:12:02, 14:14-14:16, 14:18, 14:22-14:23:04, 14:25-14:28, 14:31-14:32:03, 14:34-14:36, 14:38-14:40, 14:42-14:45, 14:49- 14:50, 14:53-14:65, 14:67-14:79, 14:81-14:82, 14:84-14:93, 14:95-14:97, 14:99-14:105, 14:107, 14:110-14:120, 14:122-14:140, 15:21 ^w , 16:04 ^w , 16:18 ^w
85 ^{6,11}	160 bp, 240 bp	430 bp	52	DRB3*01:01:02:01-01:15, DRB3*02:01-02:29N, DRB3*03:01:01-03:03
86 ^{7,12}	215 bp	430 bp	53	DRB4*01:01:01:01-01:08
87	175 bp	430 bp	51	DRB5*01:01:01-01:14, DRB5*02:02-02:06

¹Alleles are assigned by the presence of specific PCR product(s). However, the sizes of the specific PCR products may be helpful in the interpretation of DR low resolution SSP typings.

When the primers in a primer mix can give rise to HLA-specific PCR products of more than one length this is indicated if the size difference is more than 20 base pairs. Size differences of 20 base pairs or less are not given. For high resolution SSP kits the respective lengths of the HLA-specific PCR product(s) are given for the alleles amplified by these primer mixes

Nonspecific amplifications, i.e. a ladder or a smear of bands, may sometimes be seen. GC-rich primers have a higher tendency of giving rise to nonspecific amplifications than other primers, e.g. the primers in wells 67, 72, 82, 83 and 84.

PCR fragments longer than the control bands may sometimes be observed. Such bands should be disregarded and do not influence the interpretation of the SSP typings.

PCR fragments migrating faster than the control bands, but slower than a 400 bp fragment may be seen in some gel read-outs. Such bands can be disregarded and do not influence the interpretation of the SSP typings.

Some primers may give rise to primer oligomer artifacts. Sometimes this phenomenon is an inherent feature of the primer pair(s) of a primer mix. More often it is due to other factors such as too low amount of DNA in the PCR reactions, taking too long time in setting up the PCR reactions, working at elevated room temperature or using thermal cyclers that are not pre-heated.

²The internal positive control primer pairs amplify segments of the human growth hormone gene. The two different control primer pairs give rise to either an internal positive control band of 430 base pairs, for most wells, or a band of 515 base pairs, for some wells.

Well number 65 contains the primer pair giving rise to the longer, 515 bp, internal positive control band. In addition, well number 74 contains the primer pair giving rise to the longer, 515 bp, internal positive control band.

In the presence of a specific amplification the intensity of the control band often decreases.

³The serological reactivity of all DRB alleles is not known. The grouping of not serologically defined alleles is taken from Tissue Antigens 73, 95-170, 2009.

⁴For several DRB1 alleles 1st and/or 3rd exon(s) and beyond, as well as intron nucleotide sequences, are not available. In these instances it is not known whether some of the primers of the SSP sets are completely matched with the target sequences or not. We assume that unknown sequences in these regions are conserved within allelic groups.

⁵Specific PCR fragments shorter than 125 base pairs have a lower intensity and are less sharp than longer PCR bands.

⁶Individual alleles can give rise to two differently sized specific PCR fragments in primer mixes 65 and 69, 72, 74, 75, 77, 78, 80 and 83 to 85.

⁷Primer mixes 65, 72, 76, 79, 80, 83 and 86 have a tendency to giving rise to primer oligomer formation.

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⁸Primer mixes 79 and 80 may give rise to a lower yield of HLA-specific PCR product than the other DR low resolution primer mixes.

⁹Primer mix 78 may have tendencies of unspecific amplifications.

¹⁰Primer mix 83 has a tendency of primer oligomer formation and also has an intense primer cloud due to the high number of primers present in the primer mix.

¹¹Due to sharing of sequence motifs in codon 38, DRB3*01:14 will also be amplified in primer mixes 69, 70 and 81 in addition to primer mix 85.

¹²The DRB4*01:03:01:02N allele is amplified by primer mix 86, whereas the DRB4*02:01N and DRB4*03:01N null alleles are not amplified by this primer mix.

‘w’, might be weakly amplified.

101.708-24 – including *Taq* polymerase, IFU-01
 101.708-24u – without *Taq* polymerase, IFU-02

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Lot-specific information
SPECIFICITY TABLE

DQ low resolution SSP typing

Specificities and sizes of the PCR products of the 8 primer mixes used for
 DQ low resolution SSP typing

Primer Mix	Size of spec. PCR product ¹	Size of control band ²	DQ serology ³	Amplified DQB1 alleles ⁴
88	225 bp	515 bp	5	*05:01:01:01-05:26
89⁵	220 bp, 275 bp	515 bp	1, 5, 6	*06:01:01-06:84
90	210 bp	430 bp	2	*02:01:01-02:29
91⁶	220 bp	515 bp	3, 7	*03:01:01:01-03:01:16, 03:04, 03:09-03:10, 03:13-03:14:02, 03:16, 03:19, 03:21-03:22, 03:24, 03:27-03:29, 03:35-03:36, 03:42, 03:44, 03:46-03:60, 03:69, 03:71
92⁶	130 bp	515 bp	6, 8	*03:02:01-03:02:07, 03:05:01-03:05:04, 03:07-03:08, 03:11, 03:18, 03:32, 03:37, 03:45, 03:61, 03:63-03:64, 03:66N-03:68, 03:70, 06:29
93^{6,7}	135 bp	515 bp	2, 3, 9	*02:03, 03:03:02:01-03:03:06, 03:06, 03:12, 03:15, 03:20, 03:25-03:26, 03:30-03:31, 03:33-03:34, 03:38-03:41, 03:43, 03:65, 04:03:01-04:03:02, 06:51, 06:66
94^{7,8}	85 bp, 185 bp	515 bp	3, 7, 8, 9	*03:01:01:01-03:72
95⁶	160 bp	430 bp	4	*04:01:01-04:09, 04:11-04:12
96⁹				Negative control

¹Alleles are assigned by the presence of specific PCR product(s). However, the sizes of the specific PCR products may be helpful in the interpretation of DQ low resolution SSP typings. When the primers in a primer mix can give rise to HLA-specific PCR products of more than one length this is indicated if the size difference is more than 20 base pairs. Size differences of 20 base pairs or less are not given. For high resolution SSP kits the respective lengths of the HLA-specific PCR product(s) are given for the alleles amplified by these primer mixes

Nonspecific amplifications, i.e. a ladder or a smear of bands, may sometimes be seen. GC-rich primers have a higher tendency of giving rise to nonspecific amplifications than other primers.

PCR fragments longer than the control bands may sometimes be observed. Such bands should be disregarded and do not influence the interpretation of the SSP typings.

PCR fragments migrating faster than the control bands, but slower than a 400 bp fragment may be seen in some gel read-outs. Such bands can be disregarded and do not influence the interpretation of the SSP typings.

Some primers may give rise to primer oligomer artifacts. Sometimes this phenomenon is an inherent feature of the primer pair(s) of a primer mix. More often it is due to other factors such as too low amount of DNA in the PCR reactions, taking too long time in setting up the PCR reactions, working at elevated room temperature or using thermal cyclers that are not pre-heated.

²The internal positive control primer pairs amplify segments of the human growth hormone gene.

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Lot No.: 70S**Lot-specific information**

The two different control primer pairs give rise to either an internal positive control band of 430 base pairs, for most wells, or a band of 515 base pairs, for some wells.

Well number 88 contains the primer pair giving rise to the longer, 515 bp, internal positive control band. In addition, wells number 89 and 91 to 94 contain the primer pair giving rise to the longer, 515 bp, internal positive control band.

In the presence of a specific amplification the intensity of the control band often decreases.

³The serological split of the DQB1*05:05-05:26, DQB1*06:06 to 06:07 alleles, the DQB1*06:10, 06:13, 06:15-06:24 and 06:27 to 06:84, the DQB1*02:04-02:29, the DQB1*03:07-03:09 and 03:11-03:72 alleles and the DQB1:04:0301-04:12 alleles is not known. In this table we have used the expert-assigned serological grouping in Tissue Antigens (2009) 73:95-170, and also inferred the serological grouping from the naming of the sequence-defined allele.

⁴For several DQB1 alleles 1st and/or 3rd exon(s) and beyond, as well as intron nucleotide sequences, are not available. In these instances it is not known whether some of the primers of the SSP sets are completely matched with the target sequences or not. We assume that unknown sequences in these regions are conserved within allelic groups.

⁵Primer mix 89 has a tendency to giving rise to primer oligomer formation.

⁶Primer mixes 91, 92, 93 and 95 may give rise to a lower yield of HLA-specific PCR product than the other DQ low resolution primer mixes.

⁷Primer mixes 93 and 94 may have tendencies of unspecific amplifications.

⁸The primer pair in well 94 will in some samples give rise to two HLA-specific PCR fragments and may give rise to a lower yield of HLA-specific PCR product than the other DQ low primer mixes.

⁹Primer mix 96 contains a negative control, which will amplify more than 95% of HLA amplicons as well as the amplicons generated by control primer pairs. PCR product sizes range from 75 to 200 base pairs. The PCR product generated by the control primer pair is 430 base pairs.

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Lot-specific information

INTERPRETATION TABLE																						
HLA-A low resolution SSP typing																						
Amplification patterns of the A*01:01 to A*80:03 alleles																						
		Well ¹²																				
		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21
Length of spec. PCR product(s)		120	175	205	190	135	175	165	75	80	80	125	175	80	90	240	140	200	340	210	65	75
		145	215	235		200	205	200		240	175	190	225	115	135	380	180	390	375	240	240	160
												500									375	240
															200	205						
															240							
Length of int. pos. control¹		800	800	1070	800	800	1070	800	800	800	1070	800	1070	1070	1070	1070	1070	1070	800	800	800	800
5'-primer(s)²		98	48	363	98	176	98	98	261	98	301	103	98	98	203	41	180	41	302	78	28	176
3'-primer(s)³		203	240	527	256	270	259	259	302	299	341	257	282	180	299	238	290	256	397	265	97	292



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Lot-specific information

Well No.		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21
HLA-A allele ⁴	ser ⁵																					
*01:01:01:01-01:01:22, 01:01:24-01:01:47, 01:01:49- 01:01:55, 01:02-01:04N, 01:06-01:07, 01:09-01:11N, 01:16N-01:18N, 01:20, 01:22N-01:27N, 01:29, 01:31N-01:33, 01:35-01:42, 01:44-01:50, 01:52N-01:78, 01:80-01:94, 01:96-01:98, 01:100-01:120, 01:122- 01:125, 01:127-01:130, 36:04 ⁶	A1, A36, Null, -	1			4																	
*01:01:23, 01:01:48, 01:08, 01:14-01:15N, 01:30, 01:79, 01:99, 36:01, 36:03, 36:05 ⁶	A1, A36, Null, -	1																				
*01:01:56	-	1			4								w									
*01:12, 01:19	A1, -	1		3																		
*01:13	A1	1		4							10	12		14								
*01:21, 01:126	A1, -	1		3	4																	
*01:28	-	1		4							10			14								
*01:43	-	1		4						9												
*01:51	-	1		4				7		9												
*01:95	-	1		4													16					
*01:121	-	1		4															18			
*02:01:01:01-02:01:15, 02:01:17-02:01:19, 02:01:21- 02:01:81, 02:01:83-02:16, 02:17:03-02:22:02, 02:24:01- 02:33, 02:36-02:45, 02:47, 02:49-02:54, 02:57-02:61, 02:63-02:64, 02:66-02:69, 02:71-02:77, 02:79:01- 02:97:02, 02:99, 02:101:01- 02:102, 02:104-02:128, 02:130-02:134, 02:136- 02:148, 02:150-02:168, 02:170-02:236, 02:238- 02:242, 02:244-02:308, 02:310-02:337, 02:339- 02:406, 02:408-02:414, 02:416-02:417	A2, Low A2, A203/A 2, A210/A 2, A2/blan k, Null, -		2																			
*02:17:01-02:17:02	A2		2					w														
*02:34-02:35:01, 02:35:03, 02:56:01-02:56:02, 02:62, 02:103	A2		2										12							19		
Well No.		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21

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Lot-specific information

Well No.		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	
HLA-A allele ⁴	ser ⁵																						
*02:35:02	A2												12								19		
*02:46, 02:70	A2		2																		19		
*02:48, 02:129	A2, -																				19		
*02:55	A2/A28		2					7														20	21
*02:65, 02:407	A2/A19, -		2																	18			
*02:78	-		w		4																19		
*02:135	-		2										12										
*02:149	-		2																			20	
*02:169	-		2		4																		
*02:237	-		2											13		15							
*02:243	-		2															17				20	
*02:309	-		2									11		13								20	
*02:338	-		2	3																			
*03:01:01:01-03:01:18, 03:01:20-03:01:22, 03:01:24- 03:07, 03:09-03:11N, 03:13- 03:17:02, 03:19-03:23:02, 03:25-03:31, 03:33-03:35, 03:37-03:40, 03:42, 03:44- 03:49, 03:51-03:56, 03:58, 03:60-03:62, 03:64-03:71, 03:73-03:74, 03:76-03:81, 03:83-03:87, 03:90-03:94, 03:96-03:106, 03:109- 03:110, 03:112-03:134, 03:136-03:141, 03:143- 03:151, 03:153-03:166	A3, A3/blank, Null, -				3								12										
*03:01:19	-			3								11	12										
*03:01:23, 03:08, 03:32, 03:36N, 03:57, 03:59, 03:72, 03:89, 03:107-03:108, 03:111, 03:142, 03:152, 24:92 ⁷	A3, Null, -			3																			
*03:12	A3			3	4																		
*03:18, 03:135	-	1			4								12										
*03:24, 03:50	A3, -			3				7					12										
*03:41	-			3																			21
*03:43, 03:82	-			3									12		14		16						
*03:63	-			3								10	12										21
*03:75	-												12										21
*03:88, 11:130 ⁸	-			3	4							10											21
*03:95	-												12	13		15							
Well No.		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	

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Lot No.: **70S**

Lot-specific information

Well No.		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	
HLA-A allele ⁴	ser ⁵																						
*11:01:01-11:09, 11:12-11:16, 11:18-11:24:02, 11:26-11:27, 11:29-11:39, 11:41-11:52Q, 11:54-11:59, 11:61-11:93, 11:95-11:111, 11:114-11:129, 11:131-11:138, 11:141-11:142	A11, Null, -				4						10												
*11:10	A11				4			7			10												
*11:11	-				4						10	11											
*11:17, 11:40	-				4					9	10												
*11:25, 11:60	A11, -			3	4						10												
*11:94, 11:112	-	1			4						10												
*11:113	-				4						10				14								
*11:139	-				4		6				10												
*23:01:01-23:13, 23:15-23:56, 23:58, B*18:27 ⁹	A23, Null, -					5																	
*23:14:01-23:14:02, 24:24, 24:71 ¹⁰	A23, A9, A24, -					5	6																
*23:57	-																					20	
*24:02:01:01-24:11N, 24:13:01-24:13:02, 24:17, 24:20-24:23, 24:25-24:43, 24:45N-24:50, 24:54-24:56, 24:58-24:63, 24:66-24:70, 24:72-24:81, 24:83N-24:91, 24:93, 24:95-24:113, 24:115-24:137, 24:139-24:187, 24:189-24:203, 24:205-24:210, 24:212, 24:214-24:221, 24:223-24:227, 24:229-24:232N	A24, Low A24, A2403/A24, A9, A24/A9, Null, -						6																
*24:18, 24:204, 24:213	A24/A3, -						6																21
*24:19, 24:44	A9						6				10												
*24:82	-						6															20	
*25:01:01-25:04, 25:07-25:16, 25:18-25:22	A25, Null, -							7	8				12										
*25:05	A25							7	8			11	12								19		
*25:06	A25							7	8			11											
*25:17	-								8				12										
Well No.		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	

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Lot-specific information

Well No.		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21
HLA-A allele ⁴	ser ⁵																					
*26:01:01-26:01:20, 26:01:22-26:01:27, 26:08, 26:10-26:15, 26:17-26:18, 26:20, 26:23-26:28, 26:31- 26:33, 26:35-26:43:02, 26:45- 26:48, 26:50-26:53, 26:55- 26:63, 26:65-26:71N, 26:74- 26:77, 26:79-26:85	A26, A10, Null, -							7		9			12									
*26:01:21, 26:04, 26:34, 26:73	A26, -							7		9												
*26:02, 26:29, 26:49	A26, -							7		9			w									
*26:03:01-26:03:02, 26:06, 26:21	A26, -							7			10		12									21
*26:05, 26:30	A26							7					12									21
*26:07:01-26:07:02, 26:64	A26, -									9			12									
*26:09	A26							7		9		11										
*26:16	A26						6			9			12									
*26:19	-			4						9			12	13								
*26:22	A26							7		9			12	13							20	
*26:54	-							7		9		11	12							19		
*26:72	-			4						9			12									
*26:78	-							7			10											21
*29:01:01:01-29:06, 29:08N- 29:12, 29:15-29:27, 29:29- 29:38, 29:40-29:47, 29:50- 29:53	A29, Null, -													13								
*29:07, 29:49	A29, -					5								13								
*29:13, 29:39	-													13		16						
*29:14	-													13	15							
*29:28	-							7						13								
*29:48	-													13				17				
*30:01:01-30:04:02, 30:06- 30:07, 30:09-30:20, 30:22- 30:54, 30:56-30:74	A30, Null, -														14							
*30:08	A30			4											14							
*30:55	-											12		14								
*31:01:02-31:02, 31:05- 31:28, 31:30-31:34, 31:36- 31:40, 31:42-31:74, 33:53 ¹¹	A31, A31/A2 4, Null, -															15						
*31:03-31:04	A31											11		13	15							
*31:29	-					5									15							
*31:35	-													14	15	16						
*31:41	-														15						20	
Well No.		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21

101.708-24 – including *Taq* polymerase, IFU-01
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Lot No.: **70S**

Lot-specific information

Well No.		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21
HLA-A allele ⁴	ser ⁵																					
*32:01:01-32:01:13, 32:01:15-32:02, 32:07- 32:14, 32:16-32:37, 32:39- 32:41, 32:43-32:57	A32, Null, -								8								16					
*32:01:14, 32:03, 32:38, 74:07 ¹³	A32, A74, -																16					
*32:04	A32/A3			3					8													
*32:05	A32															15	16					
*32:06	A32								8								16				20	
*32:15	A32							7	8								16	17				
*32:42	-								8					13			16					
*33:01:01-33:01:07, 33:03:01-33:12, 33:14- 33:18:02, 33:20-33:21, 33:23, 33:25-33:37, 33:39- 33:47, 33:49-33:50, 33:52, 33:54-33:68	A33, -																	17				
*33:13, 33:48	-									9								17				
*33:19	-						6											17				
*33:22	-																	17			20	
*33:24	-																	17				21
*33:51	-							7										17				
*34:01:01-34:01:02, 34:05- 34:06, 34:11	A34, A10, -							7			10	11										
*34:02:01-34:03, 34:07, 34:10N	A34, Null, -			3				7			10	11										
*34:04	A34			3				7			10	11		13								
*34:08	A34			3				7			10	11	12									
*34:09	-			3				7				11										
*36:02	A36	1		3																		21
*43:01	A43									9		11	12									
*66:01, 66:04-66:05, 66:07- 66:08, 66:11, 66:13-66:14, 66:17-66:19	A66, A26, -							7			10		12									
*66:02-66:03, 66:16	A66, A10, -							7				11										
*66:06	A66							7			10		12									20
*66:09	-							7			10		12	13								20
*66:10	-							7			10		w									
*66:12, 66:15	-							7					12									
*68:01:01:01-68:04, 68:06- 68:12, 68:13:02-68:14, 68:16- 68:19, 68:21:01-68:24, 68:26- 68:28, 68:30-68:44, 68:46- 68:65, 68:67-68:70, 68:72- 68:83, 68:85-68:100	A68, A28, Null, -							7													19	
*68:05, 68:15, 68:20	A68							7													19	21
Well No.		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21



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Lot No.: **70S**

Lot-specific information

Well No.		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	
HLA-A allele ⁴	ser ⁵																						
*68:13:01, 68:66	A68, -				4			7												19			
*68:25	A68							7											18	19			
*68:29	A68							7										17		19	20		
*68:45	-						6	7												19			
*68:71	-							7					12							19			
*68:84	-							7		9										19			
*69:01	A69							7														20	
*74:01-74:03, 74:05-74:06, 74:08-74:12N, 74:14N-74:17	A74, Null, -																			18			
*74:04	A74																	17	18				
*74:13	-												12						18				
*80:01:01:01-80:01:01:02, 80:03	A80, -					5																	21
*80:02	-					5							10										
<i>B*07:81, B*08:52, B*18:67, B*38:41, B*53:05, B*53:16</i>	B53, -								8														
<i>C*03:174, C*08:69, C*16:56</i>	-				4																		
HLA-A allele ⁴	ser ⁵																						
Well No.		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	

¹The internal positive control primer pairs amplify segments of the human growth hormone gene. The two different control primer pairs give rise to either an internal positive control band of 1070 base pairs, for most wells, or a band of 800 base pairs, for some wells.

Well number 1 contains the primer pair giving rise to the shorter, 800 bp, internal positive control band in order to help in the correct orientation of the HLA-A low resolution SSP typing.

In addition, wells number 2, 4, 5, 7, 8, 9, 11, 13 and 18 to 21 contain the primer pair giving rise to the shorter, 800 bp, internal positive control band in order to allow kit identification.

²The nucleotide position, in the 1st, 2nd or 3rd exon or the 2nd intron, matching the specificity-determining 3'-end of the primer is given. Nucleotide numbering as on the www.ebi.ac.uk/imgt/hla web site. The sequence of the 3 terminal nucleotides of the primer is given.

³The nucleotide position, in the 2nd or 3rd exon, matching the specificity-determining 3'-end of the primer is given in the anti-sense direction. Nucleotide numbering as on the www.ebi.ac.uk/imgt/hla web site. The sequence of the 3 terminal nucleotides of the primer is given.

⁴The sequence of the A*0105N has been shown to be identical to A*01:04N.

The A*01:34N allele has been renamed A*01:01:38L

The A*020116 allele has been renamed to A*02:134.

The A*020120 has been shown to be identical to A*02:01:18.

The sequence of the A*02:01:82 allele has been shown to be identical to A*02:01:84.

The sequence of the A*0223 allele has been shown to be identical to A*02:22:01.

The sequence of the A*0298 allele has been shown to be identical to A*02:96.

The A*02:100 allele has never been assigned.

The A*1128 allele has been renamed to A*11:15:02.

The A*11:53 allele has been shown to be identical to the corrected A*11:02:01.

The sequence of the A*2401 allele has been shown to be in error.

The sequence of the A*2412 allele has been shown to be identical to A*24:08.

The A*2416 allele has been renamed to A*31:08.

The A*2465 allele has been renamed to A*24:13:02.

101.708-24 – including *Taq* polymerase, IFU-01
101.708-24u – without *Taq* polymerase, IFU-02

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Lot No.: 70S**Lot-specific information**

The A*24:211 allele has been renamed to A*24:135:02.

The A*26:44 allele has been renamed to A*26:43:02.

The sequence of the A*3005 allele has been shown to be identical to A*30:04.

The A*3021 allele has been renamed to A*30:11:02.

The sequence of the A*31011 allele has been shown to be identical to A*31:01:02.

The sequence of the A*3302 allele has been shown to be identical to A*33:03:01.

The sequence of the A*33:38 allele has been shown to be identical to A*33:44

⁵The serological reactivity of all HLA-A alleles is not known. The grouping of not serologically defined alleles is taken from Tissue Antigens 73, 95-170, 2009.

⁶The A*36 alleles will give rise to identical amplification patterns as a number of A*01 alleles. These alleles can be separated by the A*01 and A*36 high resolution SSP primer sets.

⁷The A*03:01:23, 03:08, 03:32, 03:36N, 03:57, 03:59, 03:72, 03:89, 03:107-03:108, 03:111, 03:142 and 03:152 and the A*24:92 alleles will give rise to identical amplification patterns. These alleles can be separated by the respective high resolution SSP primer sets.

⁸The A*03:88 and the A*11:130 alleles will give rise to identical amplification patterns. These alleles can be separated by the respective high resolution SSP primer sets.

⁹The A*23:01:01-23:13, 23:15-23:56 and A* 23:58 and the B*18:27 alleles will give rise to identical amplification patterns. These alleles can be separated by the respective high resolution SSP primer sets.

¹⁰The A*23:14:01-23:14:02 and the A*24:24 and 24:71 alleles will give rise to identical amplification patterns. These alleles can be separated by the respective high resolution SSP primer sets.

¹¹The A*31:01:02-31:02, 31:05-31:28, 31:30-31:34, 31:36-31:40 and 31:42-31:74, and the A*33:53 alleles will give rise to identical amplification patterns. These alleles can be separated by the respective high resolution SSP primer sets

¹²The primer pairs in vials 1, 2, 10 and 14 will in many samples give rise to two or three HLA-specific PCR fragments.

¹³The A*32:01:14, 32:03, 32:38 and the A*74:07 alleles will give rise to identical amplification patterns. These alleles can be separated by the respective high resolution SSP primer sets.

‘w’, may be weakly amplified.

101.708-24 – including *Taq* polymerase, IFU-01
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Lot-specific information

		INTERPRETATION TABLE																																								
		HLA-B low resolution SSP																																								
		Amplification patterns of the B*07:02 to B*83:01 alleles																																								
		Well																																								
		22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41																					
Length of spec. PCR product(s)		285	215	140	130	185	180	290	165	165	180	105	195	105	115	80	150	140	60	210	170																					
Length of int. pos. control ¹		800	1070	1070	800	800	800	1070	1070	1070	800	1070	1070	1070	1070	1070	800	1070	1070	800	800																					
5'-primer(s) ²		355	97	209	103	103	103	45	45	45	420	206	142	45	161	167	355	206	45	142	409																					
		5'-TCA ^{3'}	5'-TCg ^{3'}	5'-ggC ^{3'}	5'-CCg ^{3'}	5'-CCT ^{3'}	5'-CCg ^{3'}	5'-ggA ^{3'}	5'-ggA ^{3'}	5'-ggA ^{3'}	5'-TTA ^{3'}	5'-AgA ^{3'}	5'-TCT ^{3'}	5'-ggA ^{3'}	5'-Cgg ^{3'}	5'-gCT ^{3'}	5'-TCA ^{3'}	5'-gAC ^{3'}	5'-ggA ^{3'}	5'-TCT ^{3'}	5'-ggC ^{3'}																					
		363		363	103	103	418		357	435		420	419	540					368	368	420																					
		5'-AgC ^{3'}		5'-AgC ^{3'}	5'-CCg ^{3'}	5'-CCT ^{3'}	5'-Agg ^{3'}		5'-Tgg ^{3'}	5'-AAA ^{3'}		5'-TTA ^{3'}	5'-gTC ^{3'}	5'-gAC ^{3'}					5'-gTT ^{3'}	5'-gTC ^{3'}	5'-TTA ^{3'}																					
				363	361	363			412										557																							
				5'-AgC ^{3'}	5'-AgT ^{3'}	5'-AAT ^{3'}			5'-ATA ^{3'}										5'-ggA ^{3'}																							
3'-primer(s) ³		603	272	309	193	246	246	165	206	266	559	272	301	272	234	204	463	302	259	311	544																					
		5'-gTg ^{3'}	5'-Tgg ^{3'}	5'-gTg ^{3'}	5'-CgT ^{3'}	5'-TAT ^{3'}	5'-TAT ^{3'}	5'-Tgg ^{3'}	5'-CCT ^{3'}	5'-TCC ^{3'}	5'-CTC ^{3'}	5'-Tgg ^{3'}	5'-gTC ^{3'}	5'-gTC ^{3'}	5'-TgC ^{3'}	5'-TCT ^{3'}	5'-TCT ^{3'}	5'-gCT ^{3'}	5'-ggC ^{3'}	5'-gTT ^{3'}	5'-ggg ^{3'}																					
		605	272	312	193	246	572		538	559		572	301	309	272			312	259	311																						
		5'-gCT ^{3'}	5'-TgA ^{3'}	5'-gCC ^{3'}	5'-CgT ^{3'}	5'-TAT ^{3'}	5'-gCC ^{3'}		5'-gTC ^{3'}	5'-Cag ^{3'}		5'-gCg ^{3'}	5'-gTC ^{3'}	5'-ATC ^{3'}	5'-TgA ^{3'}			5'-AgT ^{3'}	5'-gTT ^{3'}	5'-ggg ^{3'}																						
				559	583	559			603	583			570	605	272				266	538																						
				5'-Cag ^{3'}	5'-gTg ^{3'}	5'-CTC ^{3'}			5'-gTg ^{3'}	5'-gTg ^{3'}			5'-CCg ^{3'}	5'-gCT ^{3'}	5'-Tgg ^{3'}				5'-TCC ^{3'}	5'-gTC ^{3'}																						
													572						272	292																						
																			572																							
																			572																							
																			572																							
Well No.		22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41																					



101.708-24 – including *Taq* polymerase, IFU-01
 101.708-24u – without *Taq* polymerase, IFU-02

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Lot-specific information

INTERPRETATION TABLE																																																																										
HLA-B low resolution SSP																																																																										
Amplification patterns of the B*07:02 to B*83:01 alleles																																																																										
Well																																																																										
42	43	44	45	46	47	48	49	50	51	52	53	54	55	56	57	58	59	60	61	62	63	64																																																				
110	395	160	180	105	325	115	80	270	130	410	90	175	90	430	145	300	160	210	120	430	145	300	160	210	180	180	90	95	150	115	360	350	Length of spec. PCR product(s)																																									
1070	1070	1070	1070	1070	800	1070	800	1070	1070	1070	800	1070	1070	1070	1070	1070	1070	800	1070	1070	1070	1070	1070	1070	1070	800	1070	1070	1070	1070	1070	1070	Length of int. pos. control ¹																																									
246	44	44	355	540	1 st I	355	209	41	209	48	357	49	206	1 st I	15	141	420	209	206	165	1 st I	1 st I	5'-primer(s) ²																																																			
5'-gAA ^{3'}	5'-ggC ^{3'}	5'-ggC ^{3'}	5'-ggC ^{3'}	5'-gAC ^{3'}	5'-CAG ^{3'}	5'-TCA ^{3'}	5'-ggC ^{3'}	5'-CTg ^{3'}	5'-ggC ^{3'}	5'-gCC ^{3'}	5'-Tgg ^{3'}	5'-CAG ^{3'}	5'-gAA ^{3'}	5'-CAG ^{3'}	5'-gCA ^{3'}	5'-ATT ^{3'}	5'-TTA ^{3'}	5'-ggC ^{3'}	5'-gAC ^{3'}	5'-ACC ^{3'}	5'-CAG ^{3'}	5'-CAG ^{3'}	5'-primer(s) ²																																																			
		357	363			418	209	368	363	206					418	420		209		463			5'-primer(s) ²																																																			
		5'-Tgg ^{3'}	5'-Agg ^{3'}			5'-Agg ^{3'}	5'-ggg ^{3'}	5'-gTT ^{3'}	5'-AgC ^{3'}	5'-gAA ^{3'}					5'-Agg ^{3'}	5'-TTA ^{3'}		5'-ggA ^{3'}		5'-TgA ^{3'}			5'-primer(s) ²																																																			
						499	355											362					5'-primer(s) ²																																																			
						5'-TCT ^{3'}	5'-TCA ^{3'}											5'-ggT ^{3'}					5'-primer(s) ²																																																			
317	272	302	499	603	282	538	299	282	259	309	435	309	311	259	175	311	559	256	259	272	317	311	3'-primer(s) ³																																																			
5'-ggA ^{3'}	5'-TgC ^{3'}	5'-ggC ^{3'}	5'-ggA ^{3'}	5'-gtg ^{3'}	5'-gCC ^{3'}	5'-gTC ^{3'}	5'-TCA ^{3'}	5'-gCC ^{3'}	5'-gTT ^{3'}	5'-ATC ^{3'}	5'-TCT ^{3'}	5'-ATC ^{3'}	5'-ggT ^{3'}	5'-CTC ^{3'}	5'-CCg ^{3'}	5'-ggT ^{3'}	5'-CAG ^{3'}	5'-CCC ^{3'}	5'-gTT ^{3'}	5'-TgC ^{3'}	5'-ggA ^{3'}	5'-ggT ^{3'}	3'-primer(s) ³																																																			
		302		605		572	583	418	499		527			259	538	559		259		538			3'-primer(s) ³																																																			
		5'-ggT ^{3'}		5'-gCT ^{3'}		5'-gCg ^{3'}	5'-gtg ^{3'}	5'-gTC ^{3'}	5'-ggA ^{3'}		5'-CCT ^{3'}			5'-CTC ^{3'}	5'-gTC ^{3'}	5'-CgT ^{3'}		5'-CTT ^{3'}		5'-CCA ^{3'}			3'-primer(s) ³																																																			
		477												262				263					3'-primer(s) ³																																																			
		5'-gCg ^{3'}												5'-TgC ^{3'}				5'-gTT ^{3'}				3'-primer(s) ³																																																				
																		559					3'-primer(s) ³																																																			
42	43	44	45	46	47	48	49	50	51	52	53	54	55	56	57	58	59	60	61	62	63	64	Well No.																																																			

101.708-24 – including *Taq* polymerase, IFU-01
 101.708-24u – without *Taq* polymerase, IFU-02

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Lot-specific information

Well No.		22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41
HLA-B allele⁴	ser.¹⁷																				
*07:02:01-07:02:31, 07:02:33-07:02:38, 07:05:01-07:06, 07:09-07:15, 07:17-07:18:02, 07:21-07:23, 07:26, 07:29-07:31, 07:34-07:35, 07:39, 07:41-07:46, 07:48-07:49N, 07:51-07:52, 07:55-07:59, 07:61-07:64, 07:66-07:68:03, 07:70-07:72, 07:74-07:76, 07:79-07:80, 07:82-07:83, 07:86-07:99, 07:101-07:121, 07:124-07:130, 07:132, 07:135N-07:138, 07:140-07:145, 07:147-07:148, 07:150-07:164, 07:166-07:173, 07:175-07:178, 07:181N-07:190	B7, B42, Null, blank, -	22																			
*07:02:32	-	22				26															
*07:03, 07:08, 07:16, 07:32, 07:37	B703, B7, blank	22																			
*07:04, 07:25, 07:146	B7, -	22												34							
*07:07, 07:19, 07:33:01, 07:40, 07:53, 07:77, 07:122, 07:139, 07:165	B7, 42, -																				
*07:20, 07:24, 07:131	B7, blank, -	22		24																	
*07:27	-	22										32								40	
*07:28	B7	22					27														
*07:36, 07:81, 07:149	B7, -	22																			
*07:38	-	22																			
*07:47	B7	22																			
*07:50	-	22										32									
*07:54, 07:123	B7, -	22																			
*07:60	-			24																	
*07:65	-	22																	38		
*07:69, 07:85	-	22																			
*07:73	-	22														36					
*07:78	-																				
*07:84	-											31									
*07:100	-			24																	
*07:133	-	22																			
*07:134	-	22																	38		
*07:174, 81:02 ⁵	B81, -	22																			
*07:179	-	22																			
*07:180	-	22																			
*08:01:01-08:01:20, 08:05, 08:08N, 08:10-08:11, 08:15, 08:18-08:19N, 08:22-08:24, 08:27, 08:29-08:31, 08:33-08:35, 08:39, 08:41-08:48, 08:51, 08:53:01-08:53:02, 08:56:01-08:59:02, 08:61, 08:63-08:64, 08:66-08:69, 08:71-08:73, 08:75, 08:80-08:83, 08:86N, 08:90-08:93, 08:95-08:100, 08:104-08:106	B8, Null, -	22	23						29												
*08:02-08:03, 08:52, 08:78	B8, -	22	23						29												
Well No.		22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41

101.708-24 – including *Taq* polymerase, IFU-01
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Lot-specific information

42	43	44	45	46	47	48	49	50	51	52	53	54	55	56	57	58	59	60	61	62	63	64	ser. ¹⁷	Well No. HLA-B allele ⁴
		44			47																	64	B7, B42, Null, blank, -	*07:02:01-07:02:31, 07:02:33-07:02:38, 07:05:01-07:06, 07:09-07:15, 07:17-07:18:02, 07:21-07:23, 07:26, 07:29-07:31, 07:34-07:35, 07:39, 07:41-07:46, 07:48-07:49N, 07:51-07:52, 07:55-07:59, 07:61-07:64, 07:66-07:68:03, 07:70-07:72, 07:74-07:76, 07:79-07:80, 07:82-07:83, 07:86-07:99, 07:101-07:121, 07:124-07:130, 07:132, 07:135N-07:138, 07:140-07:145, 07:147-07:148, 07:150-07:164, 07:166-07:173, 07:175-07:178, 07:181N-07:190
		44			47																	64	-	*07:02:32
		44																				64	B703, B7, blank	*07:03, 07:08, 07:16, 07:32, 07:37
		44		46	47																	64	B7, -	*07:04, 07:25, 07:146
		44			47																	64	B7, 42, -	*07:07, 07:19, 07:33:01, 07:40, 07:53, 07:77, 07:122, 07:139, 07:165
		44			47																	64	B7, blank, -	*07:20, 07:24, 07:131
																						63	-	*07:27
		44			47																	64	B7	*07:28
					47																	63	B7, -	*07:36, 07:81, 07:149
																						63	-	*07:38
		44			w																	64	B7	*07:47
		44																				64	-	*07:50
		44			47									56								64	B7, -	*07:54, 07:123
		44			47																	64	-	*07:60
					47			50								58			w			64	-	*07:65
	43	44																				64	-	*07:69, 07:85
		44			47																	64	-	*07:73
		44			47						53											64	-	*07:78
		44			47						53											64	-	*07:84
		44			47																62	64	-	*07:100
		44			47								55									64	-	*07:133
		44			47														w			64	-	*07:134
		44			47			51														64	B81, -	*07:174, 81:02 ⁵
					47																	64	-	*07:179
	43																					63	-	*07:180
		44			46																	64	B8, Null, -	*08:01:01-08:01:20, 08:05, 08:08N, 08:10-08:11, 08:15, 08:18-08:19N, 08:22-08:24, 08:27, 08:29-08:31, 08:33-08:35, 08:39, 08:41-08:48, 08:51, 08:53:01-08:53:02, 08:56:01-08:59:02, 08:61, 08:63-08:64, 08:66-08:69, 08:71-08:73, 08:75, 08:80-08:83, 08:86N, 08:90-08:93, 08:95-08:100, 08:104-08:106
				46																		63	B8, -	*08:02-08:03, 08:52, 08:78
42	43	44	45	46	47	48	49	50	51	52	53	54	55	56	57	58	59	60	61	62	63	64		Well No.

101.708-24 – including *Taq* polymerase, IFU-01
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Well No.		22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41		
HLA-B allele⁴	ser.¹⁷																						
*08:04	B8, blank	22	23						29			32											
*08:07, 08:14, 08:28, 08:37, 08:74, 08:77, 08:108	B8, -	22	23																				
*08:09, 08:12:01-08:12:03, 08:16, 08:84	B8, -		23						29														
*08:13, 08:20, 08:40, 08:70	B8, -	22	23						29														
*08:17, 08:54	-	22	23						29			32											
*08:21	B8	22	23	24					29														
*08:25	B8	22	23	24					29														
*08:26, 08:50, 08:62, 08:85, 08:94, 42:07 ⁶	B8, -	22							29														
*08:32	B8	22	23						29										38				
*08:36	-	22	23						29														
*08:38, 08:101	-	22	23						29														
*08:49	-	22	23						29											37		40	
*08:55	-	22	23						29													41	
*08:60, 08:76	-	22	23						29														
*08:65	-	22							29														
*08:79	-	22	23						29														
*08:87	-	22	23					27															
*08:88, 08:102	-	22	23						29														
*08:89, 08:107	-		23																				
*08:103	-		23						29														
*13:01:01-13:01:06, 13:17, 13:20, 13:22:01-13:23, 13:25, 13:28-13:29, 13:43, 13:50, 13:52, 13:57, 13:60-13:61, 13:63N	B13, Null, -			24	25							31										37	
*13:02:01-13:02:15, 13:08, 13:11, 13:15, 13:18-13:19, 13:27, 13:30, 13:32-13:34, 13:37-13:38, 13:40, 13:42, 13:44-13:45, 13:47, 13:49N, 13:54-13:56N, 13:64-13:66	B13, Null, -			24	25							31											
*13:03	B49, B15			24	25																		
*13:04, 13:10, 13:21, 13:35, 13:59, 44:135, 44:158 ⁷	B49, B15, B13, -			24	25																		
*13:06	B13			24	25																	37	
*13:07N	Null			24	25							31										37	
*13:09, 13:67	-			25								31											
*13:12:01-13:13, 13:26, 13:51	B13, -			24	25																	37	
*13:14	B13			24								31											
*13:16	B13			24	25							31											
*13:31	-			24	25							31											
*13:36	-			24	25							31										37	
*13:39	-			25								31										37	
*13:41	-			24	25							31											
*13:46	-			24	25				29														
*13:48	-			24	25																		
*13:53	-			24	25																		
*13:58	-											31											
*13:62	-			24	25					30													
*14:01:01-14:01:03, 14:07N, 14:12, 14:14, 14:19, 14:26, 14:32	B64, Null, -				25	26																	
Well No.		22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41		

101.708-24 – including *Taq* polymerase, IFU-01
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																				Well No.				
42	43	44	45	46	47	48	49	50	51	52	53	54	55	56	57	58	59	60	61	62	63	64	ser. ¹⁷	HLA-B allele ⁴
		44		46																		64	B8, blank	*08:04
		44		46																		64	B8, -	*08:07, 08:14, 08:28, 08:37, 08:74, 08:77, 08:108
		44		46																		64	B8, -	*08:09, 08:12:01-08:12:03, 08:16, 08:84
		44																				64	B8, -	*08:13, 08:20, 08:40, 08:70
		44		46										56								64	-	*08:17, 08:54
		44		46																		64	B8	*08:21
		44																				64	B8	*08:25
		44		46																		64	B8, -	*08:26, 08:50, 08:62, 08:85, 08:94, 42:07 ⁶
		44		46															61			64	B8	*08:32
				46																		64	-	*08:36
		44		46										56								64	-	*08:38, 08:101
		44		46		48																64	-	*08:49
		44																				64	-	*08:55
		44		46		48																64	-	*08:60, 08:76
43	44	44		46																		64	-	*08:65
		44																				64	-	*08:79
		44		46		48									57							64	-	*08:87
		44		46																		64	-	*08:88, 08:102
		44		46																		64	-	*08:89, 08:107
		44																				64	-	*08:103
														56								63	B13, Null, -	*13:01:01-13:01:06, 13:17, 13:20, 13:22:01-13:23, 13:25, 13:28-13:29, 13:43, 13:50, 13:52, 13:57, 13:60-13:61, 13:63N
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HLA-B allele⁴	ser.¹⁷																						
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 101.708-24u – without *Taq* polymerase, IFU-02

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HLA-B allele⁴	ser.¹⁷																					
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HLA-B allele⁴	ser.¹⁷																				
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																				Well No.				
42	43	44	45	46	47	48	49	50	51	52	53	54	55	56	57	58	59	60	61	62	63	64	ser. ¹⁷	HLA-B allele ⁴
														56						62	64	B62	*15:66	
														56						62	64	-	*15:68	
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*27:18	-					26						32				36					
*27:19	B27															36	37				
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*27:24	B27															36					
*27:25	B27															36					
*27:29	B27					26						32				36					
*27:30	B27															36	37				
*27:33	-															36					
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*27:62	-															36					
*27:75	-					26															
*27:77	-					26										36					
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101.708-24 – including *Taq* polymerase, IFU-01
 101.708-24u – without *Taq* polymerase, IFU-02

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																						ser. ¹⁷	HLA-B allele ⁴
												54					61	63	-	*18:67			
				47	w					56					63	B27	*27:01						
				47	50					54	56					63	B27, Null, -	*27:02:01-27:02:02, 27:53, 27:57, 27:65N, 27:83, 27:95, 27:102					
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				47	50					56					63	B27, -	*27:05:16, 27:05:20, 27:07:01- 27:07:03, 27:11, 27:15, 27:21, 27:28, 27:32, 27:34, 27:38, 27:43, 27:47, 27:63, 27:70- 27:71, 27:76						
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44				47	50					56					63	B27, -	*27:14, 27:81						
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				47	50					56					62 63	B27	*27:25						
												56					63	B27	*27:29				
				47	50					54 56					63	B27	*27:30						
				47	50					56					64	-	*27:33						
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				47	50					54 56					63	-	*27:62						
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												54 56					63	-	*27:77				
42	43	44	45	46	47	48	49	50	51	52	53	54	55	56	57	58	59	60	61	62	63	64	Well No.

101.708-24 – including *Taq* polymerase, IFU-01
 101.708-24u – without *Taq* polymerase, IFU-02

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Well No.		22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	
HLA-B allele⁴	ser.¹⁷																					
*35:01:01:01-35:01:09, 35:01:11-35:03:02, 35:03:04- 35:04:01, 35:04:03, 35:06- 35:08:04, 35:08:06, 35:11:01- 35:12:03, 35:15, 35:20:01- 35:20:02, 35:23, 35:29:01- 35:29:02, 35:33-35:34, 35:36, 35:39-35:42:01, 35:48, 35:50, 35:52, 35:54-35:55, 35:57, 35:59, 35:61:01-35:61:02, 35:65Q, 35:70, 35:74, 35:77- 35:78, 35:82-35:85, 35:90- 35:95, 35:98, 35:100- 35:101:02, 35:103-35:108:02, 35:110-35:112, 35:116, 35:120- 35:124, 35:126, 35:128- 35:134N, 35:136-35:150, 35:152-35:153, 35:155-35:156, 35:158-35:162, 35:165N- 35:168, 35:170-35:173N, 35:175-35:184, 35:187, 35:189, 35:192-35:197, 35:200- 35:202, 35:204, 35:206, 35:208-35:209, 35:211-35:212, 35:214-35:216N, 35:219- 35:221, 35:223-35:225, 35:227- 35:228	B35, Null, -																37	38				
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*35:03:03, 35:27, 35:56, 35:203	B35, -																37					
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*35:08:05	-																37	38				
*35:10, 35:13, 35:28, 35:69, 35:80, 35:226	B35, -																37	38				
*35:14:01-35:14:02, 35:62, 35:163, 35:213	B35, -																37	38				
*35:16	B35			24													37	38				
*35:17, 35:30, 35:113, 35:125, 35:164	B35, -			24													37	38				
*35:19	B35, blank																37					
*35:21, 35:24:01-35:24:02, 35:81, 35:96, 35:109, 35:157, 35:188, 35:190	B35, B78, -																37	38				
*35:25, 35:49, 35:198, 35:210	B35, -																37					
*35:26	B35						27										37					
*35:35	B35																37	38			41	
*35:38, 35:115, 35:169	B35, -																37	38				
*35:42:02	-																37	38				
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*35:60	B35																		38			
*35:63	-				25												37					
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101.708-24 – including *Taq* polymerase, IFU-01
 101.708-24u – without *Taq* polymerase, IFU-02

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42	43	44	45	46	47	48	49	50	51	52	53	54	55	56	57	58	59	60	61	62	63	64	ser. ¹⁷	Well No. HLA-B allele ⁴
																			61		64	B35, Null, -	*35:01:01:01-35:01:09, 35:01:11-35:03:02, 35:03:04- 35:04:01, 35:04:03, 35:06- 35:08:04, 35:08:06, 35:11:01- 35:12:03, 35:15, 35:20:01- 35:20:02, 35:23, 35:29:01- 35:29:02, 35:33-35:34, 35:36, 35:39-35:42:01, 35:48, 35:50, 35:52, 35:54-35:55, 35:57, 35:59, 35:61:01-35:61:02, 35:65Q, 35:70, 35:74, 35:77- 35:78, 35:82-35:85, 35:90- 35:95, 35:98, 35:100- 35:101:02, 35:103-35:108:02, 35:110-35:112, 35:116, 35:120- 35:124, 35:126, 35:128- 35:134N, 35:136-35:150, 35:152-35:153, 35:155-35:156, 35:158-35:162, 35:165N- 35:168, 35:170-35:173N, 35:175-35:184, 35:187, 35:189, 35:192-35:197, 35:200- 35:202, 35:204, 35:206, 35:208-35:209, 35:211-35:212, 35:214-35:216N, 35:219- 35:221, 35:223-35:225, 35:227- 35:228	
																			61		64	B35	*35:01:10, 35:04:02	
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																58					64	-	*35:08:05	
														56							64	B35, -	*35:10, 35:13, 35:28, 35:69, 35:80, 35:226	
																			61	62	64	B35, -	*35:14:01-35:14:02, 35:62, 35:163, 35:213	
														56							64	B35	*35:16	
																			61		64	B35, -	*35:17, 35:30, 35:113, 35:125, 35:164	
														55							64	B35, blank	*35:19	
							49													61		64	B35, B78, -	*35:21, 35:24:01-35:24:02, 35:81, 35:96, 35:109, 35:157, 35:188, 35:190
																					64	B35, -	*35:25, 35:49, 35:198, 35:210	
																					64	B35	*35:26	
																			61		64	B35	*35:35	
							48												61		64	B35, -	*35:38, 35:115, 35:169	
																58				61		64	-	*35:42:02
																			61	62	64	B35, -	*35:43:01-35:44, 35:67, 35:79, 35:86, 35:102, 35:117, 35:135	
							48													61		64	B35	*35:45, 35:71
								51													64	B35	*35:46	
														55							64	B35, -	*35:47, 35:154, 35:217	
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														55	56						64	-	*35:63	
42	43	44	45	46	47	48	49	50	51	52	53	54	55	56	57	58	59	60	61	62	63	64		Well No.

101.708-24 – including *Taq* polymerase, IFU-01
 101.708-24u – without *Taq* polymerase, IFU-02

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Well No.		22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	
HLA-B allele⁴	ser.¹⁷																					
*35:66	B35	22																38				
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*35:87	-	22							29									38				
*35:185	-																	38				
*35:186	-																37	38				
*35:191	-																37	38				
*35:207	-				25												37					
*35:218	-		23														37	38				
*35:222	-																37	38				
*35:229	-																37	38				
*37:01:01-37:01:07, 37:01:09, 37:03N, 37:06, 37:13, 37:15-37:21, 37:23-37:27, 37:30N-37:33N, 37:35-37:36	B37, Null, -												33				37				40	
*37:01:08, 37:09	B37, -												33								40	
*37:02	B37, B27					26							33								40	
*37:04:01-37:04:02	B37, -												33				37				40	
*37:05	Blank												33				37				40	
*37:07	-	22											33								40	
*37:08	B37												33				37				40	
*37:10, 37:22, 37:29	B37, -																37				40	
*37:11, 37:37	-																37	38			40	
*37:12	B37								29				33								40	
*37:14	-																37				40	
*37:28	-												32	33			37				40	
*37:34	-																37				40	
*38:01:01-38:02:02, 38:02:04-38:02:05, 38:08-38:09, 38:11-38:16, 38:18-38:19, 38:21, 38:23-38:24, 38:27-38:29, 38:31-38:32, 38:34N, 38:38-38:43	B38, Null, -					26																41
*38:02:03	-																					41
*38:03	B38					26							32									41
*38:04, 38:25	B38, -																					41
*38:05, 38:33	B38, -							27														41
*38:06	B38																					41
*38:07	B38					26																41
*38:10, 38:36-38:37	B38, -					26																41
*38:17	-					26							33								40	41
*38:20	-					26											37					41
*38:22	-					26										36						41
*38:26	-					26																41
*38:30	-					26			29													41
*38:35	-					26																41
*39:01:01-39:01:01:03, 39:01:03-39:01:08, 39:01:10-39:01:14, 39:01:16, 39:03, 39:05:01-39:07, 39:09, 39:11, 39:14-39:15, 39:24:01, 39:26-39:29, 39:31, 39:35, 39:37-39:38Q, 39:40:01N-39:41, 39:44, 39:46, 39:48, 39:51-39:57, 39:59-39:62, 39:64-39:68, 39:70-39:71, 39:73, 39:75, 39:77, 39:79-39:81	B3901, B39, Low B39, B16, Null, -					26																41
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																				Well No.				
42	43	44	45	46	47	48	49	50	51	52	53	54	55	56	57	58	59	60	61	62	63	64	ser. ¹⁷	HLA-B allele ⁴
															61							64	B35	*35:66
					47			50							w							64	B35, 22	*35:76
				46											61							64	-	*35:87
																58			61	62		64	-	*35:185
					47			50														64	-	*35:186
																						64	-	*35:191
														56								64	-	*35:207
																			61			64	-	*35:218
																			61			64	-	*35:222
					47			50											61			64	-	*35:229
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														56							63		B37, -	*37:01:08, 37:09
														56							63		B37, B27	*37:02
						48	49							56							63		B37, -	*37:04:01-37:04:02
						48								56							64		Blank	*37:05
														56							63		-	*37:07
						48													61		63		B37	*37:08
						48								56							63		B37, -	*37:10, 37:22, 37:29
						48								56							64		-	*37:11, 37:37
						48								56							63		B37	*37:12
						48								56							63	w	-	*37:14
						48								56							63		-	*37:28
						48					54	56									63		-	*37:34
42	43																				63		B38, Null, -	*38:01:01-38:02:02, 38:02:04- 38:02:05, 38:08-38:09, 38:11- 38:16, 38:18-38:19, 38:21, 38:23-38:24, 38:27-38:29, 38:31-38:32, 38:34N, 38:38- 38:43
	43																				63		-	*38:02:03
42														56							63		B38	*38:03
	43													56							63		B38, -	*38:04, 38:25
42	43																				63		B38, -	*38:05, 38:33
																			61		63		B38	*38:06
																			61		63		B38	*38:07
42	43																				63		B38, -	*38:10, 38:36-38:37
42	43																				63		-	*38:17
42	43																				63		-	*38:20
42	43																				63		-	*38:22
42						47															63		-	*38:26
42	43																				63		-	*38:30
	43																				63		-	*38:35
	43	44																			64		B3901, B39, Low B39, B16, Null, -	*39:01:01:01-39:01:01:03, 39:01:03-39:01:08, 39:01:10- 39:01:14, 39:01:16, 39:03, 39:05:01-39:07, 39:09, 39:11, 39:14-39:15, 39:24:01, 39:26- 39:29, 39:31, 39:35, 39:37- 39:38Q, 39:40:01N-39:41, 39:44, 39:46, 39:48, 39:51- 39:57, 39:59-39:62, 39:64- 39:68, 39:70-39:71, 39:73, 39:75, 39:77, 39:79-39:81
	43	44																			64		B3901, B39, -	*39:01:09, 39:12, 39:45, 39:72, 39:76, 39:78



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Well No.		22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	
HLA-B allele⁴	ser.¹⁷																					
*39:01:15	-					26																41
*39:02:01, 39:08	B3902, B39					26						32										41
*39:02:02, 39:13:01-39:13:02, 39:23, 39:49	B3902, B39, -											32										41
*39:04	B39						27															41
*39:10:01-39:10:02, 39:16, 39:20	B39, -																					41
*39:17, 39:63	B39, -																					41
*39:18	B39					26																41
*39:19:01	B39																	38				41
*39:19:02	B39					26												38				41
*39:22	B39					26																41
*39:24:02	-					26																41
*39:36	-					26																41
*39:39:01	B39					26						32										41
*39:39:02	-											32										41
*39:42	B39					26											37					41
*39:58	-					26																41
*39:69	-					26																41
*40:01:01-40:01:06, 40:01:08-40:01:10, 40:01:12-40:01:17, 40:01:19-40:01:29, 40:07, 40:23, 40:51, 40:60, 40:66, 40:73, 40:79, 40:124:01, 40:139-40:140, 40:146-40:147, 40:150, 40:152-40:153, 40:155N, 40:172, 40:186	B60, B40, Null, -				25																	
*40:01:07, 40:01:18, 40:53, 40:72:01-40:72:02, 40:77	B60, B61, -				25																	
*40:01:11	-				25																	
*40:02:01-40:04, 40:06:05, 40:20, 40:39-40:40, 40:89, 40:94, 40:97, 40:122, 40:142N-40:144N, 40:214, 40:229	B61, B41, Null, -																					
*40:05	B4005, B50			24																		
*40:06:01:01-40:06:04, 40:06:06-40:06:07, 40:44, 40:70, 40:75, 40:83, 40:86, 40:103, 40:127, 40:131, 40:159, 40:162, 40:165, 40:167, 40:177, 40:190, 40:230	B61, -																					
*40:08	B61, blank																					
*40:09, 40:11:01-40:11:02, 40:18, 40:24, 40:27:01-40:27:02, 40:29, 40:35, 40:37, 40:50, 40:56-40:57, 40:64, 40:78, 40:82, 40:85, 40:90-40:91, 40:99, 40:104-40:105, 40:107, 40:111, 40:115, 40:119-40:120, 40:133Q, 40:145, 40:169, 40:173, 40:176, 40:180-40:181, 40:189, 40:200, 40:202-40:203, 40:205-40:206, 40:211, 40:220, 40:224-40:226	B61, -																					
Well No.		22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	



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Lot-specific information

42	43	44	45	46	47	48	49	50	51	52	53	54	55	56	57	58	59	60	61	62	63	64	ser. ¹⁷	Well No.	
																								HLA-B allele ⁴	
	43	44																					-	*39:01:15	
		44											56									64	B3902, B39	*39:02:01, 39:08	
		44											56									64	B3902, B39, -	*39:02:02, 39:13:01-39:13:02, 39:23, 39:49	
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		44																					64	B39, -	*39:10:01-39:10:02, 39:16, 39:20
		44														58							64	B39, -	*39:17, 39:63
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	43	44																					64	B39	*39:19:01
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	43	44												56									64	B39	*39:22
	43																						64	-	*39:24:02
	43	44																				62	64	-	*39:36
		44																					64	B39	*39:39:01
		44																					64	-	*39:39:02
	43	44																					64	B39	*39:42
		44																					64	-	*39:58
	43	44											55										64	-	*39:69
		44	45										55	56									64	B60, B40, Null, -	*40:01:01-40:01:06, 40:01:08-40:01:10, 40:01:12-40:01:17, 40:01:19-40:01:29, 40:07, 40:23, 40:51, 40:60, 40:66, 40:73, 40:79, 40:124:01, 40:139-40:140, 40:146-40:147, 40:150, 40:152-40:153, 40:155N, 40:172, 40:186
		44											55	56									64	B60, B61, -	*40:01:07, 40:01:18, 40:53, 40:72:01-40:72:02, 40:77
		44	45										55	56	58								64	-	*40:01:11
													55	56									64	B61, B41, Null, -	*40:02:01-40:04, 40:06:05, 40:20, 40:39-40:40, 40:89, 40:94, 40:97, 40:122, 40:142N, 40:144N, 40:214, 40:229
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		44											55	56									64	B61, -	*40:06:01:01-40:06:04, 40:06:06-40:06:07, 40:44, 40:70, 40:75, 40:83, 40:86, 40:103, 40:127, 40:131, 40:159, 40:162, 40:165, 40:167, 40:177, 40:190, 40:230
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		?											55	56									64	B61, -	*40:09, 40:11:01-40:11:02, 40:18, 40:24, 40:27:01-40:27:02, 40:29, 40:35, 40:37, 40:50, 40:56-40:57, 40:64, 40:78, 40:82, 40:85, 40:90-40:91, 40:99, 40:104-40:105, 40:107, 40:111, 40:115, 40:119-40:120, 40:133Q, 40:145, 40:169, 40:173, 40:176, 40:180-40:181, 40:189, 40:200, 40:202-40:203, 40:205-40:206, 40:211, 40:220, 40:224-40:226



101.708-24 – including *Taq* polymerase, IFU-01
 101.708-24u – without *Taq* polymerase, IFU-02

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Lot No.: **70S**

Lot-specific information

Well No.		22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	
HLA-B allele⁴	ser.¹⁷																					
*40:10:01-40:10:02, 40:135	B60, -				25																	
*40:12	B60, B48							29			32								39			
*40:13, 40:19	B61, -																					
*40:14:01-40:14:03, 40:121, 40:129, 40:158, 40:164, 40:192, 40:197, 40:219, 40:233, 40:237	B60, -				25																	
*40:15, 40:32	B40, -	22			25																	
*40:16	B61	22			25																	
*40:21	B40, B15																					
*40:22N, 40:33, 40:36, 40:38, 40:42-40:43, 40:49, 40:52, 40:54-40:55, 40:61-40:63, 40:65, 40:67, 40:81, 40:84, 40:87:01-40:88, 40:92, 40:100-40:102, 40:108, 40:112-40:114, 40:116, 40:118N, 40:123, 40:124:02-40:126, 40:128, 40:130, 40:134, 40:141, 40:151, 40:154, 40:156, 40:163, 40:168, 40:171, 40:175, 40:179, 40:182-40:183, 40:187, 40:191, 40:193-40:196, 40:198-40:199, 40:204, 40:207, 40:212-40:213, 40:215-40:218, 40:221-40:223, 40:227-40:228, 40:234-40:236, 40:238	Null, B60, -				25																	
*40:25, 40:69, 40:106	B40, B60, -				25																	
*40:26	B21									30												
*40:28	-									30							37					
*40:30, 40:34, 40:160:01-40:160:02	B60, -	22			25																	
*40:31, 40:45, 40:80	B60, -	22			25																	
*40:46	B60										32					36						
*40:47, 40:188	B40, -				25																	
*40:48	B60				25						31											
*40:58	B40				25																	
*40:59	B40	22			25																	
*40:68, 40:232	-																					
*40:71	B61			24																		
*40:74, 40:149, 40:170, 40:210	B60, -																					
*40:76	B60				25																	
*40:93	-										32					36						
*40:95	-																					
*40:96	-																					
*40:98	-	22																				
*40:109	-																					
*40:110	-				25																	
*40:117	-				25																	
*40:132, 40:178	-				25																	
*40:136	-				25				29					34								
*40:137	-	22																				
*40:138	-																					
*40:148, 40:161	-																					
Well No.		22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	



101.708-24 – including *Taq* polymerase, IFU-01
 101.708-24u – without *Taq* polymerase, IFU-02

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Lot No.: 70S

Lot-specific information

42	43	44	45	46	47	48	49	50	51	52	53	54	55	56	57	58	59	60	61	62	63	64	ser. ¹⁷	Well No.	
																								HLA-B allele ⁴	
			45										55	56								64	B60, -	*40:10:01-40:10:02, 40:135	
			45											56								64	B60, B48	*40:12	
										52		54	56									63	B61, -	*40:13, 40:19	
			?										55	56								64	B60, -	*40:14:01-40:14:03, 40:121, 40:129, 40:158, 40:164, 40:192, 40:197, 40:219, 40:233, 40:237	
			?										55	56								64	B40, -	*40:15, 40:32	
			44										55	56								64	B61	*40:16	
			?	45										56								64	B40, B15	*40:21	
			?	45									55	56								64	Null, B60, -	*40:22N, 40:33, 40:36, 40:38, 40:42-40:43, 40:49, 40:52, 40:54-40:55, 40:61-40:63, 40:65, 40:67, 40:81, 40:84, 40:87:01-40:88, 40:92, 40:100, 40:102, 40:108, 40:112-40:114, 40:116, 40:118N, 40:123, 40:124:02-40:126, 40:128, 40:130, 40:134, 40:141, 40:151, 40:154, 40:156, 40:163, 40:168, 40:171, 40:175, 40:179, 40:182-40:183, 40:187, 40:191, 40:193-40:196, 40:198, 40:199, 40:204, 40:207, 40:212-40:213, 40:215-40:218, 40:221-40:223, 40:227-40:228, 40:234-40:236, 40:238	
			?	45									55									64	B40, B60, -	*40:25, 40:69, 40:106	
			?										55	56								64	B21	*40:26	
			?				49						55	56								64	-	*40:28	
			?	45									55	56								64	B60, -	*40:30, 40:34, 40:160:01-40:160:02	
			?						51				55	56								64	B60, -	*40:31, 40:45, 40:80	
			?	45										56								64	B60	*40:46	
				45										56								63	B40, -	*40:47, 40:188	
			?	45									55	56								64	B60	*40:48	
			?										55	56		58						64	B40	*40:58	
			44	45									55	56								64	B40	*40:59	
			?										55									64	-	*40:68, 40:232	
			?										55	56		59						64	B61	*40:71	
			?	45									55	56								64	B60, -	*40:74, 40:149, 40:170, 40:210	
				45										56										B60	*40:76
			44											56								64	-	*40:93	
			?								53		55	56								64	-	*40:95	
			44											56								63	-	*40:96	
			?										55	56								64	-	*40:98	
			44							52		54	56									63	-	*40:109	
			44											56								63	-	*40:110	
				45						52		54	56									63	-	*40:117	
			?	45			48						55	56								64	-	*40:132, 40:178	
			?		46								55	56								64	-	*40:136	
			?	45										56								64	-	*40:137	
			44	45									55	56								64	-	*40:138	
			44								53		55	56								64	-	*40:148, 40:161	



101.708-24 – including *Taq* polymerase, IFU-01
 101.708-24u – without *Taq* polymerase, IFU-02

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Lot No.: 70S

Lot-specific information

Well No.		22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	
HLA-B allele⁴	ser.¹⁷																					
*40:157, 40:201	-																					
*40:166	-				25																	
*40:174	-			24																		
*40:184	-																					41
*40:185	-																	38				
*40:208	-				25																	
*40:209	-																	38				
*40:231	-				25				29					34								
*41:01, 41:03:01-41:03:02, 41:06-41:07, 41:12, 41:14- 41:17, 41:20-41:22, 41:25	B41, -				25				29													
*41:02:01-41:02:05, 41:11, 41:13, 41:19, 41:23-41:24, 41:27	B41, -	22			25				29													
*41:04, 41:10, 41:18	B41, -	22			25																	
*41:05	B41				25				29													
*41:08	B41				25				29					34								
*41:09, 45:02-45:03 ¹⁰	B45, -				25				29													
*41:26	-				25				29													
*42:01:01-42:02, 42:06, 42:10, 42:12, 42:15, 42:17-42:18	B42, -	22							29													
*42:04, 42:14	B42, -								29													
*42:05:01-42:05:02	B42	22							29					34								
*42:08	B42								29													
*42:09, 42:16, 42:20	B42, -	22																				
*42:11	-	22							29			32										
*42:13	-	22							29													
*42:19	-	22							29													
*44:02:01:01-44:02:21, 44:02:23-44:02:29, 44:11, 44:19N, 44:21-44:24, 44:27:01- 44:27:02, 44:33-44:34:02, 44:48, 44:52N, 44:55, 44:59:01-44:59:02, 44:63, 44:66-44:68, 44:71-44:74, 44:80, 44:84, 44:86-44:87, 44:89, 44:93, 44:101-44:102, 44:104, 44:112-44:113, 44:116, 44:118-44:119, 44:121, 44:126:01-44:126:02, 44:137, 44:142, 44:148- 44:149N, 44:151-44:152, 44:162, 44:168, 44:170, 44:172-44:173	B44, Null, -				25												37					
*44:02:22, 44:12, 44:171N	B44, Null, -				25												37					
Well No.		22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	

101.708-24 – including *Taq* polymerase, IFU-01
 101.708-24u – without *Taq* polymerase, IFU-02

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Lot No.: 70S

Lot-specific information

																				Well No.				
42	43	44	45	46	47	48	49	50	51	52	53	54	55	56	57	58	59	60	61	62	63	64	ser. ¹⁷	HLA-B allele ⁴
														56							63		-	*40:157, 40:201
		?	45	47									55								64		-	*40:166
		?											55	56							64		-	*40:174
		?											55	56							64		-	*40:184
		?	45											56							64		-	*40:185
		?	45											56							64		-	*40:208
		?												56							64		-	*40:209
		?	45	46		48							55	56							64		-	*40:231
		44		46									55	56							64		B41, -	*41:01, 41:03:01-41:03:02, 41:06-41:07, 41:12, 41:14- 41:17, 41:20-41:22, 41:25
		44		46									55	56							64		B41, -	*41:02:01-41:02:05, 41:11, 41:13, 41:19, 41:23-41:24, 41:27
		44		46									55	56							64		B41, -	*41:04, 41:10, 41:18
		44		46									?	56							64		B41	*41:05
		44		46									55	56							64		B41	*41:08
		44											55	56							64		B45, -	*41:09, 45:02-45:03 ¹⁰
		44		46										56									-	*41:26
		44		46	47																64		B42, -	*42:01:01-42:02, 42:06, 42:10, 42:12, 42:15, 42:17-42:18
		44		46	47																64		B42, -	*42:04, 42:14
		44		46	47																64		B42	*42:05:01-42:05:02
		44			47																64		B42	*42:08
		44		46	47																64		B42, -	*42:09, 42:16, 42:20
		44		46										56							64		-	*42:11
		44		46	47	48															64		-	*42:13
		44			47																64		-	*42:19
						48								56	57						63		B44, Null, -	*44:02:01:01-44:02:21, 44:02:23-44:02:29, 44:11, 44:19N, 44:21-44:24, 44:27:01- 44:27:02, 44:33-44:34:02, 44:48, 44:52N, 44:55, 44:59:01-44:59:02, 44:63, 44:66-44:68, 44:71-44:74, 44:80, 44:84, 44:86-44:87, 44:89, 44:93, 44:101-44:102, 44:104, 44:112-44:113, 44:116, 44:118-44:119, 44:121, 44:126:01-44:126:02, 44:137, 44:142, 44:148- 44:149N, 44:151-44:152, 44:162, 44:168, 44:170, 44:172-44:173
						48									57						63		B44, Null, -	*44:02:22, 44:12, 44:171N
42	43	44	45	46	47	48	49	50	51	52	53	54	55	56	57	58	59	60	61	62	63	64	Well No.	

101.708-24 – including *Taq* polymerase, IFU-01
 101.708-24u – without *Taq* polymerase, IFU-02

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Lot No.: 70S

Lot-specific information

Well No.		22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	
HLA-B allele ⁴	ser. ¹⁷																					
*44:03:01-44:03:06, 44:03:08-44:03:15, 44:03:18, 44:04-44:05:04, 44:13, 44:26, 44:28:01-44:30, 44:32, 44:35-44:36, 44:38-44:39, 44:42, 44:45, 44:51, 44:56N, 44:58N, 44:61N, 44:69-44:70, 44:76-44:79, 44:82, 44:85, 44:88, 44:92, 44:94, 44:96, 44:98, 44:105, 44:107-44:109, 44:114-44:115, 44:117, 44:120, 44:122-44:125, 44:128, 44:133, 44:136, 44:139, 44:141, 44:143, 44:147, 44:153-44:155, 44:157, 44:159-44:161, 44:163-44:165, 44:167, 44:174-44:175	B44, Null, -				25												37					
*44:03:07, 44:03:16, 44:03:19, 44:07, 44:81, 44:103, 44:111, 44:134	B44, -																37					
*44:03:17	-				25												37					
*44:06	B44																37					
*44:08	B44			w													37					
*44:09	B45				25												37					
*44:10	B44				25							32					37					
*44:14	B44				25				29								37					
*44:15	B12				25				29			32										
*44:16, 44:91, 44:132	B47, B44, -				25		27										37					
*44:17, 44:43:01-44:43:02, 44:144	B44, -				25								33				37					
*44:18	B44				25				29			32										
*44:20, 44:100	B44, -				25				29													
*44:25, 44:50	B44				25												37					
*44:31	B44				25																	
*44:37:01-44:37:02, 44:64:01-44:64:02	B44, -				25		27										37					
*44:40, 44:130	B44, -											32				36	37					
*44:41:01-44:41:02, 44:53, 44:99, 44:138Q	B44, -				25																	
*44:44	B44											32				36	37					
*44:46, 44:75, 44:129	B12, -				25												37					
*44:47, 44:65	B44, -				25																	
*44:49	B44			23	25												37					
*44:54	B44				24	25																
*44:57	-				w												37					
*44:60, 44:110	-				24	25											37					
*44:62	-				25				29	30							37					
*44:83, 44:145	-																37					
*44:90	-				25												37					
*44:95	-				25												37					
*44:97	-				25												37					
*44:106	-				24	25																
*44:127	-				25												37					
*44:131	-																37					
*44:140	-				25							32					37					
*44:146	-				25												37					
*44:150	-	22			25		27										37					
*44:156	-		23									32					37					
Well No.		22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	



101.708-24 – including *Taq* polymerase, IFU-01
 101.708-24u – without *Taq* polymerase, IFU-02

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Lot No.: **70S**

Lot-specific information

42	43	44	45	46	47	48	49	50	51	52	53	54	55	56	57	58	59	60	61	62	63	64	ser. ¹⁷	Well No. HLA-B allele ⁴
						48								56							63		B44, Null, -	*44:03:01-44:03:06, 44:03:08-44:03:15, 44:03:18, 44:04-44:05:04, 44:13, 44:26, 44:28:01-44:30, 44:32, 44:35-44:36, 44:38-44:39, 44:42, 44:45, 44:51, 44:56N, 44:58N, 44:61N, 44:69-44:70, 44:76-44:79, 44:82, 44:85, 44:88, 44:92, 44:94, 44:96, 44:98, 44:105, 44:107-44:109, 44:114, 44:115, 44:117, 44:120, 44:122-44:125, 44:128, 44:133, 44:136, 44:139, 44:141, 44:143, 44:147, 44:153-44:155, 44:157, 44:159, 44:161, 44:163-44:165, 44:167, 44:174-44:175
						48								56							63		B44, -	*44:03:07, 44:03:16, 44:03:19, 44:07, 44:81, 44:103, 44:111, 44:134
														56							63		-	*44:03:17
						48						54		56	57				61		63		B44	*44:06
						48								56	57						63		B44	*44:08
						48							55	56	57							64	B45	*44:09
						48								56			59				63		B44	*44:10
						48								56							63		B44	*44:14
														56			59				63		B12	*44:15
						48								56	57						63		B47, B44, -	*44:16, 44:91, 44:132
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						48								56	57						63		B44, -	*44:20, 44:100
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						48								56							63		B44, -	*44:40, 44:130
						48								56	57						63		B44, -	*44:41:01-44:41:02, 44:53, 44:99, 44:138Q
						48								56	57						63		B44	*44:44
						48							55	56								64	B12, -	*44:46, 44:75, 44:129
						48								56							63		B44, -	*44:47, 44:65
						48								56	57						63		B44	*44:49
						48								56							63		B44	*44:54
						48								56							63		-	*44:57
						48								56							63		-	*44:60, 44:110
						48								56							63		-	*44:62
						48								56	57						63		-	*44:83, 44:145
						47	48	50					55	56	57							64	-	*44:90
						48				52		54		56	57						63		-	*44:95
						47	48	50						56	57						63		-	*44:97
						48								56	57						63		-	*44:106
						48								56	57						63		-	*44:127
						48							55	56	57							64	-	*44:131
						48								56			59				63		-	*44:140
						48								56							62	63	-	*44:146
														56							63		-	*44:150
						48								56							63		-	*44:156



101.708-24 – including *Taq* polymerase, IFU-01
 101.708-24u – without *Taq* polymerase, IFU-02

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Lot-specific information

Well No.		22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	
HLA-B allele ⁴	ser. ¹⁷																					
*44:166	-	22			25				29													
*44:169	-				25												37					
*45:01, 45:05, 45:07, 45:11-45:14	B45, -				25				29			32										
*45:04	B21				25				29													
*45:06	B45				25				29			32										
*45:08	-				25				29													
*45:09	-				25				29				33									
*45:10	-				25				29		31											
*46:01:01-46:01:09, 46:04-46:05, 46:07N, 46:09-46:10, 46:14-46:16, 46:20, 46:22-46:24, 46:26-46:31, 46:34-46:38	B46, Null, -								28													
*46:02	B46								28													
*46:03, 46:08, 46:13:01-46:13:03, 46:19, 46:21:01-46:21:02, 46:25	B46, -								28													
*46:06	-								28													
*46:11	B22								28													
*46:12	-				24				28													
*46:17	-								28				33									
*46:18	-								28													
*46:32	-								28													
*46:33	-								28												37	
*47:01:01:01-47:01:02, 47:06-47:08	B47, -				25																	
*47:02	B47				25																	
*47:03	B47				25																	
*47:04-47:05	B17, -				25	26																
*48:01:01-48:01:04, 48:07, 48:09, 48:11, 48:15, 48:19-48:20, 48:22, 48:27, 48:29-48:30	B48, -	22										32										
*48:02:01-48:02:03, 48:25	B48, B70, -											32					37					
*48:03:01-48:03:02, 48:23	B48, -											32										
*48:04, 48:24	B48, -											32										
*48:05, 48:08, 48:10, 48:12, 48:14	B48, -	22										32										
*48:06	-	22																				
*48:13	-											32										
*48:16	B48	22										32										
*48:17	-	22										32										
*48:18	B48	22										32										
*48:21, 48:26	-					26						32										
*48:28	-	22										32			35							
*49:01:01, 49:01:03-49:01:04, 49:06, 49:08-49:10, 49:12-49:17, 49:19N, 49:22-49:24	B49, Null, -				25																	
*49:01:02, 49:11	B49, -				25																	
*49:02	B49				25																	
*49:03	B49																					
*49:04-49:05	B49				25																	
*49:07	-				25						31											
*49:18	-				25					30												
*49:20	-				25							32										
*49:21	-				25																	
*49:25	-			23																		
*49:26	-																36					
Well No.		22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	



101.708-24 – including *Taq* polymerase, IFU-01
 101.708-24u – without *Taq* polymerase, IFU-02

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Lot-specific information

Lot No.: 70S																Lot-specific information																Well No.	
42	43	44	45	46	47	48	49	50	51	52	53	54	55	56	57	58	59	60	61	62	63	64	ser. ¹⁷	HLA-B allele ⁴									
				46										56							63		-	*44:166									
			45			48								56	57						63		-	*44:169									
		44											55	56			59				64		B45, -	*45:01, 45:05, 45:07, 45:11-45:14									
		44											55	56			59				64		B21	*45:04									
		44			47								55	56			59				64		B45	*45:06									
		44											55	56		58					64		-	*45:08									
		44											55	56							64		-	*45:09									
		44											55	56							64		-	*45:10									
					47		49													62	64		B46, Null, -	*46:01:01-46:01:09, 46:04-46:05, 46:07N, 46:09-46:10, 46:14-46:16, 46:20, 46:22-46:24, 46:26-46:31, 46:34-46:38									
				w			49													62	64		B46	*46:02									
					47		49														64		B46, -	*46:03, 46:08, 46:13:01-46:13:03, 46:19, 46:21:01-46:21:02, 46:25									
			45		47		49														64		-	*46:06									
					47		49										59				64		B22	*46:11									
					47		49													62	64		-	*46:12									
					47		49													62	64		-	*46:17									
					47		49									58					64		-	*46:18									
					47		49				w									62	64		-	*46:32									
					47		49														64		-	*46:33									
								50						56							63		B47, -	*47:01:01:01-47:01:02, 47:06-47:08									
								50					55	56							64		B47	*47:02									
								50					w	56							63	w	B47	*47:03									
														56							63		B17, -	*47:04-47:05									
		44							51					56							64		B48, -	*48:01:01-48:01:04, 48:07, 48:09, 48:11, 48:15, 48:19-48:20, 48:22, 48:27, 48:29-48:30									
		44												56							64		B48, B70, -	*48:02:01-48:02:03, 48:25									
		44	45											56							64		B48, -	*48:03:01-48:03:02, 48:23									
		44							51					56							64		B48, -	*48:04, 48:24									
		44												56							64		B48, -	*48:05, 48:08, 48:10, 48:12, 48:14									
		44							51					56							64		-	*48:06									
		44												56							64		-	*48:13									
		44							51					56							64		B48	*48:16									
		44	45											56							64		-	*48:17									
		44							51					56							63		B48	*48:18									
		44												56							64		-	*48:21, 48:26									
		44							51					56							64		-	*48:28									
										52	53			56			59				63		B49, Null, -	*49:01:01, 49:01:03-49:01:04, 49:06, 49:08-49:10, 49:12-49:17, 49:19N, 49:22-49:24									
										52				56			59				63		B49, -	*49:01:02, 49:11									
											53			56			59				63		B49	*49:02									
											53			56			59				63		B49	*49:03									
										52	53			56							63		B49	*49:04-49:05									
										52	53			56							63		-	*49:07									
										52	53			56							63		-	*49:18									
										52	53			56			59				63		-	*49:20									
										52	53			56			59				63		-	*49:21									
										52	53			56			59				63		-	*49:25									
		42	43								53			56			59				63		-	*49:26									
42	43	44	45	46	47	48	49	50	51	52	53	54	55	56	57	58	59	60	61	62	63	64		Well No.									



101.708-24 – including *Taq* polymerase, IFU-01
 101.708-24u – without *Taq* polymerase, IFU-02

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Lot No.: **70S**

Lot-specific information

Well No.		22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	
HLA-B allele⁴	ser.¹⁷																					
*50:01:01-50:01:03, 50:04-50:05, 50:08, 50:10-50:11, 50:13, 50:16, 50:18-50:19, 50:32	B50, -				25																	
*50:02	B45				25							32										
*50:06	-				25																	
*50:07	-																					
*50:09, 50:20	-				25																	
*50:12	-				25																	
*50:14	-				25					30												
*50:15	-				25																	
*50:17	-				25												37					
*50:31	-				25						31											
*51:01:01-51:01:03, 51:01:05-51:01:08, 51:01:10-51:01:20, 51:01:22-51:01:24, 51:01:26-51:01:39, 51:01:41-51:02:03, 51:02:05-51:03, 51:05, 51:07:01-51:07:02, 51:09:01-51:09:02, 51:11N-51:12, 51:13:02-51:14, 51:16-51:19, 51:21-51:23, 51:26-51:33, 51:37-51:41N, 51:43, 51:48-51:53, 51:55, 51:57-51:58, 51:60, 51:63, 51:65-51:67, 51:69-51:77, 51:79-51:80, 51:82-51:91, 51:94-51:96, 51:98N, 51:100, 51:102-51:103, 51:105, 51:107-51:111, 51:113-51:117, 51:119-51:130, 51:132-51:134, 51:136-51:138, 51:140, 51:142, 51:145-51:146, 51:149N-51:152	B51, B5102, B5103, Null, blank, -									30												
*51:01:04, 51:02:04, 51:13:01, 51:24:01, 51:34-51:35, 51:92-51:93, 51:99, 51:131, 51:143-51:144	B51, B5102, -																					
*51:01:09, 51:01:21, 51:01:25, 51:24:03-51:24:04	B51, -									30												
*51:01:40, 51:54, 51:78:01-51:78:02	-									30												
*51:04, 51:46, 51:56:01-51:56:02, 51:139	B51, -									30							37					
*51:06:01-51:06:02, 51:59, 51:135	B51, -									30												
*51:08, 51:20, 51:44N, 51:97, 51:141	B51, Null, -								29	30												
*51:10	B51																					
*51:15, 51:62	-																					
*51:24:02	B51																					
*51:36	B51								29													
*51:42	-																37					
*51:45, 51:81	-																					
*51:61:01-51:61:02	-									30												
*51:64	-				24					30												
*51:68	-			23						30												
*51:101	-									30												41
Well No.		22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	

101.708-24 – including *Taq* polymerase, IFU-01
 101.708-24u – without *Taq* polymerase, IFU-02

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Lot-specific information

42	43	44	45	46	47	48	49	50	51	52	53	54	55	56	57	58	59	60	61	62	63	64	ser. ¹⁷	Well No.
																								HLA-B allele ⁴
		44									53		55	56			59					64	B50, -	*50:01:01-50:01:03, 50:04-50:05, 50:08, 50:10-50:11, 50:13, 50:16, 50:18-50:19, 50:32
		44									53		55	56			59					64	B45	*50:02
		44									53			56			59					64	-	*50:06
		44									53		55	56			59					64	-	*50:07
		44									53		55	56								64	-	*50:09, 50:20
		44											55	56			59					64	-	*50:12
		44									53		55	56								64	-	*50:14
		44									53		55				59					64	-	*50:15
		44											55	56			59					64	-	*50:17
		44									53		55	56								64	-	*50:31
												53	54						61			63	B51, B5102, B5103, Null, blank, -	*51:01:01-51:01:03, 51:01:05-51:01:08, 51:01:10-51:01:20, 51:01:22-51:01:24, 51:01:26-51:01:39, 51:01:41-51:02:03, 51:02:05-51:03, 51:05, 51:07:01-51:07:02, 51:09:01-51:09:02, 51:11N-51:12, 51:13:02-51:14, 51:16-51:19, 51:21-51:23, 51:26-51:33, 51:37-51:41N, 51:43, 51:48-51:53, 51:55, 51:57-51:58, 51:60, 51:63, 51:65-51:67, 51:69-51:77, 51:79-51:80, 51:82-51:91, 51:94-51:96, 51:98N, 51:100, 51:102-51:103, 51:105, 51:107-51:111, 51:113-51:117, 51:119-51:130, 51:132-51:134, 51:136-51:138, 51:140, 51:142, 51:145-51:146, 51:149N-51:152
												53	54						61			63	B51, B5102, -	*51:01:04, 51:02:04, 51:13:01, 51:24:01, 51:34-51:35, 51:92-51:93, 51:99, 51:131, 51:143-51:144
		44										53	54						61			63	B51, -	*51:01:09, 51:01:21, 51:01:25, 51:24:03-51:24:04
												53							61			63	-	*51:01:40, 51:54, 51:78:01-51:78:02
							49						54						61			63	B51, -	*51:04, 51:46, 51:56:01-51:56:02, 51:139
													54						61			63	B51, -	*51:06:01-51:06:02, 51:59, 51:135
												53	54						61			63	B51, Null, -	*51:08, 51:20, 51:44N, 51:97, 51:141
		44											54				59		61			63	B51	*51:10
		44										53	54						61			63	B51	*51:15, 51:62
												53	54						61			63	B51	*51:36
						48							54						61			63	-	*51:42
													54						61			63	-	*51:45, 51:81
												53	54						61		62	63	-	*51:61:01-51:61:02
													54						61			63	-	*51:64
												53	54						61			63	-	*51:68
												53	54						61			63	-	*51:101
42	43	44	45	46	47	48	49	50	51	52	53	54	55	56	57	58	59	60	61	62	63	64		Well No.

101.708-24 – including *Taq* polymerase, IFU-01
 101.708-24u – without *Taq* polymerase, IFU-02

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Lot-specific information

Well No.		22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	
HLA-B allele⁴	ser.¹⁷																					
*51:104, 51:118N, 51:147, 58:08:01-58:08:02 ¹¹	B17, B5, Null, -									30												
*51:106	-									30												
*51:112	-									30												
*51:148, 53:14 ¹²	-			24																		
*52:01:01:01-52:01:04, 52:01:06-52:01:09, 52:01:11- 52:01:14, 52:01:16-52:13, 52:15, 52:17-52:18, 52:22- 52:24, 52:27-52:31	B52, -									30												
*52:01:05, 52:01:15, 52:14	B52, -																					
*52:01:10	-									30												
*52:16	-									30		32										
*52:19	-								29	30												
*52:20	-									30												
*52:21	-									30												
*52:25	-																					
*52:26	-						27			30												
*53:01:01-53:01:08, 53:04- 53:05, 53:07-53:08:02, 53:10, 53:16, 53:18-53:21, 53:23- 53:27, 53:29	B53, -																37					
*53:02, 53:06	B53, B51																37					
*53:03, 53:09, 53:11-53:13	B53, B35																37					
*53:15	-	22															37					
*53:17:01-53:17:02	-																37					
*53:22	-											33					37					
*53:28	-									30							37					
*53:30, 57:45, 57:51 ¹³	-				25												37					
*54:01:01, 54:01:03-54:02, 54:05N, 54:07-54:08N, 54:10, 54:13, 54:16-54:19, 54:21- 54:25, 54:27-54:28	B54, Null, -																					
*54:01:02, 55:01:07, 55:02:01- 55:02:06, 55:07, 55:10, 55:12, 55:16, 55:19, 55:26, 55:30, 55:35, 55:37, 55:39, 55:41- 55:43, 55:47-55:48, 55:50, 55:57, 56:10 ¹⁴	B55, B54, -																					
*54:03	B22																					
*54:04, 54:09, 54:14-54:15	B54, -																					
*54:06	-																					
*54:11	B54																					
*54:12	-																					
*54:20	-																					
*54:26	-										31											
*55:01:01-55:01:06, 55:01:08- 55:01:10, 55:03, 55:05, 55:11, 55:15, 55:25, 55:29, 55:31, 55:33, 55:36, 55:38, 55:44- 55:45, 55:52-55:55N	B55, Null, -																					
*55:04, 55:08, 55:13, 55:23, 55:27, 55:32, 55:46, 55:49, 56:01:05, 56:15, 56:18- 56:19N, 56:22, 56:31-56:32 ¹⁵	B55, B56, Null, -																					
*55:09, 55:24	B22, B55										31											
Well No.		22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	

101.708-24 – including *Taq* polymerase, IFU-01
 101.708-24u – without *Taq* polymerase, IFU-02

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Lot-specific information

42	43	44	45	46	47	48	49	50	51	52	53	54	55	56	57	58	59	60	61	62	63	64	ser. ¹⁷	Well No. HLA-B allele ⁴	
											53	54									63		B17, B5, Null, -	*51:104, 51:118N, 51:147, 58:08:01-58:08:02 ¹¹	
											53	54				59	61				63		-	*51:106	
										52	53	54									63		-	*51:112	
											54									61	63		-	*51:148, 53:14 ¹²	
											53	54		56							63		B52, -	*52:01:01:01-52:01:04, 52:01:06-52:01:09, 52:01:11-52:01:14, 52:01:16-52:13, 52:15, 52:17-52:18, 52:22-52:24, 52:27-52:31	
42											53	54		56							63		B52, -	*52:01:05, 52:01:15, 52:14	
											53	54		56							63		-	*52:01:10	
											53	54		56							63		-	*52:16	
											53	54		56							63		-	*52:19	
											53			56							63		-	*52:20	
											53	54		56							62	63	-	*52:21	
											53	54		56		59					63		-	*52:25	
											53	54		56							63		-	*52:26	
												54								61	63		B53, -	*53:01:01-53:01:08, 53:04-53:05, 53:07-53:08:02, 53:10, 53:16, 53:18-53:21, 53:23-53:27, 53:29	
							49					54								61	63		B53, B51	*53:02, 53:06	
																				61	63		B53, B35	*53:03, 53:09, 53:11-53:13	
												54								61	63		-	*53:15	
												54		56						61	63		-	*53:17:01-53:17:02	
						48						54								61	63		-	*53:22	
							49					54		56							63		-	*53:28	
										52		54									63		-	*53:30, 57:45, 57:51 ¹³	
						47		50							57	58						64		B54, Null, -	*54:01:01, 54:01:03-54:02, 54:05N, 54:07-54:08N, 54:10, 54:13, 54:16-54:19, 54:21-54:25, 54:27-54:28
						47		50								58						64		B55, B54, -	*54:01:02, 55:01:07, 55:02:01-55:02:06, 55:07, 55:10, 55:12, 55:16, 55:19, 55:26, 55:30, 55:35, 55:37, 55:39, 55:41-55:43, 55:47-55:48, 55:50, 55:57, 56:10 ¹⁴
						47		50							57	59						64		B22	*54:03
						47		50							57							64		B54, -	*54:04, 54:09, 54:14-54:15
						47		50							57						62	64		-	*54:06
		44				47		50							57							64		B54	*54:11
						47		50		52					57	58						63		-	*54:12
						47		50			53				57	58						64		-	*54:20
						47		50							57							64		-	*54:26
						47		50			53					58						64		B55, Null, -	*55:01:01-55:01:06, 55:01:08-55:01:10, 55:03, 55:05, 55:11, 55:15, 55:25, 55:29, 55:31, 55:33, 55:36, 55:38, 55:44-55:45, 55:52-55:55N
						47		50														64		B55, B56, Null, -	*55:04, 55:08, 55:13, 55:23, 55:27, 55:32, 55:46, 55:49, 56:01:05, 56:15, 56:18-56:19N, 56:22, 56:31-56:32 ¹⁵
						47		50			53											64		B22, B55	*55:09, 55:24
42	43	44	45	46	47	48	49	50	51	52	53	54	55	56	57	58	59	60	61	62	63	64		Well No.	



101.708-24 – including *Taq* polymerase, IFU-01
 101.708-24u – without *Taq* polymerase, IFU-02

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Lot No.: 70S

Lot-specific information

Well No.		22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	
HLA-B allele⁴	ser.¹⁷																					
*55:14	-																37					
*55:17, 55:28, 55:58	B55, -																					
*55:18	-											32										
*55:20	B22								29													
*55:21	B55																					
*55:22	B22											31										
*55:34	-																					
*55:40	-																					
*55:51	-			24																		
*55:56	-								29													
*56:01:01-56:01:04, 56:02, 56:04, 56:08, 56:14, 56:16, 56:20:01, 56:24, 56:26-56:30, 56:34-56:36, 56:38N	B56, Null, -																					
*56:03	B22, 15																					
*56:05:01	B56									30												
*56:05:02	B56									30												
*56:06	B78									30									38			
*56:07	B56																					
*56:09, 56:11-56:12	B56, B22																37					
*56:13	B56								29													
*56:17, 56:33	B56, -																					
*56:20:02	-																					
*56:21	-									30												
*56:23	-																					
*56:25, 56:37	-																					
*56:39	-																					
*57:01:01-57:01:04, 57:01:06-57:03:02, 57:05-57:06, 57:08, 57:10, 57:15-57:20, 57:22-57:23, 57:25-57:30, 57:32-57:44, 57:46, 57:48-57:50, 57:52-57:58, 57:60-57:64, 58:36 ¹⁶	B57, Null, -																37					
*57:01:05, 57:11, 57:13, 57:21, 57:31, 57:47	B57, -																					
*57:04	B57						27											37				
*57:07, 57:24	B57, -																		37			
*57:09	B57								29										37			
*57:12	B57																		37			
*57:14	-																		37			
*57:59	-																		37			
*58:01:01-58:01:02, 58:01:04-58:01:12, 58:04-58:05, 58:10N-58:15, 58:19, 58:21-58:24, 58:28-58:29, 58:31N-58:35, 58:37, 58:39N-58:40, 58:42	B58, Null, -																37					
*58:01:03, 58:02, 58:06, 58:16:01, 58:25-58:27, 58:38	B58, -																					
*58:07	B58											33										
*58:09	B17																		37			
*58:17N	Null																		37			
*58:18	-			24																		
*58:20	-																					41
*59:01:01:01-59:01:01:02, 59:05	B59, -																					
*59:02-59:03	B59, -																					
*59:04	-																					
Well No.		22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	



101.708-24 – including *Taq* polymerase, IFU-01
 101.708-24u – without *Taq* polymerase, IFU-02

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Lot No.: **70S**

Lot-specific information

42	43	44	45	46	47	48	49	50	51	52	53	54	55	56	57	58	59	60	61	62	63	64	ser. ¹⁷	Well No. HLA-B allele ⁴	
					47			50									60					64	-	*55:14	
					47			50			53											64	B55, -	*55:17, 55:28, 55:58	
														56		58						64	-	*55:18	
				46	47			50														64	B22	*55:20	
					47			50			w					58				62		64	B55	*55:21	
					47			50														64	B22	*55:22	
					47			50						56		58						64	-	*55:34	
					47			50			53			56		58						64	-	*55:40	
					47			50														64	-	*55:51	
					47			50								58						64	-	*55:56	
					47			50									59					64	B56, Null, -	*56:01:01-56:01:04, 56:02, 56:04, 56:08, 56:14, 56:16, 56:20:01, 56:24, 56:26-56:30, 56:34-56:36, 56:38N	
					47			50												62		64	B22, 15	*56:03	
					47			50			53					58						64	B56	*56:05:01	
					47			50			53											64	B56	*56:05:02	
					47			50			53					58			w			64	B78	*56:06	
					47			50									59				63		64	B56	*56:07
					47			50														64	B56, B22	*56:09, 56:11-56:12	
					47			50									59					64	B56	*56:13	
					47			50									59					64	B56, -	*56:17, 56:33	
		44			47			50									59					64	-	*56:20:02	
					47			50			52 53											63	-	*56:21	
					47			50								58						64	-	*56:23	
					47			50			53						59					64	-	*56:25, 56:37	
					47			50	w								59					64	-	*56:39	
														54				60				63	B57, Null, -	*57:01:01-57:01:04, 57:01:06-57:03:02, 57:05-57:06, 57:08, 57:10, 57:15-57:20, 57:22-57:23, 57:25-57:30, 57:32-57:44, 57:46, 57:48-57:50, 57:52-57:58, 57:60-57:64, 58:36 ¹⁶	
													54				60				63	B57, -	*57:01:05, 57:11, 57:13, 57:21, 57:31, 57:47		
												54				60					63	B57	*57:04		
					48							54				60					63	B57, -	*57:07, 57:24		
					48							54				60					63	B57	*57:09		
																60					64	B57	*57:12		
							49					54				60					63	-	*57:14		
			45									54				60					63	-	*57:59		
												54									63	B58, Null, -	*58:01:01-58:01:02, 58:01:04-58:01:12, 58:04-58:05, 58:10N 58:15, 58:19, 58:21-58:24, 58:28-58:29, 58:31N-58:35, 58:37, 58:39N-58:40, 58:42		
												54									63	B58, -	*58:01:03, 58:02, 58:06, 58:16:01, 58:25-58:27, 58:38		
												54									63	B58	*58:07		
							49					54									63	B17	*58:09		
												54									63	Null	*58:17N		
												54									63	-	*58:18		
												54									63	-	*58:20		
										52						58					63	B59, -	*59:01:01:01-59:01:01:02, 59:05		
										52											63	B59, -	*59:02-59:03		
										52						59					63	-	*59:04		
42	43	44	45	46	47	48	49	50	51	52	53	54	55	56	57	58	59	60	61	62	63	64		Well No.	



101.708-24 – including *Taq* polymerase, IFU-01
 101.708-24u – without *Taq* polymerase, IFU-02

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Lot No.: **70S**

Lot-specific information

Well No.		22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	
HLA-B allele ⁴	ser. ¹⁷																					
*67:01:01, 67:03	B67, -					26																41
*67:01:02-67:02	B67, -																					41
*73:01-73:02	B73, -																					
*78:01:01-78:01:02, 78:02:02-78:03, 78:07	B78, -									30								38				
*78:02:01, 78:04	B78, B35									30								38				
*78:05	-									30								38				
*78:06	-									30												
*81:01	B81	22																				
*81:03-81:06	Null, -	22																				
*82:01-82:03	B82, -								29			32								39		
*83:01	-																37					
A*23:31, A*24:106, C*07:231, C*16:10							27															
A*24:174													33									
A*26:68, A*68:56, C*02:56, C*06:20, C*12:50																						
C*01:30, C*12:87					25																	
C*01:73								28														
C*03:05, C*03:25, C*03:27, C*03:143, C*03:167				24																		
C*03:19																						
C*03:102																	37					
C*03:129, C*17:16																						
C*03:179																				39		
C*06:72																						
C*07:02:30, C*08:16:02								28														
C*07:46									29													
C*07:302																					40	
C*15:02:04																						
C*15:25																						
C*15:39																						
C*15:51																						41
Well No.		22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	

¹The internal positive control primer pairs amplify segments of the human growth hormone gene. The two different control primer pairs give rise to either an internal positive control band of 1070 base pairs, for most wells, or a band of 800 base pairs, for some wells.

Well number 22 contains the primer pair giving rise to the shorter, 800 bp, internal positive control band.

In addition, wells number 25, 26, 27, 31, 37, 40, 41, 47, 49, 53 and 60 contain the primer pair giving rise to the shorter, 800 bp, internal positive control band.

²The nucleotide position, in the 1st, 2nd or 3rd exon or in the 1st intron, matching the specificity-determining 3'-end of the primer is given. Nucleotide numbering as on the www.ebi.ac.uk/imgt/hla web site. The sequence of the 3 terminal nucleotides of the primer is given.

³The nucleotide position, in the 2nd or 3rd exon, matching the specificity-determining 3'-end of the primer is given in the anti-sense direction. Nucleotide numbering as on the www.ebi.ac.uk/imgt/hla web site. The sequence of the 3 terminal nucleotides of the primer is given.

⁴The sequence of the B*0701 allele has been shown to be in error.

The B*08:06 allele has been shown to be identical to B*08:20.

The sequence of the B*13:05 allele has been shown to be identical to B*13:04.

The B*13:24 allele has been renamed B*13:22:02

The B*15:01:05 allele has been corrected and renamed B*15:120

The B*15:22 allele has been renamed B*35:43.

The sequence of the B*15:41 allele has been shown to be identical to B*15:39.

101.708-24 – including *Taq* polymerase, IFU-01
 101.708-24u – without *Taq* polymerase, IFU-02

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Lot No.: 70S

Lot-specific information

42	43	44	45	46	47	48	49	50	51	52	53	54	55	56	57	58	59	60	61	62	63	64	Well No.	
																							ser. ¹⁷	HLA-B allele ⁴
		44			47																	64	B67, -	*67:01:01, 67:03
		44			47																	64	B67, -	*67:01:02-67:02
		44			47																62	64	B73, -	*73:01-73:02
											53					58						64	B78, -	*78:01:01-78:01:02, 78:02:02-78:03, 78:07
											53											64	B78, B35	*78:02:01, 78:04
											53			56								64	-	*78:05
											53			56								64	-	*78:06
					47			50	51													64	B81	*81:01
					47				51													64	Null, -	*81:03-81:06
					47			50									59					64	B82, -	*82:01-82:03
					47	48		50							57							64	-	*83:01
																								A*23:31, A*24:106, C*07:231, C*16:10
																								A*24:174
																					62			A*26:68, A*68:56, C*02:56, C*06:20, C*12:50
																								C*01:30, C*12:87
							49																	C*01:73
																								C*03:05, C*03:25, C*03:27, C*03:143, C*03:167
																59								C*03:19
															59									C*03:102
		45																						C*03:129, C*17:16
																								C*03:179
																								C*06:72
																								C*07:02:30, C*08:16:02
																								C*07:46
																								C*07:302
																								C*15:02:04
						48										58								C*15:25
							49																	C*15:39
																								C*15:51
42	43	44	45	46	47	48	49	50	51	52	53	54	55	56	57	58	59	60	61	62	63	64	Well No.	

The B*1559 allele has been renamed B*35:44.

The B*15:100 allele has never been assigned.

The sequence of the B*1816 allele has been shown to be identical to B*18:14.

The sequence of the B*27051 allele has been shown to be identical to B*27:05:02.

The sequence of the B*2722 allele has been shown to be identical to the corrected B*27:06 sequence.

The B*3573 allele has been renamed B*35:08:03.

The B*35:43:02 allele has been renamed B*35:185.

The sequence of the B*39012 allele has been shown to be identical to B*39:01:01:01.

The sequence of the B*3921 allele has been shown to be identical to B*39:24.

The sequence of the B*4017 allele has been shown to be identical to B*40:16.

The sequence of the B*4041 allele has been shown to be identical to B*40:40.

The sequence of the B*4203 allele has never been assigned.

The sequence of the B*4401 allele has been shown to be identical to B*44:02:01:01.

The sequence of the B*5003 allele has been shown to be identical to B*50:02.

The sequence of the B*5125 allele has been shown to be identical to B*51:22.

The B*5147 allele has been renamed B*51:09:02.

The sequence of the B*5506 allele has been shown to be identical to B*55:04.

The sequence of the B*5803 allele has never been assigned.

The sequence of the B*58:30 allele has been shown to be identical to B*58:01:01.

101.708-24 – including *Taq* polymerase, IFU-01
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Lot No.: 70S**Lot-specific information**

The B*7901 allele has been renamed B*15:18:01.

The B*9530 allele has been renamed B*15:27:02.

⁵The B*07:174 and the 81:02 alleles give rise to identical amplification patterns with the HLA-B low resolution primer set. These alleles can be separated by the respective high resolution primer sets.

⁶The B*08:26, 08:50, 08:62, 08:85 and 08:94 and the B*42:07 alleles give rise to identical amplification patterns with the HLA-B low resolution primer set. These alleles can be separated by the respective high resolution primer sets.

⁷The B*13:04, 13:10, 13:21, 13:35 and 13:59 and the 44:135 and 44:158 alleles give rise to identical amplification patterns with the HLA-B low resolution primer set. These alleles can be separated by the respective high resolution primer sets.

⁸The B*14:08 and the B*39:25N, 39:30, 39:32-39:34, 39:43, 39:47, 39:50, 39:74 and 39:82 alleles give rise to identical amplification patterns with the HLA-B low resolution primer set. These alleles can be separated by the respective high resolution primer sets.

⁹The B*18:29 and 18:72 and the B*35:09:01-35:09:03, 35:18, 35:31-35:32:02, 35:37, 35:53N, 35:64:01-35:64:02, 35:68:01-35:68:02, 35:75, 35:88, 35:99, 35:118-35:119, 35:127, 35:151, 35:174 and 35:205 alleles give rise to identical amplification patterns with the HLA-B low resolution primer set. These alleles can be separated by the respective high resolution primer sets.

¹⁰The B*41:09 and the B*45:02-45:03 alleles give rise to identical amplification patterns with the HLA-B low resolution primer set. These alleles can be separated by the respective high resolution primer sets.

¹¹The B*51:104, 51:118N and 51:147 and the B*58:08:01-58:08:02 alleles give rise to identical amplification patterns with the HLA-B low resolution primer set. These alleles can be separated by the respective high resolution primer sets.

¹²The B*51:148 and the B*53:14 alleles give rise to identical amplification patterns with the HLA-B low resolution primer set. These alleles can be separated by the respective high resolution primer sets.

¹³The B*53:30 and the B*57:45 and 57:51 alleles give rise to identical amplification patterns with the HLA-B low resolution primer set. These alleles can be separated by the respective high resolution primer sets.

¹⁴The B*54:01:02, 55:01:07, 55:02:01-55:02:06, 55:07, 55:10, 55:12, 55:16, 55:19, 55:26, 55:30, 55:35, 55:37, 55:39, 55:41-55:43, 55:47-55:48, 55:50 and 55:57 and the B*56:10 alleles give rise to identical amplification patterns with the HLA-B low resolution primer set. These alleles can be separated by the respective high resolution primer sets.

¹⁵The B*55:04, 55:08, 55:13, 55:23, 55:27, 55:32, 55:46, 55:49 and the B*56:01:05, 56:15, 56:18-56:19N, 56:22 and 56:31-56:32 alleles give rise to identical amplification patterns with the HLA-B low resolution primer set. These alleles can be separated by the respective high resolution primer sets.

¹⁶The B*57:01:01-57:01:04, 57:01:06-57:03:02, 57:05-57:06, 57:08, 57:10, 57:15-57:20, 57:22-57:23, 57:25-57:30, 57:32-57:44, 57:46, 57:48-57:50, 57:52-57:58 and 57:60-57:64 and the B*58:36 alleles give rise to identical amplification patterns with the HLA-B low resolution primer set. These alleles can be separated by the respective high resolution primer sets.

¹⁷The grouping of not serologically defined alleles is taken from Tissue Antigens 73, 95-170, 2009.

‘ser’, serological HLA specificity.

‘w’, might be weakly amplified.

‘?’, nucleotide sequence information not available for the primer matching sequence.

101.708-24 – including *Taq* polymerase, IFU-01
 101.708-24u – without *Taq* polymerase, IFU-02

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Lot No.: **70S**

Lot-specific information

		INTERPRETATION TABLE																				
		DR low resolution SSP typing																				
		Amplification patterns of the DRB1*01:01 to DRB1*10:05 alleles																				
		Well																				
		65 66 67 68 69 70 71 72 73 74 75 76 77 78 79 80 81 82 83 84 85 86 87																				
Length of spec. PCR product(s)																						
Length of int. pos. control¹																						
5'-primer(s)²																						
3'-primer(s)³																						
Well No.	DR																					
65	DR	5'-CCA 86(344)	5'-AgT 77(317)	5'-gCg 71(299)	5'-CTg 70(297)	5'-gAT 66(286)	5'-gAg 66(286)	5'-gAT 66(286)	5'-gAT 66(286)	5'-gAT 66(286)	5'-gAT 66(286)	5'-gAT 66(286)	5'-gAT 66(286)	5'-gAT 66(286)	5'-gAT 66(286)	5'-gAT 66(286)	5'-gAT 66(286)	5'-gAT 66(286)	5'-gAT 66(286)	5'-gAT 66(286)	5'-gAT 66(286)	5'-gAT 66(286)
66																						
67																						
68																						
69																						
70																						
71																						
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84																						
85																						
86																						
87																						



101.708-24 – including *Taq* polymerase, IFU-01
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Lot No.: 70S

Lot-specific information

Well No.	DR	65	66	67	68	69	70	71	72	73	74	75	76	77	78	79	80	81	82	83	84	85	86	87
DRB1 allele ⁴	ser ⁹																							
*01:01:01-01:02:08, 01:04-01:38, 01:40N-01:41, 01:43-01:58	DR1, Null, -	65																						
*01:03, 01:39N	DR103, DR1, Null		66																					
*01:42	-	65	66																					
*03:01:01-03:01:22, 03:04:01-03:06, 03:09, 03:11:01-03:16, 03:18-03:20, 03:22-03:23, 03:25-03:26, 03:28, 03:30-03:31, 03:33-03:34, 03:36-03:37, 03:43-03:45, 03:47-03:48, 03:50-03:52, 03:54-03:63, 03:66-03:68N, 03:70-03:73, 03:75, 03:77-03:84, 03:86, 03:89	DR17, DR3, Null, -					69	70											81						
*03:02:01-03:03, 03:27, 03:29, 03:38, 03:53, 03:74, 03:88, 03:90	DR18, DR3, -					69		71										81						
*03:07, 03:17, 03:21, 03:24, 03:32, 03:35, 03:39-03:41, 03:49	DR3, -					69												81						
*03:08, 03:65	DR3, -					69	70				75		77											
*03:10	DR3					69	70												83	84				
*03:42, 03:69, 03:87	-					69																		
*03:46, 03:64	-					69	70																	
*03:76	-						70					76			79		81							
*04:01:01-04:05:11, 04:05:13-04:61, 04:63-04:68, 04:70-04:72:02, 04:74-04:104, 04:106-04:121, 04:123-04:145, 04:147-04:158N	DR4, DR3, Null, -								72															
*04:62, 04:69, 04:73, 04:105:01-04:105:02, 04:122, 04:146	DR4, -								72										82					
*07:01:01-07:01:04, 07:03-07:24	DR7, Null, -									73														
*08:01:01-08:02:04, 08:04:01-08:07, 08:11, 08:16-08:17, 08:22, 08:24, 08:26, 08:28, 08:39, 08:42-08:44, 08:50, 08:52	DR8, -										74						80							
Well No.	DR	65	66	67	68	69	70	71	72	73	74	75	76	77	78	79	80	81	82	83	84	85	86	87

101.708-24 – including *Taq* polymerase, IFU-01
 101.708-24u – without *Taq* polymerase, IFU-02

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Lot No.: **70S**

Lot-specific information

Well No.	DR	65	66	67	68	69	70	71	72	73	74	75	76	77	78	79	80	81	82	83	84	85	86	87
DRB1 allele ⁴	ser ⁹																							
*08:03:02-08:03:03, 08:10, 08:12-08:15, 08:18-08:19, 08:23, 08:25, 08:27, 08:29-08:30:03, 08:33-08:34, 08:36:01, 08:37-08:38, 08:45-08:49, 08:51	DR8, -										74													
*08:08	DR8										74						80		82					
*08:09, 14:15 ⁵	DR8										74						80				84			
*08:20, 13:18, 13:47, 13:55, 13:158 ⁶	DR13, -															79	80	81			84			
*08:21	DR8										74					79	80				84			
*08:31, 08:41, 11:67 ⁷	DR8, DR11, -										74			77			80							
*08:32, 08:53	-										74				78						84			
*08:35, 08:36:02	-										74										84			
*08:40	-						70				74													
*09:01:02-09:01:05, 09:01:07-09:02:02, 09:04-09:20	DR9, -											75								83				
*09:01:06, 09:03	DR9											75												
*10:01:01-10:05	DR10, -												76											
*11:01:01-11:01:17, 11:04:01-11:04:11, 11:06:01-11:06:03, 11:09-11:10:02, 11:12:01-11:12:02, 11:15, 11:24, 11:27:01-11:30, 11:32-11:33, 11:35, 11:37:01-11:39, 11:43-11:44, 11:46:01-11:47, 11:49:01-11:51, 11:54:01-11:54:02, 11:56, 11:58:01-11:58:02, 11:60-11:62, 11:66, 11:72, 11:74:01-11:75, 11:77-11:78, 11:81, 11:84:01-11:84:02, 11:88, 11:90-11:92, 11:94-11:95, 11:97, 11:99-11:102:02, 11:106, 11:108-11:117, 11:120-11:121, 11:123, 11:126, 11:128-11:129, 11:133-11:134, 11:137, 11:140-11:141, 11:144-11:145	DR11, -														77		79	80						
*11:01:18, 11:08:01-11:08:02, 11:18-11:19:03, 11:42, 11:57, 11:130	DR11, -														77		79							
Well No.	DR	65	66	67	68	69	70	71	72	73	74	75	76	77	78	79	80	81	82	83	84	85	86	87

101.708-24 – including *Taq* polymerase, IFU-01
 101.708-24u – without *Taq* polymerase, IFU-02

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Lot No.: 70S

Lot-specific information

Well No.	DR	65	66	67	68	69	70	71	72	73	74	75	76	77	78	79	80	81	82	83	84	85	86	87
DRB1 allele ⁴	ser ⁹																							
*11:02:01-11:03, 11:11:01-11:11:02, 11:14:01-11:14:02, 11:16, 11:20-11:21, 11:36, 11:40-11:41, 11:48, 11:63, 11:65:01-11:65:02, 11:68, 11:70, 11:76, 11:85-11:86, 11:93, 11:118, 11:122, 11:124, 11:127, 11:138-11:139	DR11, DR13, -						70							77	79	80								
*11:05	DR11													77		80								
*11:07, 11:53, 11:103, 11:105, 11:107, 11:125	DR11, -					69					75			77										
*11:13:01-11:13:02	DR11							w						77						83	84			
*11:17, 11:52	DR14, DR11													77						83	84			
*11:22, 11:98, 11:104, 11:136, 11:143	-													77										
*11:23:01, 11:25, 11:96	DR11, -													77	79	80					84			
*11:26, 11:34	DR11							71						77										
*11:31, 11:45, 11:64, 11:119	DR11, -													77	79						84			
*11:55	DR11													77		80					84			
*11:59, 11:80, 11:83, 11:87, 11:135, 11:142	DR11, -						70					76		77	79	80								
*11:69, 11:82	-													77		80				82				
*11:73, 11:79, 11:131-11:132	-						70							77	79									
*11:89	-													77							84			
*12:01:01-12:01:05, 12:03:02-12:03:03, 12:05-12:12, 12:14, 12:17, 12:24N-12:25, 12:28-12:30, 12:34-12:36, 12:38	DR12, Null, -														78									
*12:02:01-12:02:05, 12:13, 12:15, 12:18-12:21, 12:23, 12:26-12:27, 12:31N-12:33, 12:37	DR12, Null, -														78		80							
*12:04, 12:39	DR12, -											74			78									
*12:16:01-12:16:02	-											74			78		80							
*12:22	-										73	74			78									
Well No.	DR	65	66	67	68	69	70	71	72	73	74	75	76	77	78	79	80	81	82	83	84	85	86	87

101.708-24 – including *Taq* polymerase, IFU-01
 101.708-24u – without *Taq* polymerase, IFU-02

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Lot No.: **70S**

Lot-specific information

Well No.	DR	65	66	67	68	69	70	71	72	73	74	75	76	77	78	79	80	81	82	83	84	85	86	87
DRB1 allele ⁴	ser ⁹																							
*13:01:01-13:02:01, 13:02:03-13:02:08, 13:04, 13:08, 13:16, 13:20, 13:22-13:24, 13:28-13:29, 13:31-13:32, 13:34-13:36, 13:38-13:40, 13:48, 13:51-13:52, 13:54, 13:59, 13:61:01-13:61:02, 13:63-13:65, 13:68-13:70, 13:72-13:76, 13:78-13:80, 13:83-13:84, 13:87, 13:91-13:93, 13:96:01-13:99, 13:102, 13:105-13:107, 13:109, 13:111-13:114, 13:117, 13:121, 13:123-13:128, 13:130-13:131, 13:135, 13:138-13:143, 13:145, 13:147-13:149, 13:153, 13:155	DR13, DR11, DR14, Null, -						70									79	80	81						
*13:02:02	DR13						70											81						
*13:03:01-13:03:06, 13:10, 13:33:01-13:33:03, 13:37, 13:66:01-13:66:02, 13:81, 13:88-13:90, 13:94:01-13:95, 13:101, 13:115, 13:120, 13:133, 13:137N, 13:151-13:152	DR13, Null, -						70									79		81						
*13:05:01-13:05:02, 13:07:01-13:07:02, 13:11:01-13:11:02, 13:14:01-13:14:03, 13:21:01-13:21:02, 13:42, 13:46, 13:49-13:50:02, 13:62, 13:100, 13:108, 13:132, 13:136, 13:150	DR13, DR11, DR6, -															79	80	81						
*13:06, 13:12:01-13:12:03, 13:25, 13:30, 13:56, 13:58, 13:60, 13:77, 13:82, 13:110, 13:118, 13:134, 13:157, 13:161	DR13, DR11, DR6, -															79		81						
*13:09	DR13																80	81						
*13:13, 13:119, 13:154, 13:156, 14:84, 14:116 ⁸	DR13, -															79		81		84				
*13:15, 13:19, 13:53, 13:57, 13:104	DR13, -						70	71								79	80	81						
*13:17, 13:116	DR13, -						70			73							80							
Well No.	DR	65	66	67	68	69	70	71	72	73	74	75	76	77	78	79	80	81	82	83	84	85	86	87



101.708-24 – including *Taq* polymerase, IFU-01
 101.708-24u – without *Taq* polymerase, IFU-02

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Lot No.: **70S**

Lot-specific information

Well No.	DR	65	66	67	68	69	70	71	72	73	74	75	76	77	78	79	80	81	82	83	84	85	86	87
DRB1 allele⁴	ser⁹																							
*13:26:01-13:26:02	DR14, -							71								79	80	81						
*13:27, 13:41, 13:71	DR13						70					76				79	80	81						
*13:43, 13:159	DR13, -						70									79	80			83	84			
*13:44, 13:86	-							71										81						
*13:45	DR13						70									79	80		82		84			
*13:67, 13:103, 13:160	DR13, -															79	80							
*13:85	-						70	71								79		81						
*13:122	-						70									79								
*13:129	-						70					76					80	81						
*13:144	-						70									79	80	81			84			
*13:146	-																80	81			84			
*14:01:01-14:01:02, 14:01:04, 14:04, 14:07:01-14:07:02, 14:10, 14:26, 14:28, 14:31, 14:32:03, 14:35, 14:38-14:39, 14:54:01, 14:55, 14:57, 14:60-14:62, 14:70-14:71, 14:75-14:76, 14:79, 14:86-14:88, 14:90, 14:99, 14:101, 14:104, 14:107, 14:110-14:114, 14:117-14:118, 14:120, 14:122, 14:124-14:125, 14:129, 14:131, 14:138-14:140	DR14, DR1404, DR4, DR6, -																		82	83	84			
*14:01:03, 14:08, 14:23:02, 14:34, 14:54:02, 14:72, 14:92N, 14:97, 14:126, 14:130, 14:133	DR14, Null, -																			83	84			
*14:02, 14:06:01-14:06:02, 14:09, 14:13, 14:17, 14:20, 14:29-14:30, 14:33, 14:41, 14:47-14:48, 14:51, 14:80, 14:83, 14:94, 14:106, 14:108, 14:121	DR14, DR6, -							71										81		83				
*14:03:01-14:03:02, 14:12:01-14:12:02, 14:40, 14:63, 14:67, 14:77-14:78, 14:85, 14:102, 14:115, 14:135	DR1403, DR14, DR6, -							71								79		81			84			
*14:05:01-14:05:04, 14:14, 14:23:01, 14:23:03-14:23:04, 14:36, 14:43-14:45, 14:56, 14:59, 14:64, 14:91, 14:96, 14:100, 14:103, 14:123, 14:127:01-14:127:02, 14:134	DR14, -																	81		83	84			
Well No.	DR	65	66	67	68	69	70	71	72	73	74	75	76	77	78	79	80	81	82	83	84	85	86	87



101.708-24 – including *Taq* polymerase, IFU-01
 101.708-24u – without *Taq* polymerase, IFU-02

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Lot No.: 70S

Lot-specific information

Well No.	DR	65	66	67	68	69	70	71	72	73	74	75	76	77	78	79	80	81	82	83	84	85	86	87
DRB1 allele ⁴	ser ⁹																							
*14:11	DR14									74										83	84			
*14:16	DR6					70										79	80		82	83	84			
*14:18, 14:81	DR14, -							71										81		83	84			
*14:19, 14:21, 14:109	DR14, -					70	71									79		81		w				
*14:22, 14:105	DR14, -															79	80		82	83	84			
*14:24	DR14							71									80	81						
*14:25, 14:53, 14:128	DR6, DR13, 14, -															79	80		82		84			
*14:27	DR14							71								79	80	81			84			
*14:32:01-14:32:02	DR14							w												82	83	84		
*14:37	DR14																80	81	82					
*14:42, 14:136	-																	81			84			
*14:46, 14:52	DR14																			83				
*14:49, 14:119	DR14, -							71												82	83	84		
*14:50	DR14									73										82	83	84		
*14:58	DR14																			82		84		
*14:65	DR6							w										81		83	84			
*14:68, 14:93	DR14, -									74										82	83	84		
*14:69	-															79			82		84			
*14:73	-																80		82	83	84			
*14:74	-															79			82	83	84			
*14:82	-						70													82	83	84		
*14:89	-							71											81		84			
*14:95	-						70												81		83	84		
*14:98	-							71								79		81						
*14:132	-						70														83	84		
*14:137N	Null						70									79			82	83	84			
*15:01:01:01-15:20, 15:22-15:24, 15:26, 15:28-15:33, 15:35-15:65, 15:67-15:94	DR15, DR2, Null, -			67																				
*15:21	DR2			67																	w			
*15:25	-			67		69																		
*15:27, 15:34, 15:66	-			67																83				
*16:01:01-16:03, 16:05:01-16:05:02, 16:07-16:17, 16:19-16:23	DR16, Null, -				68																			
*16:04, 16:18	DR16, -				68																w			
Well No.	DR	65	66	67	68	69	70	71	72	73	74	75	76	77	78	79	80	81	82	83	84	85	86	87

101.708-24 – including *Taq* polymerase, IFU-01
 101.708-24u – without *Taq* polymerase, IFU-02

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Lot No.: **70S**

Lot-specific information

Well No.	DR	65	66	67	68	69	70	71	72	73	74	75	76	77	78	79	80	81	82	83	84	85	86	87	
DRB1 allele ⁴	ser ⁹																								
<i>DRB3*01:01:02:01-01:15,</i> <i>DRB3*02:01-02:26,</i> <i>DRB3*02:28-02:29N,</i> <i>DRB3*03:01:01-03:03</i>	DR52, Null, -																						85		
<i>DRB3*02:27</i>	-															79							85		
<i>DRB4*01:01:01:01-01:03:01:01,</i> <i>DRB4*01:03:01:03-01:08</i>	DR53, -																							86	
<i>DRB4*01:03:01:02N</i>	Null																		82					86	
<i>DRB5*01:01:01-01:14,</i> <i>DRB5*02:02-02:06</i>	DR51, -, Null, -																								87
Well No.	ser ⁹	65	66	67	68	69	70	71	72	73	74	75	76	77	78	79	80	81	82	83	84	85	86	87	

¹The internal positive control primer pairs amplify segments of the human growth hormone gene. The two different control primer pairs give rise to either an internal positive control band of 430 base pairs, for most wells, or a band of 515 base pairs, for some wells. Well number 65 contains the primer pair giving rise to the longer, 515 bp, internal positive control band. In addition, well number 74 contains the primer pair giving rise to the longer, 515 bp, internal positive control band.

²The codon, and in parenthesis the nucleotide, in the 2nd exon or the 1st intron, matching the specificity-determining 3'-end of the primer is given. Codon and nucleotide numbering as on the www.ebi.ac.uk/imgt/hla web site. The sequence of the 3 terminal nucleotides of the primer is given.

³The codon, and in parenthesis the nucleotide, in the 2nd exon, matching the specificity-determining 3'-end of the primer is given in the anti-sense direction. Codon and nucleotide numbering as on the www.ebi.ac.uk/imgt/hla web site. The sequence of the 3 terminal nucleotides of the primer is given.

⁴The DRB1*04:05:12 allele has been shown to be identical to DRB1*04:05:14.

The DRB1*0702 allele has been shown to be identical to DRB1*07:01:01:01.

The DRB1*08031 allele has been shown to be identical to DRB1*08:03:02.

The DRB1*09011 allele has been shown to be identical to DRB1*09:01:02.

The DRB1*03:11:02 allele has been renamed DRB1*03:81.

The DRB1*1171 allele has been shown to be identical to DRB1*11:02:01.

The DRB1*12031 allele has been shown to be identical to DRB1*12:01:01.

The DRB1*1466 allele has been shown to be identical to DRB1*14:23:02.

The DRB1*1606 allele has been shown to be identical to DRB1*16:05:01.

The DRB3*010101 allele has been shown to be identical to DRB3*01:01:02:01.

The DRB4*0101102N allele has been renamed DRB4*01:03:01:02N.

The DRB5*0201 allele has been shown to be identical to DRB5*02:02.

The DRB4*02:01N and DRB4*03:01N null alleles will not be amplified by the DR low resolution primer set.

⁵The DRB1*08:09 and the DRB1*14:15 alleles yield identical amplification patterns with the DR low resolution primer set. These alleles can be separated by the respective high resolution primer sets.

⁶The DRB1*08:20 and the DRB1*13:18, 13:47, 13:55 and 13:158 alleles yield identical amplification patterns with the DR low resolution primer set. These alleles can be separated by the respective high resolution primer sets.

⁷The DRB1*08:31, 08:41 and DRB1*11:67 alleles yield identical amplification patterns with the DR low resolution primer set. These alleles can be separated by the respective high resolution primer sets.

⁸The DRB1*13:13, 13:119, 13:154, 13:156 and the DRB1*14:84 and 14:116 alleles yield identical amplification patterns with the DR low resolution primer set. These alleles can be separated by the respective high resolution primer sets.

⁹The grouping of not serologically defined alleles is taken from Tissue Antigens 73, 95-170, 2009.

'ser', serological HLA specificity.

'w', may be weakly amplified.

'?', nucleotide sequence information for the primer matching region(s) is not known.

101.708-24 – including *Taq* polymerase, IFU-01
 101.708-24u – without *Taq* polymerase, IFU-02

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Lot No.: 70S

Lot-specific information

INTERPRETATION TABLE										
DQ low resolution SSP typing										
Amplification patterns of the DQB1*05:01 to DQB1*04:12 alleles										
		Well ⁶								
		88	89	90	91	92	93	94	95	96
Length of spec.		225	220	210	220	130	135	85	160	Negative control
PCR product(s)		275			185					
Length of int.		515	515	430	515	515	515	515	430	
pos. control ¹										
5'-primer(s) ²		25(170) 5'-gCA 3'	9(122) 5'-gTT 3'	29(184) 5'-gAg 3'	26(173) 5'-TTA 3'	28(179) 5'-gAC 3'	26(173) 5'-TCT 3'	38(210) 5'-gCA 3'	38(210) 5'-gCg 3'	
		26(173) 5'-ggg 3'	24(169) 5'-TgT 3'	30(185) 5'-AAg 3'		28(179) 5'-gAC 3'		71(309) 5'-ACC 3'		
			26(173) 5'-TTA 3'					71(309) 5'-ACC 3'		
			26(173) 5'-TCT 3'							
3'-primer(s) ³		87(356) 5'-ggT 3'	86(353) 5'-ACg 3'	86(353) 5'-gCT 3'	86(353) 5'-gCT 3'	57(266) 5'-Cgg 3'	57(266) 5'-CgT 3'	86(353) 5'-gCT 3'	77(327) 5'-ACg 3'	
			86(353) 5'-ACC 3'		86(354) 5'-AgT 3'			86(354) 5'-AgT 3'		
			86(354) 5'-TAT 3'							
Well No.		88	89	90	91	92	93	94	95	96
DQB1 allele ⁴	ser. ⁵									
*05:01:01:01-05:26	DQ5, -	88								
*06:01:01-06:28, 06:30-06:50, 06:52-06:65, 06:67-06:84	DQ6, DQ5, DQ1, Null, -		89							
*06:29	DQ6		89			92				
*06:51, 06:66	-		89				93			
*02:01:01-02:02:02, 02:04-02:29	DQ2, Null, -			90						
*02:03	DQ2			90			93			
*03:01:01:01-03:01:16, 03:04, 03:09-03:10, 03:13-03:14:02, 03:16, 03:19, 03:21-03:22, 03:24, 03:27-03:29, 03:35-03:36, 03:42, 03:44, 03:46-03:60, 03:69, 03:71	DQ7, DQ3, -				91			94		
*03:02:01-03:02:07, 03:05:01-03:05:04, 03:07-03:08, 03:11, 03:18, 03:32, 03:37, 03:45, 03:61, 03:63-03:64, 03:66N-03:68, 03:70	DQ8, Null, -					92		94		
*03:03:02:01-03:03:06, 03:06, 03:12, 03:15, 03:20, 03:25-03:26, 03:30-03:31, 03:33-03:34, 03:38-03:41, 03:43, 03:65	DQ9, DQ3, -						93	94		
*03:17:01-03:17:02, 03:23, 03:62, 03:72	DQ9, -							94		
*04:01:01-04:02:03, 04:04-04:09, 04:11-04:12	DQ4, -								95	
*04:03:01-04:03:02	-						93		95	
DQB1 allele ⁴	ser. ⁵									
Well No.		88	89	90	91	92	93	94	95	96

101.708-24 – including *Taq* polymerase, IFU-01
101.708-24u – without *Taq* polymerase, IFU-02

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Lot No.: 70S**Lot-specific information**

¹The internal positive control primer pairs amplify segments of the human growth hormone gene. The two different control primer pairs give rise to either an internal positive control band of 430 base pairs, for most wells, or a band of 515 base pairs, for some wells.

Well number 88 contains the primer pair giving rise to the longer, 515 bp, internal positive control band in order to help in the correct orientation of the DQ low resolution typing.

In addition, wells number 89, 91, 92, 93 and 94 contain the primer pair giving rise to the longer, 515 bp, internal positive control band in order to allow kit identification.

²The codon, and in parenthesis the nucleotide, in the 2nd exon, matching the specificity-determining 3'-end of the primer is given. Codon and nucleotide numbering as on the www.ebi.ac.uk/imgt/hla web site. The sequence of the 3 terminal nucleotides of the primer is given.

³The codon, and in parenthesis the nucleotide, in the 2nd exon, matching the specificity-determining 3'-end of the primer is given in the anti-sense direction. Codon and nucleotide numbering as on the www.ebi.ac.uk/imgt/hla web site. The sequence of the 3 terminal nucleotides of the primer is given.

⁴The sequence of the DQB1*03031 allele has been shown to be identical to DQB1*03:03:02.

⁵The serological split of the DQB1*05:05-05:26, DQB1*06:06 to 06:07 alleles, the DQB1*06:10, 06:13, 06:15-06:24 and 06:27 to 06:84, the DQB1*02:04-02:29, the DQB1*03:07-03:09 and 03:11-03:72 alleles and the DQB1:04:0301-04:12 alleles is not known. In this table we have used the expert-assigned serological grouping in Tissue Antigens (2009) 73:95-170, and also inferred the serological grouping from the naming of the sequence-defined allele.

⁶Primer mix 96 contains a negative control, which will amplify more than 95% of HLA amplicons as well as the amplicons generated by control primer pairs. PCR product sizes range from 75 to 200 base pairs. The PCR product generated by the control primer pair is 430 base pairs.

101.708-24 – including *Taq* polymerase, IFU-01
 101.708-24u – without *Taq* polymerase, IFU-02

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Lot No.: **70S**

Lot-specific information

CELL LINE VALIDATION SHEET																			
HLA-A low resolution primer set																			
				Lot No.:	Well														
					1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
					201321701	201211702	201321703	201211704	201211706	201211707	201211708	201211709	201211710	201211711	201321712	201211713	201321714	201321715	201211716
	IHWC cell line	A*	A*																
1	9001 SA	*24:02			-	-	-	-	-	+	-	-	-	-	-	-	-	-	-
2	9280 LK707	*02:01			-	+	-	-	-	-	-	-	-	-	-	-	-	-	-
3	9011 E4181324	*01:01			+	-	-	+	-	-	-	-	-	-	-	-	-	-	-
4	9275 GU373	*30:01			-	-	-	-	-	-	-	-	-	-	-	-	+	+	-
5	9009 KAS011	*01:01			+	-	-	+	-	-	-	-	-	-	-	-	-	-	-
6	9353 SM	*02:01	*26:03		-	+	-	-	-	-	+	-	-	+	-	-	-	-	-
7	9020 QBL	*26:01			-	-	-	-	-	-	+	-	+	-	-	+	-	-	-
8	9025 DEU	*31:01			-	-	-	-	-	-	-	-	-	-	-	-	-	-	+
9	9026 YAR	*26:01			-	-	-	-	-	-	+	-	+	-	-	+	-	-	-
10	9107 LKT3	*24:02			-	-	-	-	-	+	-	-	-	-	-	-	-	-	-
11	9051 PITOUT	*29:02			-	-	-	-	-	-	-	-	-	-	-	+	-	-	-
12	9052 DBB	*02:01			-	+	-	-	-	-	-	-	-	-	-	-	-	-	-
13	9004 JESTHOM	*02:01			-	+	-	-	-	-	-	-	-	-	-	-	-	-	-
14	9071 OLGA	*31:01			-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
15	9075 DKB	*24:02			-	-	-	-	-	+	-	-	-	-	-	-	-	-	-
16	9037 SWEIG007	*29:02			-	-	-	-	-	-	-	-	-	-	-	+	-	-	-
17	9282 CTM3953540	*03:01	*80:01		-	-	+	-	+	-	-	-	-	-	+	-	-	-	-
18	9257 32367	*33:03	*74:01		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
19	9038 BM16	*02:01			-	+	-	-	-	-	-	-	-	-	-	-	-	-	-
20	9059 SLE005	*02:01			-	+	-	-	-	-	-	-	-	-	-	-	-	-	-
21	9064 AMALA	*02:17			-	+	-	-	-	W	-	-	-	-	-	-	-	-	-
22	9056 KOSE	*02:01			-	+	-	-	-	-	-	-	-	-	-	-	-	-	-
23	9124 IHL	*02:01	*34:01		-	+	-	-	-	-	+	-	+	+	-	-	-	-	-
24	9035 JBUSH	*32:01			-	-	-	-	-	-	-	+	-	-	-	-	-	-	-
25	9049 IBW9	*33:01			-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
26	9285 WT49	*02:05			-	+	-	-	-	-	-	-	-	-	-	-	-	-	-
27	9191 CH1007	*24:10	*29:01		-	-	-	-	-	+	-	-	-	-	-	+	-	-	-
28	9320 BEL5GB	*02:01	*29:02		-	+	-	-	-	-	-	-	-	-	-	+	-	-	-
29	9050 MOU	*29:02			-	-	-	-	-	-	-	-	-	-	-	+	-	-	-
30	9021 RSH	*30:01	*68:02		-	-	-	-	-	-	+	-	-	-	-	-	+	+	-
31	9019 DUCAF	*30:02			-	-	-	-	-	-	-	-	-	-	-	-	+	+	-
32	9297 HAG	*02:01			-	+	-	-	-	-	-	-	-	-	-	-	-	-	-
33	9098 MT14B	*31:01			-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
34	9104 DHIF	*31:01			-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
35	9302 SSTO	*32:01			-	-	-	-	-	-	-	+	-	-	-	-	-	-	-
36	9024 KT17	*02:06	*11:01		-	+	-	+	-	-	-	-	+	-	-	-	-	-	-
37	9065 HHKB	*03:01			-	-	+	-	-	-	-	-	-	-	+	-	-	-	-
38	9099 LZL	*02:17			-	+	-	-	-	W	-	-	-	-	-	-	-	-	-
39	9315 CML	*01:01	*03:01		+	-	+	+	-	-	-	-	-	-	+	-	-	-	-
40	9134 WHONP199	*02:07	*30:01		-	+	-	-	-	-	-	-	-	-	-	-	+	+	-
41	9055 H0301	*03:01			-	-	+	-	-	-	-	-	-	-	+	-	-	-	-
42	9066 TAB089	*02:07			-	+	-	-	-	-	-	-	-	-	-	-	-	-	-
43	9076 T7526	*02:06	*02:07		-	+	-	-	-	-	-	-	-	-	-	-	-	-	-
44	9057 TEM	*66:01			-	-	-	-	-	-	+	-	-	+	-	+	-	-	-
45	9239 SHJO	*23:01	*24:02		-	-	-	-	+	+	-	-	-	-	-	-	-	-	-
46	9013 SCHU	*03:01			-	-	+	-	-	-	-	-	-	-	+	-	-	-	-
47	9045 TUBO	*02:16	*03:01		-	+	+	-	-	-	-	-	-	-	+	-	-	-	-
48	9303 TER-ND	*02:01	*11:01		-	+	-	+	-	-	-	-	-	+	-	-	-	-	-



101.708-24 – including *Taq* polymerase, IFU-01
 101.708-24u – without *Taq* polymerase, IFU-02

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Lot No.: 70S

Lot-specific information

CELL LINE VALIDATION SHEET									
HLA-A low resolution primer set									
				Well					
				16	17	18	19	20	21
				201211717	201321718	201321719	201211720	201321721	201211723
	IHWC cell line	A*	A*	Lot No.:					
1	9001 SA	*24:02			-	-	-	-	-
2	9280 LK707	*02:01			-	-	-	-	-
3	9011 E4181324	*01:01			-	-	-	-	-
4	9275 GU373	*30:01			-	-	-	-	-
5	9009 KAS011	*01:01			-	-	-	-	-
6	9353 SM	*02:01	*26:03		-	-	-	-	+
7	9020 QBL	*26:01			-	-	-	-	-
8	9025 DEU	*31:01			-	-	-	-	-
9	9026 YAR	*26:01			-	-	-	-	-
10	9107 LKT3	*24:02			-	-	-	-	-
11	9051 PITOUT	*29:02			-	-	-	-	-
12	9052 DBB	*02:01			-	-	-	-	-
13	9004 JESTHOM	*02:01			-	-	-	-	-
14	9071 OLGA	*31:01			-	-	-	-	-
15	9075 DKB	*24:02			-	-	-	-	-
16	9037 SWEIG007	*29:02			-	-	-	-	-
17	9282 CTM3953540	*03:01	*80:01		-	-	-	-	+
18	9257 32367	*33:03	*74:01		-	+	+	-	-
19	9038 BM16	*02:01			-	-	-	-	-
20	9059 SLE005	*02:01			-	-	-	-	-
21	9064 AMALA	*02:17			-	-	-	-	-
22	9056 KOSE	*02:01			-	-	-	-	-
23	9124 IHL	*02:01	*34:01		-	-	-	-	-
24	9035 JBUSH	*32:01			+	-	-	-	-
25	9049 IBW9	*33:01			-	+	-	-	-
26	9285 WT49	*02:05			-	-	-	-	-
27	9191 CH1007	*24:10	*29:01		-	-	-	-	-
28	9320 BEL5GB	*02:01	*29:02		-	-	-	-	-
29	9050 MOU	*29:02			-	-	-	-	-
30	9021 RSH	*30:01	*68:02		-	-	-	+	-
31	9019 DUCAF	*30:02			-	-	-	-	-
32	9297 HAG	*02:01			-	-	-	-	-
33	9098 MT14B	*31:01			-	-	-	-	-
34	9104 DHIF	*31:01			-	-	-	-	-
35	9302 SSTO	*32:01			+	-	-	-	-
36	9024 KT17	*02:06	*11:01		-	-	-	-	-
37	9065 HHKB	*03:01			-	-	-	-	-
38	9099 LZL	*02:17			-	-	-	-	-
39	9315 CML	*01:01	*03:01		-	-	-	-	-
40	9134 WHONP199	*02:07	*30:01		-	-	-	-	-
41	9055 H0301	*03:01			-	-	-	-	-
42	9066 TAB089	*02:07			-	-	-	-	-
43	9076 T7526	*02:06	*02:07		-	-	-	-	-
44	9057 TEM	*66:01			-	-	-	-	-
45	9239 SHJO	*23:01	*24:02		-	-	-	-	-
46	9013 SCHU	*03:01			-	-	-	-	-
47	9045 TUBO	*02:16	*03:01		-	-	-	-	-
48	9303 TER-ND	*02:01	*11:01		-	-	-	-	-

101.708-24 – including *Taq* polymerase, IFU-01
 101.708-24u – without *Taq* polymerase, IFU-02

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Lot No.: **70S**

Lot-specific information

CELL LINE VALIDATION SHEET																			
HLA-B low resolution SSP kit																			
			Prod. No.:	Well															
				22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	
				201321848	201318702	201321803	201318704	201318705	201320806	201318707	201321808	201321809	201318710	201318711	201318713	201318714	201318715	201318716	
	IHWC cell line	B*																	
1	9001 SA	*07:02		+	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
2	9280 LK707	*52:01	*73:01	-	-	-	-	-	-	-	-	+	-	-	-	-	-	-	
3	9011 E4181324	*52:01		-	-	-	-	-	-	-	-	+	-	-	-	-	-	-	
4	9275 GU373	*15:10	*53:01	-	-	-	-	-	-	-	+	-	+	-	-	+	-	-	
5	9009 KAS011	*37:01		-	-	-	-	-	-	-	-	-	-	-	+	-	-	-	
6	9353 SM	*39:01	*51:01	-	-	-	-	+	-	-	-	+	-	-	-	-	-	-	
7	9020 QBL	*18:01		-	-	-	-	-	-	-	-	-	-	-	-	-	+	-	
8	9025 DEU	*35:01		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
9	9026 YAR	*38:01		-	-	-	-	+	-	-	-	-	-	-	-	-	-	-	
10	9107 LKT3	*54:01		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
11	9051 PITOUT	*44:03		-	-	-	+	-	-	-	-	-	-	-	-	-	-	-	
12	9052 DBB	*57:01		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
13	9004 JESTHOM	*27:05		-	-	-	-	+	-	-	-	-	-	-	-	-	-	+	
14	9071 OLGA	*15:01	*15:20	-	-	-	-	-	-	+	-	-	-	-	-	-	-	-	
15	9075 DKB	*40:01		-	-	-	+	-	-	-	-	-	-	-	-	-	-	-	
16	9037 SWEIG007	*40:02		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
17	9282 CTM3953540	*08:01	*55:01	+	+	-	-	-	-	-	+	-	-	-	-	-	-	-	
18	9257 32367	*14:01	*56:01	-	-	-	+	+	-	-	-	-	-	-	-	-	-	-	
19	9038 BM16	*18:01		-	-	-	-	-	-	-	-	-	-	-	-	-	+	-	
20	9059 SLE005	*40:01		-	-	-	+	-	-	-	-	-	-	-	-	-	-	-	
21	9064 AMALA	*15:01		-	-	-	-	-	-	+	-	-	-	-	-	-	-	-	
22	9056 KOSE	*35:03		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
23	9124 IHL	*40:02	*56:02	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
24	9035 JBUSH	*38:01		-	-	-	-	+	-	-	-	-	-	-	-	-	-	-	
25	9049 IBW9	*14:02		-	-	-	+	-	+	-	-	-	-	-	-	-	-	-	
26	9285 WT49	*58:01		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
27	9191 CH1007	*07:05	*51:01	+	-	-	-	-	-	-	-	+	-	-	-	-	-	-	
28	9320 BEL5GB	*44:02	*44:03	-	-	-	+	-	-	-	-	-	-	-	-	-	-	-	
29	9050 MOU	*44:03		-	-	-	+	-	-	-	-	-	-	-	-	-	-	-	
30	9021 RSH	*42:01		-	-	-	-	-	-	-	+	-	-	-	-	-	-	-	
31	9019 DUCAF	*18:01		-	-	-	-	-	-	-	-	-	-	-	-	-	+	-	
32	9297 HAG	*41:02		-	-	-	+	-	-	-	+	-	-	-	-	-	-	-	
33	9098 MT14B	*40:01		-	-	-	+	-	-	-	-	-	-	-	-	-	-	-	
34	9104 DHIF	*38:01		-	-	-	-	+	-	-	-	-	-	-	-	-	-	-	
35	9302 SSTO	*44:02		-	-	-	+	-	-	-	-	-	-	-	-	-	-	-	
36	9024 KT17	*15:01	*35:01	-	-	-	-	-	-	+	-	-	-	-	-	-	-	-	
37	9065 HHKB	*07:02		+	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
38	9099 LZL	*15:01		-	-	-	-	-	-	+	-	-	-	-	-	-	-	-	
39	9315 CML	*08:01	*27:05	-	+	-	-	+	-	-	+	-	-	-	-	-	-	+	
40	9134 WHONP199	*13:02	*46:01	-	-	+	+	-	-	+	-	-	+	-	-	-	-	-	
41	9055 H0301	*14:02		-	-	-	+	-	+	-	-	-	-	-	-	-	-	-	
42	9066 TAB089	*46:01		-	-	-	-	-	-	+	-	-	-	-	-	-	-	-	
43	9076 T7526	*46:01		-	-	-	-	-	-	+	-	-	-	-	-	-	-	-	
44	9057 TEM	*38:01		-	-	-	-	+	-	-	-	-	-	-	-	-	-	-	
45	9239 SHJO	*42:01	*50:01	-	-	-	+	-	-	-	+	-	-	-	-	-	-	-	
46	9013 SCHU	*07:02		+	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
47	9045 TUBO	*51:01		-	-	-	-	-	-	-	-	+	-	-	-	-	-	-	
48	9303 TER-ND	*35:01	*44:03	-	-	-	+	-	-	-	-	-	-	-	-	-	-	-	



101.708-24 – including *Taq* polymerase, IFU-01
 101.708-24u – without *Taq* polymerase, IFU-02

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Lot No.: **70S**

Lot-specific information

CELL LINE VALIDATION SHEET																		
HLA-B low resolution SSP kit																		
				Prod. No.:	Well													
					37	38	39	40	41	42	43	44	45	46	47	48	49	50
					201318717	201321818	201318719	201318720	201318721	201320822	201320823	201320824	201318725	201318727	201318728	201322929	201318731	201318732
	IHWC cell line		B*															
1	9001 SA		*07:02		-	-	-	+	-	-	-	+	-	-	+	-	-	-
2	9280 LK707		*52:01	*73:01	-	-	-	-	-	-	-	+	-	-	+	-	-	-
3	9011 E4181324		*52:01		-	-	-	-	-	-	-	-	-	-	-	-	-	-
4	9275 GU373		*15:10	*53:01	+	-	+	-	-	-	-	-	-	-	-	-	-	-
5	9009 KAS011		*37:01		+	-	-	+	-	-	-	-	-	-	-	+	-	-
6	9353 SM		*39:01	*51:01	-	-	-	-	+	-	+	+	-	-	-	-	-	-
7	9020 QBL		*18:01		-	+	-	-	-	-	-	-	-	-	-	-	-	-
8	9025 DEU		*35:01		+	+	-	-	-	-	-	-	-	-	-	-	-	-
9	9026 YAR		*38:01		-	-	-	-	-	+	+	-	-	-	-	-	-	-
10	9107 LKT3		*54:01		-	-	-	-	-	-	-	-	-	-	+	-	-	+
11	9051 PITOUT		*44:03		+	-	-	-	-	-	-	-	-	-	-	+	-	-
12	9052 DBB		*57:01		+	-	-	-	-	-	-	-	-	-	-	-	-	-
13	9004 JESTHOM		*27:05		-	-	-	-	-	-	-	-	-	-	+	-	-	+
14	9071 OLGA		*15:01	*15:20	+	-	+	-	-	-	-	-	-	-	-	-	-	-
15	9075 DKB		*40:01		-	-	-	-	-	-	-	+	+	-	-	-	-	-
16	9037 SWEIG007		*40:02		-	-	-	-	-	-	-	-	-	-	-	-	-	-
17	9282 CTM3953540		*08:01	*55:01	-	-	-	-	-	-	-	+	-	+	+	-	-	+
18	9257 32367		*14:01	*56:01	-	-	-	-	-	-	+	+	-	-	+	-	-	+
19	9038 BM16		*18:01		-	+	-	-	-	-	-	-	-	-	-	-	-	-
20	9059 SLE005		*40:01		-	-	-	-	-	-	-	+	+	-	-	-	-	-
21	9064 AMALA		*15:01		-	-	+	-	-	-	-	-	-	-	-	-	-	-
22	9056 KOSE		*35:03		+	+	-	-	-	-	-	-	-	-	-	-	-	-
23	9124 IHL		*40:02	*56:02	-	-	-	-	-	-	-	-	-	-	+	-	-	+
24	9035 JBUSH		*38:01		-	-	-	-	+	+	+	-	-	-	-	-	-	-
25	9049 IBW9		*14:02		-	-	-	-	-	-	+	+	-	-	-	-	-	-
26	9285 WT49		*58:01		+	-	-	-	-	-	-	-	-	-	-	-	-	-
27	9191 CH1007		*07:05	*51:01	-	-	-	-	-	-	-	+	-	-	+	-	-	-
28	9320 BEL5GB		*44:02	*44:03	+	-	-	-	-	-	-	-	-	-	-	+	-	-
29	9050 MOU		*44:03		+	-	-	-	-	-	-	-	-	-	-	+	-	-
30	9021 RSH		*42:01		-	-	-	-	-	-	-	+	-	+	+	-	-	-
31	9019 DUCAF		*18:01		-	+	-	-	-	-	-	-	-	-	-	-	-	-
32	9297 HAG		*41:02		-	-	-	-	-	-	-	+	-	+	-	-	-	-
33	9098 MT14B		*40:01		-	-	-	-	-	-	-	+	+	-	-	-	-	-
34	9104 DHIF		*38:01		-	-	-	-	+	+	+	-	-	-	-	-	-	-
35	9302 SSTO		*44:02		+	-	-	-	-	-	-	-	-	-	-	+	-	-
36	9024 KT17		*15:01	*35:01	+	+	+	-	-	-	-	-	-	-	-	-	-	-
37	9065 HHKB		*07:02		-	-	-	-	-	-	-	+	-	-	+	-	-	-
38	9099 LZL		*15:01		-	-	+	-	-	-	-	-	-	-	-	-	-	-
39	9315 CML		*08:01	*27:05	-	-	-	-	-	-	-	+	-	+	+	-	-	+
40	9134 WHONP199		*13:02	*46:01	-	-	-	-	-	-	-	-	-	-	+	-	+	-
41	9055 H0301		*14:02		-	-	-	-	-	-	+	+	-	-	-	-	-	-
42	9066 TAB089		*46:01		-	-	-	-	-	-	-	-	-	-	+	-	+	-
43	9076 T7526		*46:01		-	-	-	-	-	-	-	-	-	-	+	-	+	-
44	9057 TEM		*38:01		-	-	-	-	+	+	+	-	-	-	-	-	-	-
45	9239 SHJO		*42:01	*50:01	-	-	-	-	-	-	-	+	-	+	+	-	-	-
46	9013 SCHU		*07:02		-	-	-	-	-	-	-	+	-	-	+	-	-	-
47	9045 TUBO		*51:01		-	-	-	-	-	-	-	-	-	-	-	-	-	-
48	9303 TER-ND		*35:01	*44:03	+	+	-	-	-	-	-	-	-	-	-	+	-	-



101.708-24 – including *Taq* polymerase, IFU-01
 101.708-24u – without *Taq* polymerase, IFU-02

Visit www.olerup-ssp.com for
 “Instructions for Use” (IFU)

Lot No.: **70S**

Lot-specific information

CELL LINE VALIDATION SHEET																	
HLA-B low resolution SSP kit																	
				Well													
				51	52	53	54	55	56	57	58	59	60	61	62	63	64
			Prod. No.:	201318733	201318734	201318735	201318736	201318737	201318738	201318739	201318740	201318741	201321842	201318744	201318745	201318746	201318747
	IHWC cell line		B*														
1	9001 SA		*07:02	-	-	-	-	-	-	-	-	-	-	-	-	-	+
2	9280 LK707		*52:01 *73:01	-	-	+	+	-	+	-	-	-	-	-	-	+	-
3	9011 E4181324		*52:01	-	-	+	+	-	+	-	-	-	-	-	+	+	+
4	9275 GU373		*15:10 *53:01	-	-	-	+	-	-	-	-	-	-	+	-	+	+
5	9009 KAS011		*37:01	-	-	-	-	-	+	-	-	-	-	-	-	+	-
6	9353 SM		*39:01 *51:01	-	-	+	+	-	-	-	-	-	-	+	-	+	+
7	9020 QBL		*18:01	-	-	-	-	-	-	-	-	-	-	+	-	-	+
8	9025 DEU		*35:01	-	-	-	-	-	-	-	-	-	-	+	-	-	+
9	9026 YAR		*38:01	-	-	-	-	-	-	-	-	-	-	-	-	+	-
10	9107 LKT3		*54:01	-	-	-	-	-	-	+	+	-	-	-	-	-	+
11	9051 PITOUT		*44:03	-	-	-	-	-	+	-	-	-	-	-	-	+	-
12	9052 DBB		*57:01	-	-	-	+	-	-	-	-	-	+	-	-	+	-
13	9004 JESTHOM		*27:05	-	-	-	-	-	+	-	-	-	-	-	-	+	-
14	9071 OLGA		*15:01 *15:20	-	-	-	-	-	+	-	-	-	-	-	+	-	+
15	9075 DKB		*40:01	-	-	-	-	-	+	+	-	-	-	-	-	-	+
16	9037 SWEIG007		*40:02	-	-	-	-	-	+	+	-	-	-	-	-	-	+
17	9282 CTM3953540		*08:01 *55:01	-	-	+	-	-	-	-	+	-	-	-	-	-	+
18	9257 32367		*14:01 *56:01	-	-	-	-	-	-	-	-	+	-	-	-	-	+
19	9038 BM16		*18:01	-	-	-	-	-	-	-	-	-	-	+	-	-	+
20	9059 SLE005		*40:01	-	-	-	-	-	+	+	-	-	-	-	-	-	+
21	9064 AMALA		*15:01	-	-	-	-	-	+	-	-	-	-	-	+	-	+
22	9056 KOSE		*35:03	-	-	-	-	-	-	-	-	-	-	+	-	-	+
23	9124 IHL		*40:02 *56:02	-	-	-	-	+	+	-	-	+	-	-	-	-	+
24	9035 JBUSH		*38:01	-	-	-	-	-	-	-	-	-	-	-	-	+	-
25	9049 IBW9		*14:02	-	-	-	-	-	-	-	-	-	-	-	-	-	+
26	9285 WT49		*58:01	-	-	-	+	-	-	-	-	-	-	-	-	+	-
27	9191 CH1007		*07:05 *51:01	-	-	+	+	-	-	-	-	-	-	+	-	+	+
28	9320 BEL5GB		*44:02 *44:03	-	-	-	-	-	+	+	-	-	-	-	-	+	-
29	9050 MOU		*44:03	-	-	-	-	-	+	-	-	-	-	-	-	+	-
30	9021 RSH		*42:01	-	-	-	-	-	-	-	-	-	-	-	-	-	+
31	9019 DUCAF		*18:01	-	-	-	-	-	-	-	-	-	-	+	-	-	+
32	9297 HAG		*41:02	-	-	-	-	+	+	-	-	-	-	-	-	-	+
33	9098 MT14B		*40:01	-	-	-	-	+	+	-	-	-	-	-	-	-	+
34	9104 DHIF		*38:01	-	-	-	-	-	-	-	-	-	-	-	-	+	-
35	9302 SSTO		*44:02	-	-	-	-	-	+	+	-	-	-	-	-	+	-
36	9024 KT17		*15:01 *35:01	-	-	-	-	-	+	-	-	-	-	+	+	-	+
37	9065 HHKB		*07:02	-	-	-	-	-	-	-	-	-	-	-	-	-	+
38	9099 LZL		*15:01	-	-	-	-	-	+	-	-	-	-	-	+	-	+
39	9315 CML		*08:01 *27:05	-	-	-	-	-	+	-	-	-	-	-	-	+	+
40	9134 WHONP199		*13:02 *46:01	-	-	-	-	-	+	-	-	-	-	-	+	+	+
41	9055 H0301		*14:02	-	-	-	-	-	-	-	-	-	-	-	-	-	+
42	9066 TAB089		*46:01	-	-	-	-	-	-	-	-	-	-	-	+	-	+
43	9076 T7526		*46:01	-	-	-	-	-	-	-	-	-	-	-	+	-	+
44	9057 TEM		*38:01	-	-	-	-	-	-	-	-	-	-	-	-	+	-
45	9239 SHJO		*42:01 *50:01	-	-	+	-	+	+	-	-	+	-	-	-	-	+
46	9013 SCHU		*07:02	-	-	-	-	-	-	-	-	-	-	-	-	-	+
47	9045 TUBO		*51:01	-	-	+	+	-	-	-	-	-	-	+	-	+	-
48	9303 TER-ND		*35:01 *44:03	-	-	-	-	-	+	-	-	-	-	+	-	+	+



101.708-24 – including *Taq* polymerase, IFU-01
 101.708-24u – without *Taq* polymerase, IFU-02

Visit www.olerup-ssp.com for
 “Instructions for Use” (IFU)

Lot No.: 70S

Lot-specific information

CELL LINE VALIDATION SHEET																			
DR low resolution primer set																			
				Well															
				65	66	67	68	69	70	71	72	73	74	75	76	77	78	79	80
				Prod. No.:															
				201321901	201209002	201209003	201209004	201209005	201209006	201209007	201209008	201209009	201209010	201209011	201209012	201209013	201209014	201209015	201209016
	IHWC cell line		DRB1																
1	9001 SA		*01:01		+	-	-	-	-	-	-	-	-	-	-	-	-	-	-
2	9280 LK707		*15:02	*04:05	-	-	+	-	-	-	-	+	-	-	-	-	-	-	-
3	9011 E4181324		*15:02		-	-	+	-	-	-	-	-	-	-	-	-	-	-	-
4	9275 GU373		*03:01		-	-	-	-	+	+	-	-	-	-	-	-	-	-	-
5	9009 KAS011		*16:01		-	-	-	+	-	-	-	-	-	-	-	-	-	-	-
6	9353 SM		*04:07	*08:03	-	-	-	-	-	-	-	+	-	+	-	-	-	-	-
7	9020 QBL		*03:01		-	-	-	-	+	+	-	-	-	-	-	-	-	-	-
8	9025 DEU		*04:01		-	-	-	-	-	-	-	+	-	-	-	-	-	-	-
9	9026 YAR		*04:02		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
10	9107 LKT3		*04:05		-	-	-	-	-	-	-	+	-	-	-	-	-	-	-
11	9051 PITOUT		*07:01		-	-	-	-	-	-	-	-	+	-	-	-	-	-	-
12	9052 DBB		*07:01		-	-	-	-	-	-	-	-	+	-	-	-	-	-	-
13	9004 JESTHOM		*01:01		+	-	-	-	-	-	-	-	-	-	-	-	-	-	-
14	9071 OLGA		*08:02		-	-	-	-	-	-	-	-	+	-	-	-	-	-	+
15	9075 DKB		*09:01		-	-	-	-	-	-	-	-	-	+	-	-	-	-	-
16	9037 SWEIG007		*11:01		-	-	-	-	-	-	-	-	-	-	-	+	-	+	+
17	9282 CTM3953540		*03:01	*13:01	-	-	-	-	+	+	-	-	-	-	-	-	-	+	+
18	9257 32367		*09:01	*11:01	-	-	-	-	-	-	-	-	-	+	-	+	-	+	+
19	9038 BM16		*12:01		-	-	-	-	-	-	-	-	-	-	-	-	+	-	-
20	9059 SLE005		*13:02		-	-	-	-	-	+	-	-	-	-	-	-	-	+	+
21	9064 AMALA		*14:02		-	-	-	-	-	-	+	-	-	-	-	-	-	-	-
22	9056 KOSE		*13:02	*14:01	-	-	-	-	-	+	-	-	-	-	-	-	-	+	+
23	9124 IHL		*08:03	*14:14	-	-	-	-	-	-	-	-	+	-	-	-	-	-	-
24	9035 JBUSH		*11:01		-	-	-	-	-	-	-	-	-	-	-	+	-	+	+
25	9049 IBW9		*07:01		-	-	-	-	-	-	-	-	+	-	-	-	-	-	-
26	9285 WT49		*03:01		-	-	-	-	+	+	-	-	-	-	-	-	-	-	-
27	9191 CH1007		*04:05	*10:01	-	-	-	-	-	-	-	+	-	-	-	+	-	-	-
28	9320 BEL5GB		*04:16	*07:01	-	-	-	-	-	-	-	+	+	-	-	-	-	-	-
29	9050 MOU		*07:01		-	-	-	-	-	-	-	-	+	-	-	-	-	-	-
30	9021 RSH		*03:02		-	-	-	-	+	-	+	-	-	-	-	-	-	-	-
31	9019 DUCAF		*03:01		-	-	-	-	+	+	-	-	-	-	-	-	-	-	-
32	9297 HAG		*13:03		-	-	-	-	-	+	-	-	-	-	-	-	-	+	-
33	9098 MT14B		*04:04		-	-	-	-	-	-	-	+	-	-	-	-	-	-	-
34	9104 DHIF		*11:01		-	-	-	-	-	-	-	-	-	-	-	+	-	+	+
35	9302 SSTO		*04:03		-	-	-	-	-	-	-	+	-	-	-	-	-	-	-
36	9024 KT17		*04:03	*04:06	-	-	-	-	-	-	-	+	-	-	-	-	-	-	-
37	9065 HHKB		*13:01		-	-	-	-	-	+	-	-	-	-	-	-	-	+	+
38	9099 LZL		*14:02		-	-	-	-	-	-	+	-	-	-	-	-	-	-	-
39	9315 CML		*03:01	*04:01	-	-	-	-	+	+	-	+	-	-	-	-	-	-	-
40	9134 WHONP199		*07:01	*09:01	-	-	-	-	-	-	-	-	+	-	+	-	-	-	-
41	9055 H0301		*13:02		-	-	-	-	-	+	-	-	-	-	-	-	-	+	+
42	9066 TAB089		*08:03		-	-	-	-	-	-	-	-	-	+	-	-	-	-	-
43	9076 T7526		*09:01		-	-	-	-	-	-	-	-	-	-	+	-	-	-	-
44	9057 TEM		*14:01		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
45	9239 SHJO		*07:01		-	-	-	-	-	-	-	-	+	-	-	-	-	-	-
46	9013 SCHU		*15:01		-	-	+	-	-	-	-	-	-	-	-	-	-	-	-
47	9045 TUBO		*11:04	*12:01	-	-	-	-	-	-	-	-	-	-	-	-	+	+	+
48	9303 TER-ND		*01:03		-	+	-	-	-	-	-	-	-	-	-	-	-	-	-



101.708-24 – including *Taq* polymerase, IFU-01
 101.708-24u – without *Taq* polymerase, IFU-02

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 “Instructions for Use” (IFU)

Lot No.: 70S

Lot-specific information

CELL LINE VALIDATION SHEET						
DR low resolution primer set						
				Well ¹		
					81	82
			Prod. No.:			
				201209017		
				201209018		
				201209019		
				201321920		
				201209029		
				201209030		
				201209031		
	IHWC cell line	DRB1				
1	9001 SA	*01:01		- - - - - - -		
2	9280 LK707	*15:02	*04:05	- - - - - + +		
3	9011 E4181324	*15:02		- - - - - - +		
4	9275 GU373	*03:01		+ - - - + - -		
5	9009 KAS011	*16:01		- - - - - - +		
6	9353 SM	*04:07	*08:03	- - - - - + -		
7	9020 QBL	*03:01		+ - - - + - -		
8	9025 DEU	*04:01		- - - - - + -		
9	9026 YAR	*04:02		- - - - - + -		
10	9107 LKT3	*04:05		- - - - - + -		
11	9051 PITOUT	*07:01		- - - - - + -		
12	9052 DBB	*07:01		- + - - - + -		
13	9004 JESTHOM	*01:01		- - - - - - -		
14	9071 OLGA	*08:02		- - - - - - -		
15	9075 DKB	*09:01		- - + - - + -		
16	9037 SWEIG007	*11:01		- - - - + - -		
17	9282 CTM3953540	*03:01	*13:01	+ - - - + - -		
18	9257 32367	*09:01	*11:01	- - + - + + -		
19	9038 BM16	*12:01		- - - - + - -		
20	9059 SLE005	*13:02		+ - - - + - -		
21	9064 AMALA	*14:02		+ - + - + - -		
22	9056 KOSE	*13:02	*14:01	+ + + + - - -		
23	9124 IHL	*08:03	*14:14	+ - + + + - -		
24	9035 JBUSH	*11:01		- - - - + - -		
25	9049 IBW9	*07:01		- - - - - + -		
26	9285 WT49	*03:01		+ - - - + - -		
27	9191 CH1007	*04:05	*10:01	- - - - - + -		
28	9320 BEL5GB	*04:16	*07:01	- - - - - + -		
29	9050 MOU	*07:01		- - - - - + -		
30	9021 RSH	*03:02		+ - - - + - -		
31	9019 DUCAF	*03:01		+ - - - + - -		
32	9297 HAG	*13:03		+ - - - + - -		
33	9098 MT14B	*04:04		- - - - - + -		
34	9104 DHIF	*11:01		- - - - + - -		
35	9302 SSTO	*04:03		- - - - - + -		
36	9024 KT17	*04:03	*04:06	- - - - - + -		
37	9065 HHKB	*13:01		+ - - - + - -		
38	9099 LZL	*14:02		+ - + - + - -		
39	9315 CML	*03:01	*04:01	+ - - - + + -		
40	9134 WHONP199	*07:01	*09:01	- - + - - + -		
41	9055 H0301	*13:02		+ - - - + - -		
42	9066 TAB089	*08:03		- - - - - - -		
43	9076 T7526	*09:01		- - + - - + -		
44	9057 TEM	*14:01		- + + + + - -		
45	9239 SHJO	*07:01		- - - - + + -		
46	9013 SCHU	*15:01		- - - - - - +		
47	9045 TUBO	*11:04	*12:01	- - - - + - -		
48	9303 TER-ND	*01:03		- - - - - - -		

¹The DRB4*01:03:01:02N allele is amplified by primer mix 82 in the DBB/9052 cell line.

101.708-24 – including *Taq* polymerase, IFU-01
 101.708-24u – without *Taq* polymerase, IFU-02

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Lot No.: 70S

Lot-specific information

CELL LINE VALIDATION SHEET											
DQ low resolution primer set											
				Well							
				88	89	90	91	92	93	94	95
				201323101	201323102	201323103	201323104	201316105	201316106	201323107	201323108
			Production No.	IHC cell line		DQB1					
1	9001	SA		*05:01							
2	9280	LK707		*06:01	*02:02						
3	9011	E4181324		*06:01							
4	9275	GU373		*02:01							
5	9009	KAS011		*05:02							
6	9353	SM		*03:02	*06:01						
7	9020	QBL		*02:01							
8	9025	DEU		*03:01							
9	9026	YAR		*03:02							
10	9107	LKT3		*04:01							
11	9051	PITOUT		*02:02							
12	9052	DBB		*03:03							
13	9004	JESTHOM		*05:01							
14	9071	OLGA		*04:02							
15	9075	DKB		*03:03							
16	9037	SWEIG007		*03:01							
17	9282	CTM 3953540		*02:01	*06:03						
18	9257	32367		*06:02	*02:02						
19	9038	BM16		*03:01							
20	9059	SLE005		*06:04							
21	9064	AMALA		*03:01							
22	9056	KOSE		*05:03	*06:04						
23	9124	IHL		*05:03	*06:01						
24	9035	JBUSH		*03:01							
25	9049	IBW9		*02:02							
26	9285	WT49		*02:01							
27	9191	CH1007		*04:01	*05:01						
28	9320	BEL5GB		*02:02	*03:01						
29	9050	MOU		*02:02							
30	9021	RSH		*04:02							
31	9019	DUCAF		*02:01							
32	9297	HAG		*03:01							
33	9098	MT14B		*03:02							
34	9104	DHIF		*03:01							
35	9302	SSTO		*03:05							
36	9024	KT17		*03:02							
37	9065	HHKB		*06:03							
38	9099	LZL		*03:01							
39	9315	CML		*02:01	*03:01						
40	9134	WHONP199		*02:02	*03:03						
41	9055	H0301		*06:09							
42	9066	TAB089		*06:01							
43	9076	T7526		*03:03							
44	9057	TEM		*05:03							
45	9239	SHJO		*02:02							
46	9013	SCHU		*06:02							
47	9045	TUBO		*03:01							
48	9303	TER-ND		*05:01							

101.708-24 – including *Taq* polymerase, IFU-01
 101.708-24u – without *Taq* polymerase, IFU-02

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Lot No.: **70S**

Lot-specific information

CERTIFICATE OF ANALYSIS

Olerup SSP® HLA-A-B-DR-DQ SSP Combi Tray

Product number: 101.708-24 – including *Taq* pol.
 101.708-24u – without *Taq* pol.
 Lot number: 70S
 Expiry date: 2016-March-01
 Number of tests: 24 tests
 Number of wells per test: 95 +1

Well specifications:

Well No.	Production No.	Well No.	Production No.	Well No.	Production No.
1	2013-217-01	9	2012-117-10	17	2013-217-18
2	2012-117-02	10	2012-117-11	18	2013-217-19
3	2013-217-03	11	2013-217-12	19	2012-117-20
4	2012-117-04	12	2012-117-13	20	2013-217-21
5	2012-117-06	13	2013-217-14	21	2012-117-23
6	2012-117-07	14	2013-217-15		
7	2012-117-08	15	2012-117-16		
8	2012-117-09	16	2012-117-17		

The specificity of each primer solution of the kit has been tested against 48 well characterized IHWC cell line DNAs.

Additional 5'- and 3'-primers in primer solutions 4, 6, 7, 11, 13 to 16 and 19 to 21 were tested by separately adding one 3'-primer, respectively one 5'-primer. Additional 5'-primers in primer solution 1 and 18 were tested by separately adding one 3'-primer. Additional 3'-primers in primer solutions 3 and 17 were tested by separately adding one 5'-primer.

In primer solutions 2, 10, 11 and 14 one or two 5'-primers were not possible to test, and in primer solutions 3, 5, 7, 11, 12, 15 and 17 one 3'-primer was not possible to test.

Well No.	Production No.	Well No.	Production No.	Well No.	Production No.
22	2013-218-48	38	2013-218-18	54	2013-187-36
23	2013-187-02	39	2013-187-19	55	2013-187-37
24	2013-218-03	40	2013-187-20	56	2013-187-38
25	2013-187-04	41	2013-187-21	57	2013-187-39
26	2013-187-05	42	2013-208-22	58	2013-187-40
27	2013-208-06	43	2013-208-23	59	2013-187-41
28	2013-187-07	44	2013-208-24	60	2013-218-42
29	2013-218-08	45	2013-187-25	61	2013-187-44
30	2013-218-09	46	2013-187-27	62	2013-187-45
31	2013-187-10	47	2013-187-28	63	2013-187-46
32	2013-187-11	48	2013-229-29	64	2013-187-47
33	2013-187-13	49	2013-187-31		
34	2013-187-14	50	2013-187-32		
35	2013-187-15	51	2013-187-33		
36	2013-187-16	52	2013-187-34		
37	2013-187-17	53	2013-187-35		

101.708-24 – including *Taq* polymerase, IFU-01
 101.708-24u – without *Taq* polymerase, IFU-02

Visit www.olerup-ssp.com for
 “Instructions for Use” (IFU)

Lot No.: 70S**Lot-specific information**

The specificity of each primer solution of the kit has been tested against 48 well characterized IHWC cell line DNAs.

Additional 5'-primers and 3'-primers in primer solutions 24, 27, 34, 39, 48, 49 and 58 were tested by separately adding one additional 3'-primer, respectively one additional 5'-primer. Additional 3'-primers in primer solutions 23, 29, 33, 35, 38 and 53 were tested by separately adding one additional 5'-primer. Additional 5'-primers in primer solutions 22, 41 and 45 were tested by separately adding one additional 3'-primer.

In primer mixes 49 and 60 one 5'-primer was not possible to test, and in primer mixes 24, 56 and 60 one or two 3'-primer was not possible to test.

Well No.	Production No.	Well No.	Production No.	Well No.	Production No.
65	2013-219-01	73	2012-090-09	81	2012-090-17
66	2012-090-02	74	2012-090-10	82	2012-090-18
67	2012-090-03	75	2012-090-11	83	2012-090-19
68	2012-090-04	76	2012-090-12	84	2013-219-20
69	2012-090-05	77	2012-090-13	85	2012-088-29
70	2012-090-06	78	2012-090-14	86	2012-088-30
71	2012-090-07	79	2012-090-15	87	2012-088-31
72	2012-090-08	80	2012-090-16		

The specificity of each primer solution of the kit has been tested against 48 well characterized IHWC cell line DNAs.

Additional 5'- and 3'-primers in primer solutions 73, 75 and 82 were tested by separately adding one 3'-primer, respectively one 5'-primer.

Additional 5'-primers in primer solutions 70, 76, 79 and 80 were tested by separately adding one 3'-primer. Additional 3'-primers in primer solutions 65, 67, 68, 74 and 84 were tested by separately adding one 5'-primer.

One, two or three of the 5'-primers in primer solution 65, 67, 68, 72 to 74, 77, 79, 80 and 84 were not possible to test. One or two of the 3'-primers in primer solution 65, 67, 68, 77, 79 and 86 were not possible to test.

Well No.	Production No.
88	2013-231-01
89	2013-231-02
90	2013-231-03
91	2013-231-04
92	2013-161-05
93	2013-161-06
94	2013-231-07
95	2013-231-08

The specificity of each primer solution of the kit has been tested against 48 well characterized IHWC cell line DNAs.

One additional 5'-primer in primer solutions 89 and 94 were tested by separately adding one additional 3'-primer.

In primer mixes 88, 89 and 90 one 5'-primer was not possible to test, and in primer mixes 89, 91 and 94 one 3'-primer was not possible to test.

101.708-24 – including *Taq* polymerase, IFU-01
101.708-24u – without *Taq* polymerase, IFU-02

Visit www.olerup-ssp.com for
“Instructions for Use” (IFU)

Lot No.: **70S**

Lot-specific information

The negative control primer pairs, **Production No. 2013-165-01**, can detect contamination with PCR products diluted 10^{-7} .

Results: No false positive or false negative amplifications were obtained.

Date of approval: 2013-September-25

Approved by

Production Quality Control

101.708-24 – including *Taq* polymerase, IFU-01
101.708-24u – without *Taq* polymerase, IFU-02

Visit www.olerup-ssp.com for
“Instructions for Use” (IFU)

Lot No.: **70S**

Lot-specific information

Declaration of Conformity

Product name: *Olerup* SSP® HLA-A-B-DR-DQ SSP Combi Tray
Product number: 101.708-24/24u
Lot number: 70S

Intended use: HLA-A, HLA-B, HLA-DR and HLA-DQ low resolution histo-compatibility testing

Manufacturer: *Olerup* SSP AB
Franzengatan 5
SE-112 51 Stockholm, Sweden
Phone: +46-8-717 88 27
Fax: +46-8-717 88 18

We, *Olerup* SSP AB, hereby declare that this product, to which this Declaration of Conformity relates is in conformity with the following Standard(s) and other normative document(s) ISO 9001:2008 and ISO 13485:2012, following the provisions of the 98/79/EC Directive on *in vitro* diagnostic medical devices, Annex II List B, conformity assessed using Annex IV, as transposed into the national laws of the Member States of the European Union.

The Technical Documentation File is maintained at *Olerup* SSP AB, Franzengatan 5, SE-112 51 Stockholm, Sweden.

Notified Body: Lloyd's Register Quality Assurance Limited, Hiramford, Middlemarch Office Village, Siskin Drive, Coventry CV3 4FJ, United Kingdom. (Notified Body number: 0088.)

Stockholm, Sweden
2013-September-25

Ann-Cathrin Jareman
Head of QA and Regulatory Affairs

101.708-24 – including *Taq* polymerase, IFU-01
101.708-24u – without *Taq* polymerase, IFU-02

Visit www.olerup-ssp.com for
“Instructions for Use” (IFU)

Lot No.: **70S**

Lot-specific information

101.708-24 – including *Taq* polymerase, IFU-01
101.708-24u – without *Taq* polymerase, IFU-02

Visit www.olerup-ssp.com for
“Instructions for Use” (IFU)

Lot No.: **70S**

Lot-specific information

101.708-24 – including *Taq* polymerase, IFU-01
101.708-24u – without *Taq* polymerase, IFU-02

Visit www.olerup-ssp.com for
“Instructions for Use” (IFU)

Lot No.: **70S**

Lot-specific information

101.708-24 – including *Taq* polymerase, IFU-01
101.708-24u – without *Taq* polymerase, IFU-02

Visit www.olerup-ssp.com for
“Instructions for Use” (IFU)

Lot No.: **70S**

Lot-specific information

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Fax: 610-344-7989

E-mail: info.us@olerup.com

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For information on *Olerup* SSP distributors worldwide, contact **Olerup GmbH**.

101.401.48/12 – including *Taq* pol., IFU-01
101.401.48u/12u – without *Taq* pol., IFU-02

Visit www.olerup-ssp.com for
“Instructions for Use” (IFU)

Lot No.: **44V**

Lot-specific information

Olerup SSP[®] HLA-A low resolution

Product number:	101.401-48/12 – including <i>Taq</i> polymerase 101.401-48u/12u – without <i>Taq</i> polymerase
Lot number:	44V
Expiry date:	2016-September-01
Number of tests:	48 tests – Product No. 101.401-48/48u 12 tests – Product No. 101.401-12/12u
Number of wells per test:	31 +1
Storage - pre-aliquoted primers:	dark at -20°C
- PCR Master Mix:	-20°C
- Adhesive PCR seals	RT
- Product Insert	RT

This Product Description is only valid for Lot No. 44V.

Complete product documentation consists of generic Instructions for Use (IFU), lot specific Product Insert, Worksheet and Certificate.

CHANGES COMPARED TO THE PREVIOUS OLERUP SSP[®] HLA-A LOW RESOLUTION LOT (71R)

The Lot-specific information for HLA A low resolution including and without *Taq* polymerase is now described in one common Product Insert.

A well containing Negative Control primer pairs has been added.

The format of the Product Insert and Worksheet have been changed.

The **HLA-A low resolution** specificity and interpretation tables have been updated for the HLA-A alleles described since the previous *Olerup SSP[®]* HLA-A low resolution lot was made (**Lot No. 71R**).

As of lot series V, the Specificity Table is included in the lot-specific Product Insert, and the Interpretation Table is included in the Worksheet.

101.401.48/12 – including *Taq* pol., IFU-01
101.401.48u/12u – without *Taq* pol., IFU-02

Visit www.olerup-ssp.com for
“Instructions for Use” (IFU)

Lot No.: **44V**

Lot-specific information

The primers of the wells detailed below have been exchanged, modified or added compared to the previous lot.

Well	5'-primer	3'-primer	rationale
5	-	Exchanged	3'-primer and control primer pair exchanged for improved resolution of HLA-specific PCR product and positive control.
12	-	Added	3'-primer added for the A*34:11 allele.
14	-	Exchanged	3'-primer exchanged for resolution of the A*29:48 allele.
15	Added	-	5'-primer added for the A*30:72 allele.
18	Added	-	5'-primer added for the A*33:51 allele.
19	New	New	New primer pair for the A*74 alleles.
21	Added	Added	Primer pair added for the A*23:57 allele.
27	-	Added	3'-primer added for increased yield of HLA-specific PCR product.
28	-	Added	3'-primer added for the A*11:155 allele.
30	Modified	Modified	5'-primer and 3'-primer modified for improved specificity of HLA-specific product.

Change in revision R01 compared to R00:

1. Primer mix 19 does not amplify the A*74:07 allele, and primer mix 11 does not amplify the A*31:03 and A*66:15 alleles. This has been corrected in the Specificity and Interpretation tables.

The A*32:01:14, 32:03, 32:38 and the A*74:07 alleles give rise to identical amplification patterns with this lot of the HLA-A low resolution primer set. These alleles can be separated by the respective high resolution primer sets.

101.401.48/12 – including *Taq* pol., IFU-01
101.401.48u/12u – without *Taq* pol., IFU-02

Visit www.olerup-ssp.com for
“Instructions for Use” (IFU)

Lot No.: **44V**

Lot-specific information

Well **32** contains Negative Control primer pairs, that will amplify more than 95% of the *Olerup SSP*® HLA Class I, DRB, DQB1 and DPB1 amplicons as well as amplicons generated by a control primer pair.

PCR product sizes range from 75 to 430 base pairs.
The PCR product generated by the control primer pair is 430 base pairs.

Length of PCR product	105	200	105	80	75	80
5'-primer¹	164	340	440	45	45	43
	5'-CAC ^{3'}	5'-Agg ^{3'}	5'-TTA ^{3'}	5'-Tgg ^{3'}	5'-Tgg ^{3'}	5'-Tgg ^{3'}
3'-primer²	231	2nd I	507	59	58	57
	5'-TgC ^{3'}	5'-AAA ^{3'}	5'-TTg ^{3'}	5'-CTC ^{3'}	5'-ggC ^{3'}	5'-CTC ^{3'}
A*	+	+	+			
B*	+	+	+			
C*	+	+	+			
DRB1				+	+	
DRB3				+	+	
DRB5				+		
DQB1					+	
DPB1						+

¹The nucleotide position for HLA class I genes and the codon for HLA class II genes, in the 2nd or 3rd exon, matching the specificity-determining 3'-end of the primer is given. Nucleotide and codon numbering as on the www.ebi.ac.uk/imgt/hla web site. The sequence of the 3 terminal nucleotides of the primer is given.

²The nucleotide position for HLA class I genes and the codon for HLA class II genes, in the 2nd or 3rd exon or the 2nd intron, matching the specificity-determining 3'-end of the primer is given in the anti-sense direction. Nucleotide and codon numbering as on the www.ebi.ac.uk/imgt/hla web site. The sequence of the 3 terminal nucleotides of the primer is given.

101.401.48/12 – including *Taq* pol., IFU-01
101.401.48u/12u – without *Taq* pol., IFU-02

Visit www.olerup-ssp.com for
“Instructions for Use” (IFU)

Lot No.: **44V**

Lot-specific information

PRODUCT DESCRIPTION

HLA-A low resolution

CONTENT

The primer set contains 5'- and 3'-primers for grouping the HLA-A*01:01 to A*80:03 alleles into the corresponding serological groups A1 to A80.

PLATE LAYOUT

Each test consists of 32 PCR reactions in a 32 well PCR plate.

1	2	3	4	5	6	7	8
9	10	11	12	13	14	15	16
17	18	19	20	21	22	23	24
25	26	27	28	29	30	31	NC

The 32 well PCR plate is marked with 'HLA-A low' in silver/gray ink.

Well No. 1 is marked with the Lot No. '44V'.

Wells 1 to 31 – HLA-A low resolution primers.

Well 32 – Negative Control.

A faint row of numbers is seen between wells 1 and 2 or wells 7 and 8 of the PCR trays. These stem from the manufacture of the trays, and should be disregarded.

The PCR plates are covered with a PCR-compatible foil.

Please note: When removing each 32 well PCR plate, make sure that the remaining plates stay covered. Use a scalpel or a similar instrument to carefully cut the foil between the plates.

INTERPRETATION

Only HLA-A alleles will be amplified by the 32 wells of the HLA-A low resolution primer set, except that a few HLA-B and HLA-C alleles will be amplified by primer mixes 5, 6 and 9.

For further details see Specificity Table.

UNIQUELY IDENTIFIED ALLELES

All the HLA-A alleles, i.e. **A*01:01 to A*80:03**, recognized by the HLA Nomenclature Committee in October 2013^{1,2} will be amplified by the primers in the HLA-A low resolution primer set. The HLA-A alleles will be grouped into their corresponding serological specificities.

The following HLA-A low alleles can be distinguished by the different sizes of the HLA-specific PCR product:

Alleles	Primer mix
A*23:14:01-23:14:02, 24:24, 24:71	5
A*24:14-24:15, 24:51-24:53, 24:57, 24:64, 24:94, 24:114, 24:138, 24:188, 24:222N, 24:228, C*04:01:03	5

¹HLA-A, HLA-B and HLA-C alleles listed on the IMGT/HLA web page 2013-October-11, release 3.14.0, www.ebi.ac.uk/imgt/hla.

101.401.48/12 – including *Taq* pol., IFU-01
101.401.48u/12u – without *Taq* pol., IFU-02

Visit www.olerup-ssp.com for
“Instructions for Use” (IFU)

Lot No.: 44V

Lot-specific information

²Alleles that have been deleted from or renamed in the official WHO HLA Nomenclature up to and including the last IMGT/HLA database release can be retrieved from web page <http://hla.alleles.org/alleles/deleted.html>.

101.401.48/12 – including *Taq* pol., IFU-01
101.401.48u/12u – without *Taq* pol., IFU-02

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“Instructions for Use” (IFU)

Lot No.: **44V**

Lot-specific information
SPECIFICITY TABLE

HLA-A low resolution primer set

Specificities and sizes of the PCR products of the 31+1 primer mixes used for HLA-A low resolution SSP typing

Primer Mix	Size of spec. PCR product ¹	Size of control band ²	HLA-A serology ³	Amplified HLA-A alleles ^{4,5}
1⁶	120 bp, 145 bp	800 bp	A1, A36	*01:01:01:01-01:01:31, 01:01:33-01:04N, 01:06-01:33, 01:35-01:68, 01:70-01:142, 36:01-36:05
2¹²	175 bp, 215 bp, 255 bp, 365 bp, 415 bp	800 bp	A2,A19, A28, A203, A210	*02:01:01:01-02:01:15, 02:01:17-02:01:19, 02:01:21-02:01:81, 02:01:83-02:22:02, 02:24:01-02:35:01, 02:35:03-02:47, 02:49-02:77, 02:78 ^W , 02:79:01-02:97:02, 02:99, 02:101:01-02:128, 02:130-02:454, 02:456
3⁷	235 bp	1070 bp	A3,A32/A3, A36	*03:01:01:01-03:01:29, 03:01:31-03:01:34, 03:01:36-03:04:03, 03:06-03:09, 03:11N-03:17:02, 03:19-03:39, 03:41, 03:43-03:74, 03:76-03:94, 03:96-03:97, 03:99-03:104, 03:106-03:121, 03:123:01-03:134, 03:136-03:166, 03:168N-03:175, 11:130, 32:04, 36:02
4	190 bp	800 bp	A1,A3,A11, A30, A36, A68	*01:01:01:01-01:01:22, 01:01:24-01:01:47, 01:01:49-01:04N, 01:06-01:07, 01:09-01:11N, 01:13, 01:16N-01:18N, 01:20-01:29, 01:31N-01:33, 01:35-01:78, 01:80-01:98, 01:100-01:142, 02:78, 02:169, 03:12, 03:18, 03:88, 03:135, 11:01:01-11:27, 11:29-11:52Q, 11:54-11:158, 26:19, 26:72, 30:08, 36:04, 68:13:01, 68:66, 74:19
5¹²	160 bp, 335 bp, 505 bp	1070 bp	A3, A9, A23, A24, A2403, A29, A31, A32	*03:15, 03:19, 03:30, 03:152, 11:139, 23:01:01-23:60, 24:02:01:01-24:11N, 24:13:01-24:15, 24:17-24:64, 24:66-24:210, 24:212-24:252N, 29:07, 29:49, 31:08, 31:29, 32:05, 33:19, 33:53, C*04:01:03
6^{8,14}	135 bp, 200 bp	800 bp	A9,A23, A24, A29, A80	*23:01:01-23:56, 23:58-23:60, 24:24, 24:71, 29:07, 29:49, 31:29, 80:01:01:01-80:03, B*18:27
7¹²	175 bp, 205 bp	1070 bp	A2, A9, A23, A24, A2403, A26, A33	*02:17:01 ^W -02:17:03 ^W , 11:139, 23:14:01-23:14:02, 24:02:01:01-24:11N, 24:13:01-24:13:02, 24:17-24:50, 24:54-24:56, 24:58-24:63, 24:66-24:91, 24:93, 24:95-24:113, 24:115-24:137, 24:139-24:187, 24:189-24:210, 24:212-24:221, 24:223-24:227, 24:229-24:252N, 26:16, 33:19, 68:45
8¹²	165 bp, 200 bp	800 bp	A2/A28, A3, A10, A11, A25, A26, A32, A34, A66, A68, A69	*01:51, 02:55, 03:24, 03:50, 11:10, 25:01:01-25:16, 25:18-25:23, 26:01:01-26:06, 26:08-26:15, 26:17-26:18, 26:20-26:43:02, 26:45-26:63, 26:65-26:71N, 26:73-26:88, 26:90-26:91, 26:93-26:94, 29:28, 32:15, 33:51, 34:01:01-34:11, 66:01:01-66:19, 68:01:01:01-68:106, 69:01-69:02
9^{6,9}	75 bp	800 bp	A25, A32	*25:01:01-25:23, 32:01:01-32:01:13, 32:01:15-32:02, 32:04, 32:06-32:37, 32:39-32:59, B*07:81, B*08:52, B*18:67, B*38:41, B*53:05, B*53:16

101.401.48/12 – including *Taq* pol., IFU-01
101.401.48u/12u – without *Taq* pol., IFU-02

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Lot No.: **44V**

Lot-specific information

10^{6,14}	80 bp, 240 bp	800 bp	A10, A26, A43	*01:43, 01:51, 11:17, 11:40, 26:01:01-26:02:02, 26:04, 26:07:01-26:20, 26:22-26:29, 26:31- 26:43:02, 26:45-26:77, 26:79-26:91, 26:93-26:94, 33:13, 33:48, 43:01, 68:84
11^{6,12}	80 bp, 175 bp, 500 bp	1070 bp	A1, A9, A11, A26, A31, A34, A66	*01:13, 01:28, 01:136, 03:63, 03:88, 11:01:01- 11:27, 11:29-11:52Q, 11:54-11:97, 11:99-11:158, 24:19, 24:44, 26:03:01-26:03:02, 26:06, 26:21, 26:78, 26:92, 34:01:01-34:08, 34:10N-34:11, 66:01:01, 66:04-66:11, 66:13-66:14, 66:17-66:19, 69:02, 80:02
12⁶	125 bp, 190 bp	800 bp	A3, A10, A25, A26, A31, A34, A43, A66	*02:309, 02:454, 03:01:19, 11:11, 25:05-25:06, 26:09, 26:54, 26:91, 31:03-31:04, 34:01:01-34:11, 43:01, 66:02-66:03, 66:16
13	175 bp, 225 bp	1070 bp	A1, A2, A3, A10, A25, A26, A34, A43, A66	*01:01:56 ^W , 01:13, 02:34-02:35:03, 02:56:01- 02:56:02, 02:62, 02:103, 02:135, 03:01:01:01- 03:01:22, 03:01:24-03:07, 03:09-03:11N, 03:13- 03:31, 03:33-03:35, 03:37-03:40, 03:42-03:56, 03:58, 03:60-03:71, 03:73-03:87, 03:90-03:106, 03:109-03:110, 03:112-03:141, 03:143-03:151, 03:153-03:171, 03:174-03:175, 25:01:01-25:05, 25:07-25:23, 26:01:01-26:01:20, 26:01:22- 26:01:29, 26:02:01 ^W , 26:03:01-26:03:02, 26:05- 26:08, 26:10-26:28, 26:29 ^W , 26:30-26:33, 26:35- 26:43:02, 26:45-26:48, 26:49 ^W , 26:50-26:72, 26:74-26:77, 26:79-26:90, 26:92-26:94, 30:55, 34:08, 43:01, 66:01:01, 66:04-66:09, 66:10 ^W , 66:11-66:15, 66:17-66:19, 68:71, 74:13
14^{6,14}	75 bp, 115 bp, 200 bp, 240 bp, 470 bp	1070 bp	A26, A29, A31, A34	*02:237, 02:309, 02:454, 03:95, 26:19, 26:22, 29:01:01:01-29:55, 31:03-31:04, 32:42, 34:04, 66:09
15^{6,12,13,15}	90 bp, 135 bp, 205 bp	1070 bp	A1, A30	*01:13, 01:28, 03:43, 03:82, 11:113, 30:01:01- 30:04:02, 30:06-30:20, 30:22-30:78N, 31:35
16	240 bp, 385 bp	1070 bp	A31, A32	*02:237, 03:95, 29:14, 31:01:02-31:79, 32:05, 33:53
17	140 bp, 180 bp	1070 bp	A32, A36, A74	*01:95, 03:43, 03:82, 24:243, 29:13, 29:39, 31:35, 32:01:01-32:03, 32:05-32:59, 74:07
18	200 bp, 390 bp	1070 bp	A32,A33, A68, A74	*02:243:01-02:243:02, 29:48, 32:15, 33:01:01- 33:01:07, 33:03:01-33:37, 33:39-33:52, 33:54- 33:74N, 68:29, 74:04
19	340 bp, 375 bp	800 bp	A2, A19, A68, A74	*01:121, 02:65, 02:407, 02:449, 68:25, 74:01- 74:06, 74:08-74:19
20¹⁴	210 bp, 240 bp	800 bp	A2, A25, A28, A68	*02:34-02:35:03, 02:46, 02:48, 02:56:01-02:56:02, 02:62, 02:70, 02:78, 02:103, 02:129, 25:05, 26:54, 68:01:01:01-68:106
21⁶	65 bp, 240 bp, 375 bp	800 bp	A2/A28, A26, A68, A69	*02:55, 02:149, 02:243:01-02:243:02, 02:309, 23:57, 24:82, 26:22, 31:41, 32:06, 33:22, 66:06, 66:09, 68:29, 68:105, 69:01-69:02
22^{6,11}	85 bp, 240 bp	800 bp	A2, A36	*02:34-02:35:03, 02:46, 02:48, 02:56:01-02:56:02, 02:62, 02:70, 02:78, 02:103, 02:129, 11:155, 31:62, 36:01-36:05

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101.401.48u/12u – without *Taq* pol., IFU-02

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Lot-specific information

23^{6,14}	75 bp, 160 bp, 240 bp, 495 bp	800 bp	A2/A28, A24/A3, A26, A36, A68, A80	*02:55, 03:41, 03:63, 03:75, 03:88, 11:130, 24:18, 24:204, 24:213, 26:03:01-26:03:02, 26:05-26:06, 26:21, 26:30, 26:78, 33:24, 36:02, 68:05, 68:15, 68:20, 80:01:01:01-80:01:01:02, 80:03
24	360 bp	1070 bp	A3, A10, A26, A31, A66	*02:135, 02:309, 02:454, 03:01:19, 25:13, 26:30, 26:65, 31:04, 34:09, 66:02-66:03, 66:12, 66:16
25	190 bp, 400 bp	1070 bp	A1, A29, A30, A31, A32, A33, A74	*29:01:01:01-29:29, 29:31-29:55, 30:01:01- 30:04:02, 30:06-30:11:02, 30:13-30:17, 30:19- 30:20, 30:22-30:30, 30:32-30:40, 30:42-30:54, 30:56-30:59N, 30:61-30:78N, 31:01:02-31:08, 31:10-31:27, 31:29-31:79, 32:01:01-32:23, 32:25- 32:48N, 32:50-32:59, 33:01:01-33:01:07, 33:03:01-33:37, 33:39-33:74N, 74:01-74:19
26	195 bp, 225 bp	800 bp	A1, A36, A43	*01:01:01:01-01:02, 01:04N, 01:07-01:11N, 01:13, 01:16N-01:18N, 01:21-01:33, 01:35-01:52N, 01:54-01:62, 01:64, 01:67-01:72, 01:74-01:97, 01:99-01:126, 01:128-01:129, 01:131-01:135, 01:137-01:142, 03:18, 03:135, 11:11, 11:94, 11:112, 36:04, 43:01
27¹³	205 bp	1070 bp	A1, A3, A11, A30, A31, A32, A34	*01:12, 01:19, 01:21, 01:126, 02:156, 02:338, 03:01:01:01-03:01:05, 03:01:07-03:01:13, 03:01:15-03:17:02, 03:19-03:49, 03:51-03:53, 03:55-03:63, 03:65, 03:67-03:74, 03:76-03:94, 03:96-03:126, 03:128-03:134, 03:136-03:139, 03:141-03:152, 03:154-03:164, 03:166-03:175, 11:03, 11:20, 11:25, 11:31, 11:35, 11:60, 11:158, 24:92, 30:04:01-30:04:02, 30:06, 30:09, 30:17, 30:29, 30:46, 30:77, 31:03-31:04, 32:04, 33:49, 34:02:01-34:04, 34:07-34:10N, 68:103
28^{6,13}	100 bp, 520 bp	1070 bp	A1, A2, A3, A9, A11, A23, A24, A29, A30, A66, A68, A69	*01:13, 01:17, 02:34-02:35:03, 02:56:01-02:56:02, 02:62, 02:78, 02:103, 03:01:01:01-03:07, 03:09- 03:28, 03:30-03:31, 03:33, 03:35, 03:37-03:40, 03:42-03:61, 03:64-03:87, 03:90-03:106, 03:109- 03:151, 03:153-03:171, 03:173-03:175, 11:12, 11:155, 23:13, 24:07, 24:24, 24:108, 24:112, 24:131, 29:01:01:01-29:18, 29:21-29:29, 29:31- 29:33, 29:35-29:47, 29:49-29:55, 30:01:01- 30:01:07, 30:08, 30:11:01-30:11:02, 30:14L-30:20, 30:23-30:26, 30:30, 30:35-30:43, 30:48-30:49, 30:52-30:56, 30:58-30:60, 30:62-30:63, 30:65, 30:71-30:75, 30:78N, 32:17, 34:09, 66:02, 66:12, 66:16, 68:01:01:01-68:01:17, 68:01:19-68:02:05, 68:06-68:14, 68:16-68:19, 68:21:01-68:30, 68:32- 68:39, 68:41-68:71, 68:73-68:84, 68:86-68:89, 68:91-68:92, 68:94N-68:96, 68:98-68:106, 69:01, 74:13
29¹⁵	260 bp	800 bp	A3, A11, A26, A30, A68, A74	*01:134, 03:09, 03:108, 03:172, 11:06, 11:18, 26:03:01-26:03:02, 26:06, 26:21, 26:30, 26:78, 26:92, 29:19, 29:48, 30:13, 30:16, 30:44, 30:46, 33:24, 68:05, 68:15, 68:20, 74:06
30¹⁰	180 bp	1070 bp	A10, A25, A26, A43, A66	*01:01:56, 02:135, 25:01:01-25:05, 25:07-25:17, 25:19-25:23, 26:01:01-26:01:20, 26:01:22- 26:03:02, 26:05-26:08, 26:10-26:33, 26:35- 26:43:02, 26:45-26:72, 26:74-26:77, 26:79-26:90, 26:92-26:94, 43:01, 66:01:01, 66:04-66:15,

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101.401.48u/12u – without *Taq* pol., IFU-02

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Lot-specific information

		66:17-66:19		
31 ⁶	110 bp, 195 bp	1070 bp	A34	*34:01:01-34:02:03, 34:04-34:05, 34:07-34:11
32 ¹⁶	-	-	-	Negative control

¹ Alleles are assigned by the presence of specific PCR product(s). However, the sizes of the specific PCR products may be helpful in the interpretation of HLA-A low resolution SSP typings.

When the primers in a primer mix can give rise to HLA-specific PCR products of more than one length this is indicated if the size difference is more than 20 base pairs. Size differences of 20 base pairs or less are not given. For high resolution SSP kits, the alleles listed are specified according to amplicon length.

Nonspecific amplifications, i.e. a ladder or a smear of bands, may sometimes be seen. GC-rich primers have a higher tendency of giving rise to nonspecific amplifications than other primers.

PCR fragments longer than the control bands may sometimes be observed. Such bands should be disregarded and do not influence the interpretation of the SSP typings.

PCR fragments migrating faster than the control bands, but slower than a 400 bp fragment may be seen in some gel read-outs. Such bands can be disregarded and do not influence the interpretation of the SSP typings. Some primers may give rise to primer oligomer artifacts. Sometimes this phenomenon is an inherent feature of the primer pair(s) of a primer mix. More often it is due to other factors such as too low amount of DNA in the PCR reactions, taking too long time in setting up the PCR reactions, working at elevated room temperature or using thermal cyclers that are not pre-heated.

²The internal positive control primer pairs amplify segments of the human growth hormone gene. The internal positive control bands are 1070 or 800 base pairs respectively, well distribution as outlined in the table. Well number 1 contains the shorter, 800 bp, internal positive control band. The well distribution of the internal controls can help in orientation of the kit on gel photo, as well as allow for kit identification. In the presence of a specific amplification the intensity of the control band often decreases.

³The serological reactivity of all HLA-A alleles is not known. In this table we use the expert-assigned serological grouping in Tissue Antigens (2009) 73:95-170 and the serological grouping of the sequence-defined allele.

⁴For several HLA Class I alleles 1st and/or 4th exon(s) and beyond, as well as intron nucleotide sequences, are not available. In these instances it is not known whether some of the primers of the SSP sets are completely matched with the target sequences or not. Assumption is made that unknown sequences in these regions are conserved within allelic groups.

⁵Only HLA-A alleles will be amplified by the 32 wells of the HLA-A low resolution primer set, except that a few HLA-B and HLA-C alleles will be amplified by primer mixes 5, 6 and 9.

⁶HLA-specific PCR products shorter than 125 base pairs have a lower intensity and are less sharp than longer PCR products.

⁷Primer mix 3 may faintly amplify the A*30:04:01-30:04:02, 30:06, 30:17 and 30:29 alleles.

⁸Primer mix 6 may give rise to a lower yield of A*23 alleles than the other A low primer mixes.

⁹Primer mix 9 may weakly amplify the A*34 alleles.

¹⁰Primer mix 30 may generate a false positive band of about 500 base pairs. This band should be disregarded when interpreting HLA-A low resolution typings.

¹¹Primer mix 22 might faintly amplify most A*11 alleles.

¹²The primer pairs in wells 2, 5, 7, 8, 11 and 15 will in many samples give rise to two or three HLA-specific PCR fragments.

¹³Primer mixes 15, 27 and 28 may give rise to a lower yield of HLA-specific PCR product than the other HLA-A low primer mixes.

¹⁴Primer mixes 6, 10, 14, 20 and 23 have a tendency to giving rise to primer oligomer formation.

¹⁵Primer mixes 15 and 29 may have tendencies of unspecific amplifications.

¹⁶Primer mix 32 contains a negative control, which will amplify more than 95% of HLA amplicons as well as the amplicons generated by control primer pairs. PCR product sizes range from 75 to 200 base pairs. The PCR product generated by the control primer pair is 430 base pairs.

'w', might be weakly amplified.

101.401.48/12 – including *Taq* pol., IFU-01
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Lot No.: **44V**

Lot-specific information

PRIMER SPECIFICATION

Well No.	1	2	3	4	5	6	7	8	9	10	11	12
Length of spec.	120	175	235	190	160	135	175	165	75	80	80	125
PCR product	145	215			335	200	205	200		240	175	190
		255			505						500	
		365										
		415										
Length of int.	800	800	1070	800	1070	800	1070	800	800	800	1070	800
pos. control ¹												
5'-primer(s) ²	98	48	363	98	144	176	98	98	261	98	301	103
	5'-CTT ^{3'}	5'-gCT ^{3'}	5'-ATA ^{3'}	5'-CTA ^{3'}	5'-gCC ^{3'}	5'-gCA ^{3'}	5'-CTC ^{3'}	5'-CTA ^{3'}	5'-AAC ^{3'}	5'-CTA ^{3'}	5'-Cgg ^{3'}	5'-CCT ^{3'}
	103	78		413	317	368	368	102	266	261	302	415
	5'-CCT ^{3'}	5'-TCT ^{3'}		5'-CCg ^{3'}	5'-gCT ^{3'}	5'-gTT ^{3'}	5'-gTT ^{3'}	5'-ACA ^{3'}	5'-ACg ^{3'}	5'-AAC ^{3'}	5'-ggA ^{3'}	5'-ggT ^{3'}
	123	106						413			385	423
	5'-AgT ^{3'}	5'-CCA ^{3'}						5'-CCg ^{3'}			5'-ggC ^{3'}	5'-gCT ^{3'}
3'-primer(s) ³	203	240	555	256	265	270	259	259	302	299	341	257
	5'-TCT ^{3'}	5'-ggA ^{3'}	5'-gCA ^{3'}	5'-CTg ^{3'}	5'-CCC ^{3'}	5'-ACA ^{3'}	5'-gTT ^{3'}	5'-gTT ^{3'}	5'-ggC ^{3'}	5'-TCg ^{3'}	5'-CgT ^{3'}	5'-gCA ^{3'}
		292	555	559	368	521	502	259			521	506
		5'-gTg ^{3'}	5'-CCA ^{3'}	5'-CCg ^{3'}	5'-CAA ^{3'}	5'-ggg ^{3'}	5'-CTT ^{3'}	5'-gTT ^{3'}			5'-ggg ^{3'}	5'-TgT ^{3'}
						534	539	538				559
						5'-CgT ^{3'}	5'-TCT ^{3'}	5'-CCA ^{3'}				5'-CTC ^{3'}
												559
												5'-CgT ^{3'}
												559
												5'-CgC ^{3'}
Well No.	1	2	3	4	5	6	7	8	9	10	11	12

Well No.	13	14	15	16	17	18	19	20	21	22	23	24
Length of spec.	175	75	90	240	140	200	340	210	65	85	75	360
PCR product	225	115	135	385	180	390	375	240	240	240	160	
		200	205						375		240	
		240									495	
		470										
Length of int.	1070	1070	1070	1070	1070	1070	800	800	800	800	800	1070
pos. control ¹												
5'-primer(s) ²	98	98	203	41	180	41	302	78	28	78	176	341
	5'-CTT ^{3'}	5'-CAC ^{3'}	5'-gAA ^{3'}	5'-CTT ^{3'}	5'-TTT ^{3'}	5'-CTT ^{3'}	5'-ggA ^{3'}	5'-TCT ^{3'}	5'-TCg ^{3'}	5'-TCT ^{3'}	5'-gCA ^{3'}	5'-ggC ^{3'}
	423	219	362	355	203	98	341	106	261	527	261	
	5'-gCT ^{3'}	5'-gCA ^{3'}	5'-ggT ^{3'}	5'-CCg ^{3'}	5'-gAA ^{3'}	5'-CAC ^{3'}	5'-ggA ^{3'}	5'-CCA ^{3'}	5'-AAC ^{3'}	5'-TgC ^{3'}	5'-AAC ^{3'}	
		238	363		418			2 nd I	502		341	
		5'-AgA ^{3'}	5'-ATA ^{3'}		5'-AgC ^{3'}			5'-CCT ^{3'}	5'-CCC ^{3'}		5'-ggA ^{3'}	
		355	363								355	
		5'-CCg ^{3'}	5'-ATA ^{3'}								5'-CCC ^{3'}	
			363									
			5'-ATA ^{3'}									
			369									
			5'-TAC ^{3'}									
3'-primer(s) ³	282	180	299	238	290	256	397	265	97	265	292	418
	5'-gAC ^{3'}	5'-TCA ^{3'}	5'-CCA ^{3'}	5'-CCT ^{3'}	5'-CAA ^{3'}	5'-CCC ^{3'}	5'-gAg ^{3'}	5'-CCC ^{3'}	5'-ggT ^{3'}	5'-CCC ^{3'}	5'-gTg ^{3'}	5'-gTC ^{3'}
	282	257	411	238	317	256		282	355	282	292	
	5'-gAC ^{3'}	5'-gCA ^{3'}	5'-TCA ^{3'}	5'-CCT ^{3'}	5'-ggA ^{3'}	5'-CTC ^{3'}		5'-gAC ^{3'}	5'-gAC ^{3'}	5'-gAC ^{3'}	5'-gTT ^{3'}	
	559	418	526	243	555	259		282	524	282	299	
	5'-CCC ^{3'}	5'-gTC ^{3'}	5'-CCA ^{3'}	5'-TCA ^{3'}	5'-CCA ^{3'}	5'-gTT ^{3'}		5'-gAC ^{3'}	5'-CAT ^{3'}	5'-gAC ^{3'}	5'-TCT ^{3'}	
	559	555		265				502		570	555	
	5'-CCg ^{3'}	5'-CCA ^{3'}		5'-CCC ^{3'}				5'-CTT ^{3'}		5'-CAC ^{3'}	5'-CCA ^{3'}	
				555				506				
				5'-CCA ^{3'}				5'-TgT ^{3'}				
Well No.	13	14	15	16	17	18	19	20	21	22	23	24

101.401.48/12 – including *Taq* pol., IFU-01
101.401.48u/12u – without *Taq* pol., IFU-02

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Lot-specific information

Well No.	25	26	27	28	29	30	31
Length of spec. PCR product	190	195	205	100	260	180	110
	400	225		520			195
Length of int. pos. control ¹	1070	800	1070	1070	800	1070	1070
5'-primer(s) ²	41	103	363	282	74	418	270
	5'-CTT 3'	5'-CCT 3'	5'-ATA 3'	5'-CAG 3'	5'-C 3'	5'-AgA 3'	5'-AAA 3'
	123	363		282	78	423	363
	5'-AgT 3'	5'-ATA 3'		5'-CAG 3'	5'-TCC 3'	5'-gCT 3'	5'-ATA 3'
3'-primer(s) ³	270	257	527	341	292	559	341
	5'-ACT 3'	5'-gCA 3'	5'-CCA 3'	5'-Cgg 3'	5'-gTg 3'	5'-CCg 3'	5'-CgT 3'
	270	545	527	521		559	517
	5'-ACA 3'	5'-AgA 3'	5'-CCT 3'	5'-ggA 3'		5'-CCg 3'	5'-CgT 3'
			527				
			5'-CCT 3'				
Well No.	25	26	27	28	29	30	31

¹The internal positive control primer pairs amplify segments of the human growth hormone gene. The internal positive control bands are 1070 or 800 base pairs respectively, well distribution as outlined in the table. Well number 1 contains the shorter, 800 bp, internal positive control band. The well distribution of the internal controls can help in orientation of the kit on gel photo, as well as allow for kit identification. In the presence of a specific amplification the intensity of the control band often decreases.

²The nucleotide position matching the specificity-determining 3'-end of the primer is given. Nucleotide numbering as on the www.ebi.ac.uk/imgt/hla web site. The sequence of the 3 terminal nucleotides of the primer is given.

³The nucleotide position matching the specificity-determining 3'-end of the primer is given in the anti-sense direction. Nucleotide numbering as on the www.ebi.ac.uk/imgt/hla web site. The sequence of the 3 terminal nucleotides of the primer is given.

101.401.48/12 – including *Taq* pol., IFU-01
101.401.48u/12u – without *Taq* pol., IFU-02

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Lot-specific information

CELL LINE VALIDATION SHEET																			
HLA-A low resolution primer set²																			
				Well															
				1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
			Lot No.:	201211701	201331802	201211703	201201904	201331805	201213306	201201907	201201908	201213309	201331810	201213311	201331812	201214913	201331814	201331815	201213316
	IHWC cell line ¹	A*	A*																
1	9001 SA	*24:02		-	-	-	-	+	-	+	-	-	-	-	-	-	-	-	-
2	9280 LK707	*02:01		-	+	-	-	-	-	-	-	-	-	-	-	-	-	-	-
3	9011 E4181324	*01:01		+	-	-	+	-	-	-	-	-	-	-	-	-	-	-	-
4	9275 GU373	*30:01		-	-	-	-	-	-	-	-	-	-	-	-	-	-	+	-
5	9009 KAS011	*01:01		+	-	-	+	-	-	-	-	-	-	-	-	-	-	-	-
6	9353 SM	*02:01	*26:03	-	+	-	-	-	-	-	+	-	-	+	-	+	-	-	-
7	9020 QBL	*26:01		-	-	-	-	-	-	-	+	-	+	-	-	+	-	-	-
8	9025 DEU	*31:01		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	+
9	9026 YAR	*26:01		-	-	-	-	-	-	-	+	-	+	-	-	+	-	-	-
10	9107 LKT3	*24:02		-	-	-	-	+	-	+	-	-	-	-	-	-	-	-	-
11	9051 PITOUT	*29:02		-	-	-	-	-	-	-	-	-	-	-	-	-	+	-	-
12	9052 DBB	*02:01		-	+	-	-	-	-	-	-	-	-	-	-	-	-	-	-
13	9004 JESTHOM	*02:01		-	+	-	-	-	-	-	-	-	-	-	-	-	-	-	-
14	9071 OLGA	*31:01		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	+
15	9075 DKB	*24:02		-	-	-	-	+	-	+	-	-	-	-	-	-	-	-	-
16	9037 SWEIG007	*29:02		-	-	-	-	-	-	-	-	-	-	-	-	-	+	-	-
17	9282 CTM3953540	*03:01	*80:01	-	-	+	-	-	+	-	-	-	-	-	-	+	-	-	-
18	9257 32367	*33:03	*74:01	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
19	9038 BM16	*02:01		-	+	-	-	-	-	-	-	-	-	-	-	-	-	-	-
20	9059 SLE005	*02:01		-	+	-	-	-	-	-	-	-	-	-	-	-	-	-	-
21	9064 AMALA	*02:17		-	+	-	-	-	-	W	-	-	-	-	-	-	-	-	-
22	9056 KOSE	*02:01		-	+	-	-	-	-	-	-	-	-	-	-	-	-	-	-
23	9124 IHL	*02:01	*34:01	-	+	-	-	-	-	-	+	-	-	+	+	-	-	-	-
24	9035 JBUSH	*32:01		-	-	-	-	-	-	-	-	+	-	-	-	-	-	-	-
25	9049 IBW9	*33:01		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
26	9285 WT49	*02:05		-	+	-	-	-	-	-	-	-	-	-	-	-	-	-	-
27	9191 CH1007	*24:10	*29:01	-	-	-	-	+	-	+	-	-	-	-	-	-	+	-	-
28	9320 BEL5GB	*02:01	*29:02	-	+	-	-	-	-	-	-	-	-	-	-	-	+	-	-
29	9050 MOU	*29:02		-	-	-	-	-	-	-	-	-	-	-	-	-	+	-	-
30	9021 RSH	*30:01	*68:02	-	-	-	-	-	-	-	+	-	-	-	-	-	-	+	-
31	9019 DUCAF	*30:02		-	-	-	-	-	-	-	-	-	-	-	-	-	-	+	-
32	9297 HAG	*02:01		-	+	-	-	-	-	-	-	-	-	-	-	-	-	-	-
33	9098 MT14B	*31:01		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	+
34	9104 DHIF	*31:01		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	+
35	9302 SSTO	*32:01		-	-	-	-	-	-	-	-	+	-	-	-	-	-	-	-
36	9024 KT17	*02:06	*11:01	-	+	-	+	-	-	-	-	-	-	+	-	-	-	-	-
37	9065 HHKB	*03:01		-	-	+	-	-	-	-	-	-	-	-	-	+	-	-	-
38	9099 LZL	*02:17		-	+	-	-	-	-	W	-	-	-	-	-	-	-	-	-
39	9315 CML	*01:01	*03:01	+	-	+	+	-	-	-	-	-	-	-	-	+	-	-	-
40	9134 WHONP199	*02:07	*30:01	-	+	-	-	-	-	-	-	-	-	-	-	-	-	+	-
41	9055 H0301	*03:01		-	-	+	-	-	-	-	-	-	-	-	-	+	-	-	-
42	9066 TAB089	*02:07		-	+	-	-	-	-	-	-	-	-	-	-	-	-	-	-
43	9076 T7526	*02:06	*02:07	-	+	-	-	-	-	-	-	-	-	-	-	-	-	-	-
44	9057 TEM	*66:01		-	-	-	-	-	-	-	+	-	-	+	-	+	-	-	-
45	9239 SHJO	*23:01	*24:02	-	-	-	-	+	+	+	-	-	-	-	-	-	-	-	-
46	9013 SCHU	*03:01		-	-	+	-	-	-	-	-	-	-	-	-	+	-	-	-
47	9045 TUBO	*02:16	*03:01	-	+	+	-	-	-	-	-	-	-	-	-	+	-	-	-
48	9303 TER-ND	*02:01	*11:01	-	+	-	+	-	-	-	-	-	-	+	-	-	-	-	-

101.401.48/12 – including *Taq* pol., IFU-01
101.401.48u/12u – without *Taq* pol., IFU-02

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“Instructions for Use” (IFU)

Lot No.: **44V**

Lot-specific information

CELL LINE VALIDATION SHEET																			
HLA-A low resolution primer set²																			
				Well															
				17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	
			Lot No.:	201201917	201331818	201331819	201201920	201331821	201201922	201201923	201214924	201211725	201191826	201331827	201331828	201211729	201331830	201191831	
	IHWC cell line¹	A*	A*																
1	9001 SA	*24:02		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
2	9280 LK707	*02:01		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
3	9011 E4181324	*01:01		-	-	-	-	-	-	-	-	-	+	-	-	-	-	-	
4	9275 GU373	*30:01		-	-	-	-	-	-	-	-	+	-	-	+	-	-	-	
5	9009 KAS011	*01:01		-	-	-	-	-	-	-	-	-	+	-	-	-	-	-	
6	9353 SM	*02:01	*26:03	-	-	-	-	-	-	+	-	-	-	-	-	+	+	-	
7	9020 QBL	*26:01		-	-	-	-	-	-	-	-	-	-	-	-	-	+	-	
8	9025 DEU	*31:01		-	-	-	-	-	-	-	-	+	-	-	-	-	-	-	
9	9026 YAR	*26:01		-	-	-	-	-	-	-	-	-	-	-	-	-	+	-	
10	9107 LKT3	*24:02		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
11	9051 PITOUT	*29:02		-	-	-	-	-	-	-	-	+	-	-	+	-	-	-	
12	9052 DBB	*02:01		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
13	9004 JESTHOM	*02:01		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
14	9071 OLGA	*31:01		-	-	-	-	-	-	-	-	+	-	-	-	-	-	-	
15	9075 DKB	*24:02		-	-	-	-	-	-	-	-	+	-	-	-	-	-	-	
16	9037 SWEIG007	*29:02		-	-	-	-	-	-	-	-	+	-	-	+	-	-	-	
17	9282 CTM3953540	*03:01	*80:01	-	-	-	-	-	+	-	-	-	+	+	-	-	-	-	
18	9257 32367	*33:03	*74:01	-	+	+	-	-	-	-	-	+	-	-	-	-	-	-	
19	9038 BM16	*02:01		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
20	9059 SLE005	*02:01		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
21	9064 AMALA	*02:17		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
22	9056 KOSE	*02:01		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
23	9124 IHL	*02:01	*34:01	-	-	-	-	-	-	-	-	-	-	-	-	-	-	+	
24	9035 JBUSH	*32:01		+	-	-	-	-	-	-	-	+	-	-	-	-	-	-	
25	9049 IBW9	*33:01		-	+	-	-	-	-	-	-	+	-	-	-	-	-	-	
26	9285 WT49	*02:05		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
27	9191 CH1007	*24:10	*29:01	-	-	-	-	-	-	-	-	+	-	-	+	-	-	-	
28	9320 BEL5GB	*02:01	*29:02	-	-	-	-	-	-	-	-	+	-	-	+	-	-	-	
29	9050 MOU	*29:02		-	-	-	-	-	-	-	-	+	-	-	+	-	-	-	
30	9021 RSH	*30:01	*68:02	-	-	-	+	-	-	-	-	+	-	-	+	-	-	-	
31	9019 DUCAF	*30:02		-	-	-	-	-	-	-	-	+	-	-	-	-	-	-	
32	9297 HAG	*02:01		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
33	9098 MT14B	*31:01		-	-	-	-	-	-	-	-	+	-	-	-	-	-	-	
34	9104 DHIF	*31:01		-	-	-	-	-	-	-	-	+	-	-	-	-	-	-	
35	9302 SSTO	*32:01		+	-	-	-	-	-	-	-	+	-	-	-	-	-	-	
36	9024 KT17	*02:06	*11:01	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
37	9065 HHKB	*03:01		-	-	-	-	-	-	-	-	-	-	+	+	-	-	-	
38	9099 LZL	*02:17		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
39	9315 CML	*01:01	*03:01	-	-	-	-	-	-	-	-	-	+	+	+	-	-	-	
40	9134 WHONP199	*02:07	*30:01	-	-	-	-	-	-	-	-	+	-	-	+	-	-	-	
41	9055 H0301	*03:01		-	-	-	-	-	-	-	-	-	-	+	+	-	-	-	
42	9066 TAB089	*02:07		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
43	9076 T7526	*02:06	*02:07	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
44	9057 TEM	*66:01		-	-	-	-	-	-	-	-	-	-	-	-	-	+	-	
45	9239 SHJO	*23:01	*24:02	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
46	9013 SCHU	*03:01		-	-	-	-	-	-	-	-	-	-	+	+	-	-	-	
47	9045 TUBO	*02:16	*03:01	-	-	-	-	-	-	-	-	-	-	+	+	-	-	-	
48	9303 TER-ND	*02:01	*11:01	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	

¹The provided cell line HLA specificities are retrieved from the <http://www.ihwg.org/hla> web site. The specificity of an individual cell line may thus be subject to change.

101.401.48/12 – including *Taq* pol., IFU-01
101.401.48u/12u – without *Taq* pol., IFU-02

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Lot No.: 44V

Lot-specific information

²The specificity of each primer solution in the kit has been tested against 48 well characterized cell line DNAs and where applicable, additional cell line DNAs.

Additional 5'- and 3'-primers in primer solutions 4, 5, 7, 8, 12, 14 to 17, 20 to 23 and 26 were tested by separately adding one 3'-primer, respectively one 5'-primer. Additional 5'-primers in primer solution 1 and 19 were tested by separately adding one 3'-primer. Additional 3'-primers in primer solutions 18 and 27 were tested by separately adding one 5'-primer.

In primer solutions 2, 11, 12, 15 and 29 one or two 5'-primers were not possible to test, and in primer solutions 3, 6, 8, 12, 13, 16 and 18 one 3'-primer was not possible to test.

101.401.48/12 – including *Taq* pol., IFU-01
101.401.48u/12u – without *Taq* pol., IFU-02

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Lot No.: **44V**

Lot-specific information

101.401.48/12 – including *Taq* pol., IFU-01
101.401.48u/12u – without *Taq* pol., IFU-02

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Lot No.: **44V**

Lot-specific information

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Web page: <http://www.olerup.com>

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For information on *Olerup* SSP distributors worldwide, contact **Olerup GmbH**.

101.403.48/12 – including *Taq* pol., IFU-01
 101.403.48u/12u – without *Taq* pol., IFU-02

Visit www.olerup-ssp.com for
 “Instructions for Use” (IFU)

Lot No.: **28V**

Lot-specific information

Olerup SSP[®] HLA-A low resolution screening

Product number:	101.403-48/12 – including <i>Taq</i> polymerase 101.403-48u/12u – without <i>Taq</i> polymerase
Lot number:	28V
Expiry date:	2016-July-01
Number of tests:	48 tests – Product No. 101.403-48/48u 12 tests – Product No. 101.403-12/12u
Number of wells per test:	23 +1
Storage - pre-aliquoted primers:	dark at -20°C
- PCR Master Mix:	-20°C
- Adhesive PCR seals	RT
- Product Insert	RT

This Product Description is only valid for Lot No. 28V.

Complete product documentation consists of generic Instructions for Use (IFU), lot specific Product Insert, Worksheet and Certificate.

**CHANGES COMPARED TO THE PREVIOUS OLERUP SSP[®]
 HLA-A LOW RESOLUTION SCREENING LOT (71N)**

The Lot-specific Information for HLA-A low resolution screening including and without *Taq* polymerase is described in one common Product Insert.

The format of the Product Insert and Worksheet have been changed.

The **HLA-A low resolution Screening** specificity and interpretation tables have been updated for the HLA-A alleles described since the previous *Olerup SSP[®]* HLA-A low resolution Screening lot was made (**Lot No. 71N**).

As of lot series V, the Specificity Table is included in the lot-specific Product Insert, and the Interpretation Table is included in the Worksheet.

101.403.48/12 – including *Taq* pol., IFU-01
 101.403.48u/12u – without *Taq* pol., IFU-02

Visit www.olerup-ssp.com for
 “Instructions for Use” (IFU)

Lot No.: **28V**

Lot-specific information

The primers of the wells detailed below have been exchanged, modified or added compared to the previous lot.

Well	5'-primer	3'-primer	rationale
2	Exchanged	-	5'-primer exchanged for improved specificity of primer pair.
3	-	Added	3'-primer added for the A*03:05:02 allele, 3'-primer added for the A*03:167 allele.
5	-	Exchanged	3'-primer and positive control primer pair exchanged for improved resolution of HLA-specific PCR product and positive control.
6	-	Exchanged	3'-primers exchanged for resolution of the A*23:14:02 and A*23:34 alleles.
9	Exchanged	-	Exchanged 5'-primer for the A*25:17 allele.
10	Added	-	5'-primer added for the A*26:72 allele, 5'-primer added for the A*26:76 allele, positive control primer pair exchanged.
12	Added	Added	5'-primer added for the A*34:10N allele, 3'-primer added for the A*34:11 allele.
13	-	Added	3'-primer added for the A*25:18 allele.
14	Added	Exchanged	5'-primer added for the A*29:37 allele, 3'-primer exchanged for resolution of the A*29:48 allele.
15	Added	-	5'-primer added for the A*30:72 allele.
16	-	Added	3'-primer added for the A*31:01:07 allele.
18	Added	-	5'-primer added for the A*33:51 allele.
19	Exchanged	Exchanged	Exchanged primer pair for the A*74 alleles.
21	Added	Added	Primer pair added for the A*23:57 allele.

Change in revision R01 compared to R00:

- Primer mix 19 does not amplify the A*74:07 allele, and primer mix 11 does not amplify the A*31:03 and A*66:15 alleles. This has been corrected in the Specificity and Interpretation tables.
 The A*32:01:14, 32:03, 32:38 and the A*74:07 alleles give rise to identical amplification patterns with this lot of the HLA-A low resolution screening primer set. These alleles can be separated by the respective high resolution primer sets.

101.403.48/12 – including *Taq* pol., IFU-01
 101.403.48u/12u – without *Taq* pol., IFU-02

Visit www.olerup-ssp.com for
 “Instructions for Use” (IFU)

Lot No.: **28V**

Lot-specific information

Well **24** contains Negative Control primer pairs, that will amplify more than 95% of the *Olerup SSP®* HLA Class I, DRB, DQB1 and DPB1 amplicons as well as amplicons generated by a control primer pair.

PCR product sizes range from 75 to 430 base pairs.
 The PCR product generated by the control primer pair is 430 base pairs.

Length of PCR product	105	200	105	80	75	80
5'-primer¹	164	340	440	45	45	43
	5'-CAC ^{3'}	5'-Agg ^{3'}	5'-TTA ^{3'}	5'-Tgg ^{3'}	5'-Tgg ^{3'}	5'-Tgg ^{3'}
3'-primer²	231	2nd I	507	59	58	57
	5'-TgC ^{3'}	5'-AAA ^{3'}	5'-TTg ^{3'}	5'-CTC ^{3'}	5'-ggC ^{3'}	5'-CTC ^{3'}
A*	+	+	+			
B*	+	+	+			
C*	+	+	+			
DRB1				+	+	
DRB3				+	+	
DRB5				+		
DQB1					+	
DPB1						+

¹The nucleotide position for HLA class I genes and the codon for HLA class II genes, in the 2nd or 3rd exon, matching the specificity-determining 3'-end of the primer is given. Nucleotide and codon numbering as on the www.ebi.ac.uk/imgt/hla web site. The sequence of the 3 terminal nucleotides of the primer is given.

²The nucleotide position for HLA class I genes and the codon for HLA class II genes, in the 2nd or 3rd exon or the 2nd intron, matching the specificity-determining 3'-end of the primer is given in the anti-sense direction. Nucleotide and codon numbering as on the www.ebi.ac.uk/imgt/hla web site. The sequence of the 3 terminal nucleotides of the primer is given.

101.403.48/12 – including *Taq* pol., IFU-01
 101.403.48u/12u – without *Taq* pol., IFU-02

Visit www.olerup-ssp.com for
 “Instructions for Use” (IFU)

Lot No.: **28V**

Lot-specific information

PRODUCT DESCRIPTION

HLA-A low resolution screening

CONTENT

The primer set contains 5'- and 3'-primers for grouping the HLA-A*01:01 to A*80:03 alleles into the corresponding serological groups A1 to A80.

PLATE LAYOUT

Each test consists of 24 PCR reactions in a 24 well PCR plate.

1	2	3	4	5	6	7	8
9	10	11	12	13	14	15	16
17	18	19	20	21	22	23	NC

The 24 well PCR plate is marked with ‘HLA-A low screening’ in silver/gray ink.

Well No. 1 is marked with the Lot No. ‘28V’.

Wells 1 to 23 – HLA-A low resolution screening primers.

Well 24 – Negative Control.

A faint row of numbers is seen between wells 1 and 2 or wells 7 and 8 of the PCR trays. These stem from the manufacture of the trays, and should be disregarded.

The PCR plates are covered with a PCR-compatible foil.

Please note: When removing each 24 well PCR plate, make sure that the remaining plates stay covered. Use a scalpel or a similar instrument to carefully cut the foil between the plates.

INTERPRETATION

Only HLA-A alleles will be amplified by the 24 wells of the HLA-A low resolution screening primer set, except that a few HLA-B and HLA-C alleles will be amplified by primer mixes 5, 6 and 9.

For further details see Specificity Table.

UNIQUELY IDENTIFIED ALLELES

All the HLA-A alleles, i.e. **A*01:01 to A*80:03**, recognized by the HLA Nomenclature Committee in October 2013^{1,2} will be amplified by the primers in the HLA-A low resolution screening primer set. The HLA-A alleles will be grouped into their corresponding serological specificities³.

The following HLA-A low alleles can be distinguished by the different sizes of the HLA-specific PCR product:

Alleles	Primer mix
A*01:136, 11:94, 11:112	11
A*03:88, 11:130	11
A*03:152, 24:92	5
A*23:14:01-23:14:02, 24:24, 24:71	5
A*24:14-24:15, 24:51-24:53, 24:57, 24:64, 24:94, 24:114, 24:138, 24:188, 24:222N, 24:228, C*04:01:03	5

101.403.48/12 – including *Taq* pol., IFU-01
101.403.48u/12u – without *Taq* pol., IFU-02

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Lot No.: **28V**

Lot-specific information

¹HLA-A, HLA-B and HLA-C alleles listed on the IMGT/HLA web page 2013-October-11, release 3.14.0, www.ebi.ac.uk/imgt/hla.

²Alleles that have been deleted from or renamed in the official WHO HLA Nomenclature up to and including the last IMGT/HLA database release can be retrieved from web page <http://hla.alleles.org/alleles/deleted.html>.

³The A*32:01:14, 32:03, 32:38 and the A*74:07 alleles give rise to identical amplification patterns with this lot of the HLA-A low resolution primer set. These alleles can be separated by the respective high resolution primer sets.

101.403.48/12 – including *Taq* pol., IFU-01
 101.403.48u/12u – without *Taq* pol., IFU-02

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Lot No.: **28V**

Lot-specific information
SPECIFICITY TABLE

HLA-A low resolution screening primer set

Specificities and sizes of the PCR products of the 23+1 primer mixes used for HLA-A low resolution screening SSP typing

Primer Mix	Size of spec. PCR product ¹	Size of control band ²	HLA-A serology ³	Amplified HLA-A alleles ^{4,5}
1^{6,7}	120 bp, 145 bp, 225 bp	800 bp	A1, A36	*01:01:01:01-01:04N, 01:06-01:33, 01:35-01:142, 03:18, 03:135, 11:94, 11:112, 36:01-36:05
2⁷	175 bp, 215 bp, 255 bp, 365 bp, 415 bp	800 bp	A2, A203, A210, A19, A28	*02:01:01:01-02:01:15, 02:01:17-02:01:19, 02:01:21-02:01:81, 02:01:83-02:22:02, 02:24:01-02:35:01, 02:35:03-02:47, 02:49-02:77, 02:78 ^w , 02:79:01-02:97:02, 02:99, 02:101:01-02:128, 02:130-02:454, 02:456
3⁸	205 bp, 235 bp	1070 bp	A1, A3, A11, A32, A34, A36	*01:12, 01:19, 01:21, 01:126, 02:338, 03:01:01:01-03:17:02, 03:19-03:74, 03:76-03:94, 03:96-03:134, 03:136-03:175, 11:03, 11:20, 11:25, 11:60, 11:130, 11:158, 24:92, 32:04, 34:02:01-34:04, 34:07-34:10N, 36:02
4	190 bp	800 bp	A1, A2, A3, A11, A26, A30, A36	*01:01:01:01-01:01:22, 01:01:24-01:01:47, 01:01:49-01:04N, 01:06-01:07, 01:09-01:11N, 01:13, 01:16N-01:18N, 01:20-01:29, 01:31N-01:33, 01:35-01:78, 01:80-01:98, 01:100-01:142, 02:78, 02:169, 03:12, 03:18, 03:88, 03:135, 11:01:01-11:27, 11:29-11:52Q, 11:54-11:158, 26:19, 26:72, 30:08, 36:04, 68:13:01, 68:66, 74:19
5⁷	160 bp, 335 bp, 505 bp	1070 bp	A3, A9, A23, A24, A2403, A29, A31, A32	*03:15, 03:19, 03:30, 03:152, 11:139, 23:01:01-23:60, 24:02:01:01-24:11N, 24:13:01-24:15, 24:17-24:64, 24:66-24:210, 24:212-24:252N, 29:07, 29:49, 31:08, 31:29, 32:05, 33:19, 33:53, C*04:01:03
6^{9,11}	135 bp, 200 bp	800 bp	A9, A23, A24, A29, A80	*23:01:01-23:56, 23:58-23:60, 24:24, 24:71, 29:07, 29:49, 31:29, 80:01:01:01-80:03, B*18:27
7	175 bp, 205 bp	1070 bp	A2, A23, A24, A26, A33	*02:17:01 ^w -02:17:02 ^w , 11:139, 23:14:01-23:14:02, 24:02:01:01-24:11N, 24:13:01-24:13:02, 24:17-24:50, 24:54-24:56, 24:58-24:63, 24:66-24:91, 24:93, 24:95-24:113, 24:115-24:137, 24:139-24:187, 24:189-24:210, 24:212-24:221, 24:223-24:227, 24:229-24:252N, 26:16, 33:19, 68:45
8	165 bp, 200 bp	800 bp	A2, A3, A10, A11, A25, A26, A28,A32, A34, A66, A68, A69	*01:51, 02:55, 03:24, 03:50, 11:10, 25:01:01-25:16, 25:18-25:23, 26:01:01-26:06, 26:08-26:15, 26:17-26:18, 26:20-26:43:02, 26:45-26:63, 26:65-26:71N, 26:73-26:88, 26:90-26:91, 26:93-26:94, 29:28, 32:15, 33:51, 34:01:01-34:11, 66:01:01-66:19, 68:01:01-68:106, 69:01-69:02
9^{6,10}	75 bp	800 bp	A3, A25, A32	*25:01:01-25:23, 32:01:01-32:01:13, 32:01:15-32:02, 32:04, 32:06-32:37, 32:39-32:59, B*07:81, B*08:52, B*18:67, B*38:41, B*53:05, B*53:16

101.403.48/12 – including *Taq* pol., IFU-01
 101.403.48u/12u – without *Taq* pol., IFU-02

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Lot-specific information

10 ^{6,7,11}	80 bp, 240 bp	800 bp	A10, A26, A43	*01:43, 01:51, 11:17, 11:40, 26:01:01-26:02:02, 26:04, 26:07:01-26:20, 26:22-26:29, 26:31-26:43:02, 26:45-26:77, 26:79-26:91, 26:93-26:94, 33:13, 33:48, 43:01, 68:84
11 ^{6,7}	80 bp, 175 bp, 500 bp	1070 bp	A1, A11, A24, A26, A31, A34, A66	*01:13, 01:28, 01:136, 03:63, 03:88, 11:01:01-11:27, 11:29-11:52Q, 11:54-11:158, 24:19, 24:44, 26:03:01- 26:03:02, 26:06, 26:21, 26:78, 26:92, 34:01:01-34:08, 34:10N-34:11, 66:01:01, 66:04-66:11, 66:13-66:14, 66:17-66:19, 69:02, 80:02
12 ⁶	125 bp, 190 bp	800 bp	A3, A10, A25, A26, A31, A34, A43, A66	*02:309, 02:454, 03:01:19, 11:11, 25:05-25:06, 26:09, 26:54, 26:91, 31:03-31:04, 34:01:01-34:11, 43:01, 66:02-66:03, 66:16
13	175 bp, 225 bp	1070 bp	A1, A2, A3, A10, A25, A26, A34, A43, A66	*01:01:56 ^w , 01:13, 02:34-02:35:03, 02:56:01- 02:56:02, 02:62, 02:103, 02:135, 03:01:01:01- 03:01:22, 03:01:24-03:07, 03:09-03:11N, 03:13- 03:31, 03:33-03:35, 03:37-03:40, 03:42-03:56, 03:58, 03:60-03:71, 03:73-03:87, 03:90-03:106, 03:109- 03:110, 03:112-03:141, 03:143-03:151, 03:153- 03:171, 03:174-03:175, 25:01:01-25:05, 25:07-25:23, 26:01:01-26:01:20, 26:01:22-26:01:29, 26:02:01 ^w , 26:03:01-26:03:02, 26:05-26:08, 26:10-26:28, 26:29 ^w , 26:30-26:33, 26:35-26:43:02, 26:45-26:48, 26:49 ^w , 26:50-26:72, 26:74-26:77, 26:79-26:90, 26:92-26:94, 30:55, 34:08, 43:01, 66:01:01, 66:04-66:09, 66:10 ^w , 66:11-66:15, 66:17-66:19, 68:71, 74:13
14 ^{6,7,11}	80 bp 115 bp, 200 bp, 240 bp 470 bp	1070 bp	A26, A29, A31, A34	*02:237, 02:309, 02:454, 03:95, 26:19, 26:22, 29:01:01:01-29:55, 31:03-31:04, 32:42, 34:04, 66:09
15 ^{6,7,13,14}	90 bp, 135 bp, 205 bp	1070 bp	A1, A30	*01:13, 01:28, 03:43, 03:82, 11:113, 30:01:01- 30:04:02, 30:06-30:20, 30:22-30:78N, 31:35
16	240 bp, 380 bp	1070 bp	A24, A31, A32	*02:237, 03:95, 29:14, 31:01:02-31:79, 32:05, 33:53
17	140 bp, 180 bp	1070 bp	A29, A32, A74	*01:95, 03:43, 03:82, 24:243, 29:13, 29:39, 31:35, 32:01:01-32:03, 32:05-32:59, 74:07
18	200 bp, 390 bp	1070 bp	A,32,A33, A68, A74	*02:243:01-02:243:02, 29:48, 32:15, 33:01:01- 33:01:07, 33:03:01-33:37, 33:39-33:52, 33:54- 33:74N, 68:29, 74:04
19	340 bp, 375 bp	800 bp	A2, A19, A68, A74	*01:121, 02:65, 02:407, 02:449, 68:25, 74:01-74:06, 74:08-74:19
20 ¹¹	210 bp, 240 bp	800 bp	A2, A210, A25, A28, A68	*02:34-02:35:03, 02:46, 02:48, 02:56:01-02:56:02, 02:62, 02:70, 02:78, 02:103, 02:129, 25:05, 26:54, 68:01:01:01-68:106
21	240 bp, 375 bp	800 bp	A2, A26, A28, A32, A66, A68, A69	*02:55, 02:149, 02:243:01-02:243:02, 02:309, 23:57, 24:82, 26:22, 31:41, 32:06, 33:22, 66:06, 66:09, 68:29, 68:105, 69:01-69:02
22 ^{6,12}	85 bp, 240 bp	800 bp	A2, A36	*02:34-02:35:03, 02:46, 02:48, 02:56:01-02:56:02, 02:62, 02:70, 02:78, 02:103, 02:129, 11:155, 31:62, 36:01-36:05
23 ^{6,11}	75 bp, 160 bp,	800 bp	A2, A26, A68, A80	*02:55, 03:41, 03:63, 03:75, 03:88, 11:130, 24:18, 24:204, 24:213, 26:03:01-26:03:02, 26:05-26:06,

101.403.48/12 – including *Taq* pol., IFU-01
 101.403.48u/12u – without *Taq* pol., IFU-02

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Lot No.: **28V**

Lot-specific information

	240 bp, 495 bp			26:21, 26:30, 26:78, 33:24, 36:02, 68:05, 68:15, 68:20, 80:01:01:01-80:01:01:02, 80:03
24¹⁵	-	-	-	Negative control

¹Alleles are assigned by the presence of specific PCR product(s). However, the sizes of the specific PCR products may be helpful in the interpretation of HLA-A low resolution screening SSP typings.

When the primers in a primer mix can give rise to HLA-specific PCR products of more than one length this is indicated if the size difference is more than 20 base pairs. Size differences of 20 base pairs or less are not given. For high resolution SSP kits, the alleles listed are specified according to amplicon length.

Nonspecific amplifications, i.e. a ladder or a smear of bands, may sometimes be seen. GC-rich primers have a higher tendency of giving rise to nonspecific amplifications than other primers.

PCR fragments longer than the control bands may sometimes be observed. Such bands should be disregarded and do not influence the interpretation of the SSP typings.

PCR fragments migrating faster than the control bands, but slower than a 400 bp fragment may be seen in some gel read-outs. Such bands can be disregarded and do not influence the interpretation of the SSP typings.

Some primers may give rise to primer oligomer artifacts. Sometimes this phenomenon is an inherent feature of the primer pair(s) of a primer mix. More often it is due to other factors such as too low amount of DNA in the PCR reactions, taking too long time in setting up the PCR reactions, working at elevated room temperature or using thermal cyclers that are not pre-heated.

²The internal positive control primer pairs amplify segments of the human growth hormone gene. The internal positive control bands are 1070 or 800 base pairs respectively, well distribution as outlined in the table. Well number 1 contains the shorter, 800 bp, internal positive control band. The well distribution of the internal controls can help in orientation of the kit on gel photo, as well as allow for kit identification. In the presence of a specific amplification the intensity of the control band often decreases.

³The serological reactivity of all HLA-A alleles is not known. In this table we use the expert-assigned serological grouping in Tissue Antigens (2009) 73:95-170 and the serological grouping of the sequence-defined allele.

⁴For several HLA Class I alleles 1st and/or 4th exon(s) and beyond, as well as intron nucleotide sequences, are not available. In these instances it is not known whether some of the primers of the SSP sets are completely matched with the target sequences or not. Assumption is made that unknown sequences in these regions are conserved within allelic groups.

⁵Due to the sharing of sequence motifs between HLA-C alleles, non-HLA-A alleles will be amplified by primer mixes 5, 6 and 9

⁶HLA-specific PCR products shorter than 125 base pairs have a lower intensity and are less sharp than longer PCR products.

⁷The primer pairs in wells 1, 2, 10, 11, 14 and 15 will in many samples give rise to two or three HLA-specific PCR fragments.

⁸Primer mix 3 may faintly amplify the A*30:04:01-30:04:02, 30:06, 30:17 and 30:29 alleles.

⁹Primer mix 6 may give rise to a lower yield of A*23 alleles than the other A low primer mixes.

¹⁰Primer mix 9 may weakly amplify the A*34 alleles.

¹¹Primer mixes 6, 10, 14, 20 and 23 have a tendency to giving rise to primer oligomer formation.

¹²Primer mix 22 might faintly amplify most A*11 alleles.

¹³Primer mix 15 may give rise to a lower yield of HLA-specific PCR product than the other HLA-A low primer mixes.

¹⁴Primer mix 15 may have tendency of unspecific amplification.

¹⁵Primer mix 24 contains a negative control, which will amplify more than 95% of HLA amplicons as well as the amplicons generated by control primer pairs. PCR product sizes range from 75 to 200 base pairs. The PCR product generated by the control primer pair is 430 base pairs.

'w', might be weakly amplified.

101.403.48/12 – including *Taq* pol., IFU-01
 101.403.48u/12u – without *Taq* pol., IFU-02

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Lot No.: **28V**

Lot-specific information

PRIMER SPECIFICATION

Well No.	1	2	3	4	5	6	7	8	9	10	11	12
Length of spec.	120	175	205	190	160	135	175	165	75	80	80	125
PCR product	145	215	235		335	200	205	200		240	175	190
		225	255		505						500	
		365										
		415										
Length of int. pos. control ¹	800	800	1070	800	1070	800	1070	800	800	800	1070	800
5'-primer(s) ²	98 5'-CTT 3'	48 5'-gCT 3'	363 5'-ATA 3'	98 5'-CTA 3'	144 5'-gCC 3'	176 5'-gCA 3'	98 5'-CTC 3'	98 5'-CTA 3'	261 5'-AAC 3'	98 5'-CTA 3'	301 5'-Cgg 3'	103 5'-CCT 3'
	103 5'-CCT 3'	78 5'-TCT 3'		413 5'-CCg 3'	317 5'-gCT 3'	368 5'-gTT 3'	368 5'-gTT 3'	102 5'-ACA 3'	266 5'-ACg 3'	261 5'-AAC 3'	302 5'-ggA 3'	415 5'-ggT 3'
	123 5'-AgT 3'	106 5'-CCA 3'						413 5'-CCg 3'			385 5'-ggC 3'	423 5'-gCT 3'
	363 5'-ATA 3'											
3'-primer(s) ³	203 5'-TCT 3'	240 5'-ggA 3'	527 5'-CCA 3'	256 5'-CTg 3'	265 5'-CCC 3'	270 5'-ACA 3'	259 5'-gTT 3'	259 5'-gTT 3'	302 5'-ggC 3'	299 5'-TCg 3'	341 5'-CgT 3'	257 5'-gCA 3'
	545 5'-AgA 3'	292 5'-gTg 3'	527 5'-CCT 3'	559 5'-CCg 3'	368 5'-CAA 3'	521 5'-ggg 3'	502 5'-CTT 3'	259 5'-gTT 3'			521 5'-ggg 3'	506 5'-TgT 3'
			527 5'-CCT 3'			534 5'-CgT 3'	539 5'-TCT 3'	538 5'-CCA 3'				559 5'-CTC 3'
			555 5'-CCA 3'									559 5'-CgT 3'
			555 5'-gCA 3'									559 5'-CgC 3'
Well No.	1	2	3	4	5	6	7	8	9	10	11	12

Well No.	13	14	15	16	17	18	19	20	21	22	23
Length of spec.	175	80	90	240	140	200	340	210	240	85	75
PCR product	225	115	135	380	180	390	375	240	375	240	160
		200	205								240
		240									495
		470									
Length of int. pos. control ¹	1070	1070	1070	1070	1070	1070	800	800	800	800	800
5'-primer(s) ²	98 5'-CTT 3'	98 5'-CAC 3'	203 5'-gAA 3'	41 5'-CTT 3'	180 5'-TTT 3'	41 5'-CTT 3'	302 5'-ggA 3'	78 5'-TCT 3'	28 5'-TCg 3'	78 5'-TCT 3'	176 5'-gCA 3'
	423 5'-gCT 3'	219 5'-gCA 3'	362 5'-ggT 3'	355 5'-CCg 3'	203 5'-gAA 3'	98 5'-CAC 3'	341 5'-ggA 3'	106 5'-CCA 3'	261 5'-AAC 3'	527 5'-TgC 3'	261 5'-AAC 3'
		238 5'-AgA 3'	363 5'-ATA 3'		418 5'-AgC 3'			2 nd I 5'-CCT 3'	502 5'-CCC 3'		341 5'-ggA 3'
		355 5'-CCg 3'	363 5'-ATA 3'								355 5'-CCC 3'
			363 5'-ATA 3'								
			369 5'-TAC 3'								
3'-primer(s) ³	282 5'-gAC 3'	180 5'-TCA 3'	299 5'-CCA 3'	238 5'-CCT 3'	290 5'-CAA 3'	256 5'-CCC 3'	397 5'-gAg 3'	265 5'-CCC 3'	97 5'-ggT 3'	265 5'-CCC 3'	292 5'-gTg 3'
	282 5'-gAC 3'	257 5'-gCA 3'	411 5'-TCA 3'	238 5'-CCT 3'	317 5'-ggA 3'	256 5'-CTC 3'		282 5'-gAC 3'	355 5'-gAC 3'	282 5'-gAC 3'	292 5'-gTT 3'
	559 5'-CCC 3'	418 5'-gTC 3'	526 5'-CCA 3'	243 5'-TCA 3'	555 5'-CCA 3'	259 5'-gTT 3'		282 5'-gAC 3'	524 5'-CAT 3'	282 5'-gAC 3'	299 5'-TCT 3'
	559 5'-CCg 3'	555 5'-CCA 3'		265 5'-CCC 3'				502 5'-CTT 3'		570 5'-CAC 3'	555 5'-CCA 3'
				555 5'-CCA 3'				506 5'-TgT 3'			
Well No.	13	14	15	16	17	18	19	20	21	22	23

101.403.48/12 – including *Taq* pol., IFU-01
101.403.48u/12u – without *Taq* pol., IFU-02

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Lot No.: **28V**

Lot-specific information

¹The internal positive control primer pairs amplify segments of the human growth hormone gene. The internal positive control bands are 1070 or 800 base pairs respectively, well distribution as outlined in the table. Well number 1 contains the shorter, 800 bp, internal positive control band. The well distribution of the internal controls can help in orientation of the kit on gel photo, as well as allow for kit identification. In the presence of a specific amplification the intensity of the control band often decreases.

²The nucleotide position matching the specificity-determining 3'-end of the primer is given. Nucleotide numbering as on the www.ebi.ac.uk/imgt/hla web site. The sequence of the 3 terminal nucleotides of the primer is given.

³The nucleotide position matching the specificity-determining 3'-end of the primer is given in the anti-sense direction. Nucleotide numbering as on the www.ebi.ac.uk/imgt/hla web site. The sequence of the 3 terminal nucleotides of the primer is given.

101.403.48/12 – including *Taq* pol., IFU-01
 101.403.48u/12u – without *Taq* pol., IFU-02

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Lot No.: 28V

Lot-specific information

CELL LINE VALIDATION SHEET																			
HLA-A low resolution screening primer set²																			
			Lot No.:	Well															
				1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
				201321701	201211702	201326503	201211704	201326505	201211706	201211707	201211708	201211709	201211710	201211711	201322012	201211713	201321714	201321715	201211716
	IHWC cell line ¹	A*	A*																
1	9001 SA	*24:02		-	-	-	-	+	-	+	-	-	-	-	-	-	-	-	-
2	9280 LK707	*02:01		-	+	-	-	-	-	-	-	-	-	-	-	-	-	-	-
3	9011 E4181324	*01:01		+	-	-	+	-	-	-	-	-	-	-	-	-	-	-	-
4	9275 GU373	*30:01		-	-	-	-	-	-	-	-	-	-	-	-	-	-	+	-
5	9009 KAS011	*01:01		+	-	-	+	-	-	-	-	-	-	-	-	-	-	-	-
6	9353 SM	*02:01	*26:03	-	+	-	-	-	-	-	+	-	-	+	-	+	-	-	-
7	9020 QBL	*26:01		-	-	-	-	-	-	-	+	-	+	-	-	+	-	-	-
8	9025 DEU	*31:01		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	+
9	9026 YAR	*26:01		-	-	-	-	-	-	-	+	-	+	-	-	+	-	-	-
10	9107 LKT3	*24:02		-	-	-	-	+	-	+	-	-	-	-	-	-	-	-	-
11	9051 PITOUT	*29:02		-	-	-	-	-	-	-	-	-	-	-	-	-	+	-	-
12	9052 DBB	*02:01		-	+	-	-	-	-	-	-	-	-	-	-	-	-	-	-
13	9004 JESTHOM	*02:01		-	+	-	-	-	-	-	-	-	-	-	-	-	-	-	-
14	9071 OLGA	*31:01		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	+
15	9075 DKB	*24:02		-	-	-	-	+	-	+	-	-	-	-	-	-	-	-	-
16	9037 SWEIG007	*29:02		-	-	-	-	-	-	-	-	-	-	-	-	-	+	-	-
17	9282 CTM3953540	*03:01	*80:01	-	-	+	-	-	+	-	-	-	-	-	-	+	-	-	-
18	9257 32367	*33:03	*74:01	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
19	9038 BM16	*02:01		-	+	-	-	-	-	-	-	-	-	-	-	-	-	-	-
20	9059 SLE005	*02:01		-	+	-	-	-	-	-	-	-	-	-	-	-	-	-	-
21	9064 AMALA	*02:17		-	+	-	-	-	-	W	-	-	-	-	-	-	-	-	-
22	9056 KOSE	*02:01		-	+	-	-	-	-	-	-	-	-	-	-	-	-	-	-
23	9124 IHL	*02:01	*34:01	-	+	-	-	-	-	-	+	-	-	+	+	-	-	-	-
24	9035 JBUSH	*32:01		-	-	-	-	-	-	-	-	+	-	-	-	-	-	-	-
25	9049 IBW9	*33:01		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
26	9285 WT49	*02:05		-	+	-	-	-	-	-	-	-	-	-	-	-	-	-	-
27	9191 CH1007	*24:10	*29:01	-	-	-	-	+	-	+	-	-	-	-	-	-	+	-	-
28	9320 BEL5GB	*02:01	*29:02	-	+	-	-	-	-	-	-	-	-	-	-	-	+	-	-
29	9050 MOU	*29:02		-	-	-	-	-	-	-	-	-	-	-	-	-	+	-	-
30	9021 RSH	*30:01	*68:02	-	-	-	-	-	-	-	+	-	-	-	-	-	-	+	-
31	9019 DUCAF	*30:02		-	-	-	-	-	-	-	-	-	-	-	-	-	-	+	-
32	9297 HAG	*02:01		-	+	-	-	-	-	-	-	-	-	-	-	-	-	-	-
33	9098 MT14B	*31:01		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	+
34	9104 DHIF	*31:01		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	+
35	9302 SSTO	*32:01		-	-	-	-	-	-	-	-	+	-	-	-	-	-	-	-
36	9024 KT17	*02:06	*11:01	-	+	-	+	-	-	-	-	-	-	+	-	-	-	-	-
37	9065 HHKB	*03:01		-	-	+	-	-	-	-	-	-	-	-	-	+	-	-	-
38	9099 LZL	*02:17		-	+	-	-	-	-	W	-	-	-	-	-	-	-	-	-
39	9315 CML	*01:01	*03:01	+	-	+	+	-	-	-	-	-	-	-	-	+	-	-	-
40	9134 WHONP199	*02:07	*30:01	-	+	-	-	-	-	-	-	-	-	-	-	-	-	+	-
41	9055 H0301	*03:01		-	-	+	-	-	-	-	-	-	-	-	-	+	-	-	-
42	9066 TAB089	*02:07		-	+	-	-	-	-	-	-	-	-	-	-	-	-	-	-
43	9076 T7526	*02:06	*02:07	-	+	-	-	-	-	-	-	-	-	-	-	-	-	-	-
44	9057 TEM	*66:01		-	-	-	-	-	-	-	+	-	-	+	-	+	-	-	-
45	9239 SHJO	*23:01	*24:02	-	-	-	-	+	+	+	-	-	-	-	-	-	-	-	-
46	9013 SCHU	*03:01		-	-	+	-	-	-	-	-	-	-	-	-	+	-	-	-
47	9045 TUBO	*02:16	*03:01	-	+	+	-	-	-	-	-	-	-	-	-	+	-	-	-
48	9303 TER-ND	*02:01	*11:01	-	+	-	+	-	-	-	-	-	-	+	-	-	-	-	-

101.403.48/12 – including *Taq* pol., IFU-01
 101.403.48u/12u – without *Taq* pol., IFU-02

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Lot No.: **28V**

Lot-specific information

CELL LINE VALIDATION SHEET										
HLA-A low resolution screening primer set ²										
				Well						
				17	18	19	20	21	22	23
				201211717	201321718	201321719	201211720	201321721	201211722	201211723
				Lot No.:						
	IHWC cell line ¹	A*	A*							
1	9001 SA	*24:02		-	-	-	-	-	-	-
2	9280 LK707	*02:01		-	-	-	-	-	-	-
3	9011 E4181324	*01:01		-	-	-	-	-	-	-
4	9275 GU373	*30:01		-	-	-	-	-	-	-
5	9009 KAS011	*01:01		-	-	-	-	-	-	-
6	9353 SM	*02:01	*26:03	-	-	-	-	-	-	+
7	9020 QBL	*26:01		-	-	-	-	-	-	-
8	9025 DEU	*31:01		-	-	-	-	-	-	-
9	9026 YAR	*26:01		-	-	-	-	-	-	-
10	9107 LKT3	*24:02		-	-	-	-	-	-	-
11	9051 PITOUT	*29:02		-	-	-	-	-	-	-
12	9052 DBB	*02:01		-	-	-	-	-	-	-
13	9004 JESTHOM	*02:01		-	-	-	-	-	-	-
14	9071 OLGA	*31:01		-	-	-	-	-	-	-
15	9075 DKB	*24:02		-	-	-	-	-	-	-
16	9037 SWEIG007	*29:02		-	-	-	-	-	-	-
17	9282 CTM3953540	*03:01	*80:01	-	-	-	-	-	-	+
18	9257 32367	*33:03	*74:01	-	+	+	-	-	-	-
19	9038 BM16	*02:01		-	-	-	-	-	-	-
20	9059 SLE005	*02:01		-	-	-	-	-	-	-
21	9064 AMALA	*02:17		-	-	-	-	-	-	-
22	9056 KOSE	*02:01		-	-	-	-	-	-	-
23	9124 IHL	*02:01	*34:01	-	-	-	-	-	-	-
24	9035 JBUSH	*32:01		+	-	-	-	-	-	-
25	9049 IBW9	*33:01		-	+	-	-	-	-	-
26	9285 WT49	*02:05		-	-	-	-	-	-	-
27	9191 CH1007	*24:10	*29:01	-	-	-	-	-	-	-
28	9320 BEL5GB	*02:01	*29:02	-	-	-	-	-	-	-
29	9050 MOU	*29:02		-	-	-	-	-	-	-
30	9021 RSH	*30:01	*68:02	-	-	-	+	-	-	-
31	9019 DUCAF	*30:02		-	-	-	-	-	-	-
32	9297 HAG	*02:01		-	-	-	-	-	-	-
33	9098 MT14B	*31:01		-	-	-	-	-	-	-
34	9104 DHIF	*31:01		-	-	-	-	-	-	-
35	9302 SSTO	*32:01		+	-	-	-	-	-	-
36	9024 KT17	*02:06	*11:01	-	-	-	-	-	-	-
37	9065 HHKB	*03:01		-	-	-	-	-	-	-
38	9099 LZL	*02:17		-	-	-	-	-	-	-
39	9315 CML	*01:01	*03:01	-	-	-	-	-	-	-
40	9134 WHONP199	*02:07	*30:01	-	-	-	-	-	-	-
41	9055 H0301	*03:01		-	-	-	-	-	-	-
42	9066 TAB089	*02:07		-	-	-	-	-	-	-
43	9076 T7526	*02:06	*02:07	-	-	-	-	-	-	-
44	9057 TEM	*66:01		-	-	-	-	-	-	-
45	9239 SHJO	*23:01	*24:02	-	-	-	-	-	-	-
46	9013 SCHU	*03:01		-	-	-	-	-	-	-
47	9045 TUBO	*02:16	*03:01	-	-	-	-	-	-	-
48	9303 TER-ND	*02:01	*11:01	-	-	-	-	-	-	-

¹The provided cell line HLA specificities are retrieved from the <http://www.ihwg.org/hla> web site. The specificity of an individual cell line may thus be subject to change.

101.403.48/12 – including *Taq* pol., IFU-01
101.403.48u/12u – without *Taq* pol., IFU-02

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Lot No.: 28V**Lot-specific information**

²The specificity of each primer solution in the kit has been tested against 48 well characterized cell line DNAs and where applicable, additional cell line DNAs.

Additional 5'- and 3'-primers in primer solutions 4, 5, 7, 8, 12, 14 to 17 and 20 to 23 were tested by separately adding one 3'-primer, respectively one 5'-primer. Additional 5'-primers in primer solution 1 and 19 were tested by separately adding one 3'-primer. Additional 3'-primers in primer solutions 3 and 18 were tested by separately adding one 5'-primer.

In primer solutions 2, 11, 12 and 15 one or two 5'-primers were not possible to test, and in primer solutions 3, 6, 8, 12, 13, 16 and 18 one 3'-primer was not possible to test.

101.403.48/12 – including *Taq* pol., IFU-01
101.403.48u/12u – without *Taq* pol., IFU-02

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Lot-specific information

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