

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.: 41N

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:	41N
Expiry date:	2014-August-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. 41N.

CHANGES COMPARED TO THE PREVIOUS OLERUP SSP® HLA-A-B-DR SSP COMBI TRAY LOT

The Lot-specific information for HLA-A-B-DR 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 SSP Combi Tray* lot was made (**Lot No. 91M**).

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

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. 91M**).

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

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. 91M**).

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

Well	5'-primer	3'-primer	rationale
81	Added	-	Primer added for the DRB1*07:22 allele.
84	Added	Exchanged	Improved allelic resolution.

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Change in revision R01 compared to R00:

1. The HLA-A*68:13 allele is amplified by primer mix 4. This has been corrected in the specificity and interpretation tables.

Change in revision R02 compared to R01:

1. Primer mix 43 does not amplify the B*15:101 allele. This has been corrected in the Specificity and Interpretation tables.

Change in revision R03 compared to R02:

1. The HLA-A*03:01:03, 03:09, 03:23:01, 03:89, 03:108, 11:06, 11:18, 24:28, 24:89, 26:03:01-26:03:02, 26:06, 26:07:02, 26:21, 26:30, 30:13, 30:16, 30:44, 30:46, 68:05, 68:15, 68:20 and 68:30 alleles are weakly amplified by primer mix 2. This has been corrected in the Specificity and Interpretation Tables.

2. The DR serology has been corrected in the Specificity Table.

Changes in revision R04 compared to R03:

1. In primer mix 5, the specific PCR product of 535 base pairs may be difficult to distinguish from the internal control band. A foot note has been added to the Specificity Table.
2. Primer mix 17 does not amplify the HLA-A*36:02 allele. This has been corrected in the Specificity and Interpretation Tables.

Change in revision R05 compared to R04:

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

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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	105	200	105	80	75	80
product						
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*80:02 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*10:04 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. ‘41N’.

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 6 will amplify the B*18:27 allele. Thus, the interpretation of HLA-A low resolution is only influenced by this HLA-B allele and not by other HLA Class I genes.

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Lot-specific information

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, 03:25 and 03:27 alleles will be amplified by primer mix 27, the C*01:30 allele will be amplified by primer mix 28, the A*23:31, A*24:106 and C*16:10 alleles will be amplified by primer mix 30, 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*15:51 allele will be amplified by primer mix 45, the C*03:129 allele 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*03:12, 03:19 and 03:102 alleles will be amplified by primer mix 65, 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*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 of 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*80:02**, recognized by the HLA Nomenclature Committee in July 2011¹ 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 January 2012¹ 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 10:04, DRB3*01:01:02:01 to DRB3*03:03, DRB4*01:01:01:01 to DRB4*01:08, DRB5*01:01:01 to DRB5*02:05**, recognized by the HLA Nomenclature Committee in July 2011¹ 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 2012-January-12, release 3.7.0, www.ebi.ac.uk/imgt/hla.

²The A*23:14 and the A*24:05, 24:13:02 and 24:24 alleles will give rise to identical amplification patterns. These four alleles can be separated by the respective high resolution SSP primer sets.

³The B*08:26, 08:50 and 08:62 and 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 and 13:35 and the B*44:135 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, 39:47 and 39:50 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 the B*35:32:01-35:32:02, 35:37, 35:53N, 35:64, 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*55:01:07-55:02:06, 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 and 55:50 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 and 55:49 and the B*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.

The B*57:01:01-57:01:04, 57:01:06-57:01:12, 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 and 57:52 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 and 13:55 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 and 13:119 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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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 ⁴⁻⁶
1 ^{7,8}	120 bp, 145bp, 225 bp	800 bp	A1, A36	*01:01:01:01-01:04N, 01:06-01:33, 01:35-01:104, 03:18, 03:135, 11:94, 11:112, 36:01-36:05
2 ⁸	210 bp, 255 bp, 365 bp, 415 bp	800 bp	A2,A19, A28, A203, A210, A3, A11, A9, A26, A30, A68	*02:01:01:01-02:01:15, 02:01:17-02:01:19, 02:01:21-02:22:02, 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, 02:130-02:336, 03:01:03 ^w , 03:09 ^w , 03:23:01 ^w , 03:89 ^w , 03:108 ^w , 11:06 ^w , 11:18 ^w , 24:28 ^w , 24:89 ^w , 26:03:01-26:03:02 ^w , 26:06 ^w , 26:07:02 ^w , 26:21 ^w , 26:30 ^w , 30:13 ^w , 30:16 ^w , 30:44 ^w , 30:46 ^w , 68:05 ^w , 68:15 ^w , 68:20 ^w , 68:30 ^w
3 ⁹	205 bp, 235 bp	1070 bp	A1, A3, A11, A32, A34, A36	*01:12, 01:19, 01:21, 03:01:01:01-03:17, 03:19-03:74, 03:76-03:94, 03:96-03:133, 11:25, 11:60, 24:92, 32:04, 33:49 ^w , 34:02:01, 34:02:02 ^w , 34:03-34:04, 34:07-34:09, 36:02
4	190 bp	800 bp	A1, A3, A11, A30, A36, A68	*01:01:01:01-01:01:22, 01:01:24-01:04N, 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, 01:100-01:104, 02:78, 02:169, 03:12, 03:18, 03:88, 03:135 ^w , 11:01:01-11:27, 11:29-11:52Q, 11:54-11:112, 26:19, 26:72, 30:08, 36:04, 68:13, 68:66
5 ¹⁴	160 bp, 535 bp	800 bp	A3, A9, A23, A24, A2403, A31, A32	*01:95, 03:30, 23:01:01-23:50, 24:02:01:01-24:11N, 24:13:01-24:15, 24:17-24:64, 24:66-24:88, 24:90N-24:128, 24:130-24:190, 31:08, 32:05, 32:13, 33:53
6 ¹⁰	135 bp, 175 bp, 210 bp	800 bp	A9, A23, A24, A29, A80	*23:01:01-23:50, 24:05, 24:13:02, 24:24, 29:07, 30:56, 31:29, 80:01-80:02, 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 , 23:14, 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, 24:189-24:190, 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, 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, 29:28, 32:15, 33:51, 34:01:01-34:09, 66:01-66:16, 68:01:01-68:85, 69:01

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9⁷	75 bp	800 bp	A3, A25, A32	*25:01:01-25:16, 32:01:01-32:02, 32:04, 32:06-32:37
10⁷	85 bp	1070 bp	A10, A26	*01:51, 01:83, 02:146, 26:01:01-26:02, 26:04, 26:07:01-26:18, 26:20, 26:22-26:29, 26:31-26:43:02, 26:45-26:71N, 33:13, 33:48, 68:84
11^{7,8}	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, 11:54-11:112, 24:19, 24:44, 26:03:01-26:03:02, 26:06, 26:21, 31:03, 34:01:01-34:08, 66:01, 66:04-66:11, 66:13-66:15, 80:02
12⁷	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, 34:01:01-34:09, 43:01, 66:02-66:03, 66:16
13	175 bp, 225 bp	1070 bp	A1, A2, A3, A10, A25, A26, A34, A43, A66	*01:13, 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, 03:112-03:133, 03:135, 25:01:01-25:05, 25:07-25:16, 26:01:01-26:01:20, 26:01:22, 26:02 ^w , 26:03:01-26:03:02, 26:05-26:08, 26:10-26:33, 26:35-26:43:02, 26:45-26:72, 30:55, 34:08, 43:01, 66:01, 66:04-66:15, 68:71, 74:13
14⁷	100 bp, 200 bp, 240 bp	1070 bp	A2, A29	*02:237, 02:309, 03:95, 26:19, 26:22, 29:01:01:01-29:32, 30:57, 31:03-31:04, 33:13, 33:48, 34:04, 66:09
15^{7,8,12,13}	90 bp, 135 bp, 205 bp	1070 bp	A1, A30	*01:13, 01:28, 03:43, 03:82, 30:01:01-30:04:02, 30:06-30:20, 30:22-30:58, 31:35
16	240 bp, 370 bp, 395 bp	1070 bp	A2, A24, A31, A32	*02:237, 03:95, 29:14, 31:01:02-31:56, 31:58-31:59, 32:05, 33:53
17	140 bp, 180 bp	1070 bp	A32	*01:95, 03:43, 03:82, 29:13, 31:35, 32:01:01-32:03, 32:05-32:37, 74:07
18	200 bp	1070 bp	A33, A68	*02:243, 33:01:01-33:01:06, 33:03:01-33:50, 33:52-33:54, 68:29
19¹²	160 bp, 200 bp	800 bp	A74	*29:19, 74:01-74:15
20¹⁰	220 bp, 245 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, 68:01:01-68:85
21	240 bp, 375 bp	800 bp	A2, A26, A28, A68, A69	*02:55, 02:243, 24:82, 26:22, 33:22, 66:09, 68:29, 69:01
22^{7,11}	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, 36:01-36:05
23^{7,10}	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, 24:18, 26:03:01-26:03:02, 26:05-26:06, 26:21, 26:30, 33:24, 36:02, 68:05, 68:15, 68:20, 80:01

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24¹²	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
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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-A low resolution SSP typings. When the primers in a primer mix can give rise to specific PCR products of more than one length this is indicated if the size difference is 20 base pairs or more. Size differences shorter than 20 base pairs are not given. For high resolution SSP kits the respective lengths of the specific PCR product(s) of the alleles amplified by these primer mixes are given.

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 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, 5, 6, 8, 9, 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-A alleles only partial 1st exon nucleotide sequences are available. We assume that unknown sequences are conserved within allelic groups.

Nucleotide sequence information is available for only exons 2 and 3 of many HLA Class I alleles and for only exon 2 of many HLA Class II alleles and not for other exons or for the introns of these alleles. We assume that unknown sequences in these exons and in the introns are conserved within loci and within allelic groups.

⁵The A*23:14, 24:05, 24:13:02 and 24:24 alleles will give rise to identical amplification patterns. These four alleles can be separated by the respective high resolution SSP primer sets.

⁶Primer mix 6 will amplify the B*18:27 allele.

⁷Specific PCR fragments shorter than 125 base pairs have a lower intensity and are less sharp than longer PCR bands.

⁸The primer pairs in wells 1, 2, 11 and 15 will in many samples give rise to two or three HLA-specific PCR fragments.

⁹Primer mix 3 may faintly amplify the A*30:04, 30:06, 30:17 and 30:29 alleles.

¹⁰Primer mixes 6, 20 and 23 may have a tendency of primer dimer formation.

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

¹²Primer mixes 15 and 24 may yield less specific PCR product than the other HLA-A low primer mixes.

¹³Primer mix 15 may have tendencies of unspecific amplifications.

¹⁴In primer mix 5, the specific PCR product of 535 base pairs may be difficult to distinguish from the internal control band. The alleles giving rise to a product of this size are the following:

A*01:95, 23:09, 24:02:06, 24:02:27, 24:08, 24:24, 24:29, 24:42, 24:67, 24:116, 24:137, 24:140, 24:145, 24:156, 24:171 and 32:13.

‘w’, might be weakly amplified.

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Lot-specific information
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, 07:41-49, 07:47, 07:49N-07:50, 07:52, 07:54-07:59, 07:61-07:99, 07:101-07:121, 07:123-07:138, 07:140-07:144, 08:79, 15:138, 15:230, 37:07, 40:15-40:16, 40:23, 40:32, 40:98, 40:136, 40:158, 41:08, 42:05-01-42:05:02, 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, 08:66-08:80, 15:142, 15:180, 44:49, 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, 13:06-13:08Q, 13:10-13:23, 13:25-13:38, 13:40-13:52, 15:07-01-15:07:02, 15:36 ^w , 15:45, 15:55, 15:68, 15:89 ^w , 15:126, 15:205, 15:207, 35:05-01-35:05:02, 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, 40:05, 40:71, 40:174, 44:08 ^w , 44:54, 44:57 ^w , 44:60, 44:106, 44:110, 44:135, 46:12, 46:20, 51:64, 53:14, 55:51, 58:18, C*03:05, C*03:25, C*03:27
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, 13:25-13:52, 14:01:01-14:04, 14:07N, 14:09, 14:11-14:12, 14:14-14:28, 14:46, 15:53, 15:106, 15:212, 18:44, 35:46-35:47, 35:63, 35:154, 40:01:01-40:01:23, 40:07, 40:10:01-40:10:02, 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, 40:163-40:164, 40:166, 40:168, 40:171-40:172, 40:175, 40:178-40:179, 41:01-41:19, 44:02:01:01-44:03:06, 44:03:08-44:05:03, 44:09-44:39, 44:41:01-44:43:02, 44:45-44:56N, 44:58N-44:80, 44:82, 44:84-44:102, 44:104-44:110, 44:112-44:129, 44:132-44:133, 44:135-44:139, 45:01-45:13, 47:01:01-47:08, 49:01:01-49:02, 49:04-49:20, 50:01:01-50:02, 50:04-50:06, 50:08-50:15, 57:45, 57:51, C*01:30
29 ⁸	185 bp, 235 bp	800 bp	7, 16, 17, 27, 2708, 37, 38, 3901, 3902, 39,	*14:01:01-14:01:02, 14:07N-14:08, 14:10, 14:12, 14:14, 14:19, 14:26, 27:01-27:05:15, 27:05:17-27:06, 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,

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30	190 bp	800 bp	14, 35, 38, 39, 65	*07:28, 14:02:01-14:02:02, 14:02:04-14:02:05, 14:03- 14:06:02, 14:09, 14:11, 14:13, 14:15-14:18, 14:20, 14:22- 14:23, 14:25, 14:27, 15:77, 15:189, 15:233, 35:26, 38:05, 38:33, 39:04, 44:16, 44:37, 44:64:01-44:64:02, 44:91, 44:132, 52:26, 57:04, A*23:31, A*24:106, 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, 15:01:06-15:02:05, 15:03:03-15:08, 15:10:02-15:11:03, 15:11:05-15:15, 15:17:01:01-15:17:02, 15:19-15:21, 15:24-15:28, 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, 46:01:01-46:30
32	165 bp, 220 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-08:12:03, 08:15-08:19N, 08:21- 08:24, 08:26-08:27, 08:29-08:36, 08:38-08:39, 08:41- 08:48, 08:49, 08:50-08:54, 08:56-08:69, 08:71-08:73, 08:75- 08:76, 08:78, 08:80, 13:46, 15:03:01-15:03:03, 15:09- 15:10:02, 15:18:01-15:18:04, 15:23, 15:29, 15:37, 15:46- 15:47, 15:49, 15:51-15:54, 15:61-15:62, 15:64, 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, 35:87, 37:12, 38:30, 40:12, 40:136, 41:01-41:03:02, 41:05-41:09, 41:11-41:17, 41:19, 42:01:01-42:02, 42:04-42:08, 42:10-42:15, 44:14- 44:15, 44:18, 44:20, 44:62, 44:100, 45:01-45:13, 51:08, 51:20, 51:36, 51:44N, 51:97, 52:19, 55:20, 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	*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, 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, 51:63-51:80, 51:82-51:91, 51:94- 51:98N, 51:100-51:126, 52:01:01-52:01:04,

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34	180 bp	800 bp	13, 22, 55, 60	*07:78, 13:01:01-13:02:12, 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, 40:48, 45:10, 49:07, 55:09, 55:22, 55:24
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, 15:03:01-15:03:03, 15:47, 15:49, 15:54, 15:61-15:62, 15:64, 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, 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, 39:49, 40:12, 40:46, 40:93, 42:11, 44:10, 44:15, 44:18, 44:40, 44:44, 44:130, 45:01, 45:05-45:07, 45:11-45:13, 48:01:01-48:05, 48:07-48:27, 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, 08:28, 08:35, 08:37, 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, 15:49-15:57, 15:60-15:62, 15:64-15:72, 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, 15:234-15:238, 18:01:01-18:15, 18:17N-18:25, 18:27-18:40, 18:42-18:60, 18:62-18:68, 27:41, 35:01:01:01-35:01:29, 35:05:01- 35:05:02, 35:07-35:08:05, 35:10-35:11:02, 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- 35:64, 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, 35:186, 39:07, 39:43, 40:03, 40:20, 40:38, 40:52, 40:59-40:60, 40:105, 40:158-40:159, 42:09, 44:17, 44:43:01-44:43:02, 45:09, 46:01:01-46:10, 46:12-46:17, 46:19-46:30, 48:02:01-48:02:02, 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, 53:20-53:27, 54:06, 54:09, 54:14, 55:14, 55:23, 55:32, 56:03, 56:09, 56:18, 56:31-56:32, 57:01:01- 57:01:12, 57:06, 57:08, 57:10-57:11, 57:13-57:16, 57:18- 57:27, 57:29-57:31, 57:33-57:38, 57:40-57:41, 57:43- 57:45, 57:47-57:52, 58:01:01-58:02, 58:04-58:07, 58:09- 58:19, 58:21-58:26, 58:29-58:33, 58:35-58:36
37	195 bp	1070 bp	27, 35, 37, 44, 58, 76	*15:12, 15:14, 15:19, 15:91, 15:131, 15:161, 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-37:31, 38:17, 44:17, 44:43:01- 44:43:02, 45:09, 46:17, 53:22, 58:07, A*24:174

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38⁶	105 bp, 395 bp, 435 bp	1070 bp	5, 7, 15, 41, 42, 62, 63, 70, 71, 75, 77	*07:04, 07:25, 15:09-15:10:02, 15:13:01-15:13:02, 15:16:01-15:18:04, 15:21, 15:23-15:24, 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, 40:136, 41:08, 42:05:01-42:05:02
39⁶	115 bp, 150 bp	1070 bp	18	*18:01:01-18:15, 18:17N-18:28, 18:30-18:68
40⁶	80 bp	1070 bp	7, 27, 2708, 44, 60	*07:73, 27:01-27:21, 27:23-27:51, 27:53-27:66N, 27:68- 27:74, 27:76-27:86, 38:22, 40:46, 40:93, 44:40, 44:44, 44:130
41	150 bp	800 bp	12, 13, 17, 18, 22, 27, 35, 37, 39, 44, 45, 47, 48, 51, 53, 56, 57, 58, 62, 70, 75, 77, 78	*08:49, 13:01:01-13:01:06, 13:06-13:07N, 13:12-13:13, 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, 14:10, 15:02:01- 15:02:05, 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, 18:22, 27:19, 27:30, 35:01:01-35:04:03, 35:06- 35:08:05, 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, 35:61-35:63, 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, 37:01:01-37:01:07, 37:03N-37:06, 37:08, 37:10- 37:11, 37:13-37:31, 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, 48:02:01-48:02:02, 48:25, 51:04, 51:42, 51:46, 51:56:01- 51:56:02, 53:01:01-53:13, 53:15-53:27, 55:14, 56:09, 56:11-56:12, 57:01:01-57:01:04, 57:01:06-57:10, 57:12, 57:14-57:20, 57:22-57:30, 57:32-57:46, 57:48-57:52, 58:01:01-58:01:02, 58:01:04-58:01:09, 58:04-58:05, 58:09- 58:15, 58:17N, 58:19, 58:21-58:24, 58:28-58:36, 83:01, C*03:102
42	135 bp	1070 bp	8, 18, 22, 35, 39, 78	*07:65, 07:134, 08:32, 15:202, 18:01:01-18:08, 18:10- 18:15, 18:17N-18:36, 18:38-18:47, 18:50-18:53, 18:55- 18:65, 18:68, 35:01:01:01-35:03:02, 35:03:04-35:08:04, 35:09:01-35:18, 35:20:01-35:24:02, 35:28-35:45, 35:48, 35:50-35:55, 35:57-35:62, 35:64-35:72, 35:74-35:153, 35:155-35:184, 35:185, 35:186, 37:11, 39:19:01-39:19:02, 56:06, 78:01:01-78:05, 78:07

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43^{6,10}	60 bp, 245 bp, 400 bp	1070 bp	5, 15, 44, 48, 60, 62, 63, 70, 71, 72, 75, 76, 77, 82	*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, 15:237-15:238, 40:12, 82:01-82:03
44¹⁰	210 bp	800 bp	27, 37	*07:27, 08:49, 18:54, 37:01:01-37:31, 38:17
45	170 bp	800 bp	16, 35, 38, 39, 3901, 3902, 67, 72	*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, 39:01:01-39:01:01:02L, 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, 39:51-39:68, 51:101, 58:20, 67:01:01-67:03, C*15:51
46⁶	110 bp	1070 bp	38	*38:01:01-38:02:02, 38:03, 38:05, 38:08-38:24, 38:26-38:34N, 38:36-38:37, 52:01:10
47	395 bp	1070 bp	14, 16, 38, 39, 3901, 64, 65	*07:69, 07:85, 08:65, 14:01:01-14:20, 14:22-14:28, 38:01:01-38:02:03, 38:04-38:05, 38:08-38:25, 38:27-38:37, 39:01:01:01-39:01:01:02L, 39:01:03-39:01:12, 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, 39:40N-39:48, 39:50-39:57, 39:59-39:62, 39:64-39:68
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70¹⁴	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	*07:02:01-07:06, 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, 07:101-07:121, 07:123-07:138, 07:140- 07:144, 08:01:01-08:05, 08:07-08:08N, 08:10-08:11, 08:13- 08:15, 08:17-08:80, 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, 41:02:01-41:02:04, 41:04, 41:10-41:11, 41:13, 41:18-41:19, 42:01:01-42:02, 42:05:01-42:07, 42:09-42:13, 42:15-42:16, 48:01:01-48:01:03, 48:05-48:12, 48:14-48:20, 48:22, 48:27, 53:15, 81:01-81:05

101.701.24/06 – including *Taq pol.*, IFU-01
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Lot No.: 41N**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 specific PCR products of more than one length this is indicated if the size difference is 20 base pairs or more. Size differences shorter than 20 base pairs are not given. For high resolution SSP kits the respective lengths of the specific PCR product(s) of the alleles amplified by these primer mixes are given.

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 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, 54, 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.

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.

⁴Nucleotide sequence information is available for only exons 2 and 3 of many HLA Class I alleles and for only exon 2 of many HLA Class II alleles and not for other exons or for the introns of these alleles. We assume that unknown sequences in these exons and in the introns are conserved within loci and within allelic groups.

The B*08:26, 08:50 and 08:62 and 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 and 13:35 and the B*44:135 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 and 39:50 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 the B*35:32:01-35:32:02, 35:37, 35:53N, 35:64, 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*55:01:07-55:02:06, 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 and 55:50 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 and 55:49 and the B*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.

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Lot No.: 41N**Lot-specific information**

The B*57:01:01-57:01:04, 57:01:06-57:01:12, 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 and 57:52 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.

⁵C*02:23 and C*04:77 alleles will be amplified by primer mix 25, the C*03:05, 03:25 and 03:27 alleles will be amplified by primer mix 27, the C*01:30 allele will be amplified by primer mix 28, the A*23:31, A*24:106 and C*16:10 alleles will be amplified by primer mix 30, 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*15:51 allele will be amplified by primer mix 45, the C*03:129 allele 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*03:12, 03:19 and 03:102 alleles will be amplified by primer mix 65, 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*06:20 and C*12:50 alleles will be amplified by primer mix 69.

⁶Specific PCR fragments shorter than 125 base pairs have a lower intensity and are less sharp than longer PCR bands.

⁷Primer mix 28 may yield less 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 give a lower yield of specific PCR product than the other HLA-B low resolution primer mixes.

⁹Primer mix 33 has pronounced tendencies of giving rise to nonspecific amplifications.

¹⁰Primer mixes 25, 43 and 44 may give rise to a primer oligomer artifact.

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.

¹⁴The 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

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
73 ^{6,8}	205, 255 bp	515 bp	1	*01:01:01-01:02:08, 01:04-01:38, 01:40N-01:45
74	200 bp	430 bp	103	*01:03, 01:39N, 01:42
75 ⁶	200, 215 bp	430 bp	15	*15:01:01:01-15:69
76	210 bp	430 bp	16	*16:01:01-16:05:02, 16:07-16:19
77 ^{5,6,7}	120, 220 bp	430 bp	3, 17, 18, 11	*03:01:01:01-03:75, 03:77, 11:07, 11:53, 11:103, 11:105, 11:107, 15:25
78 ^{5,6,7}	80, 210 bp	430 bp	3, 17, 11, 13, 14	*03:01:01:01-03:01:19, 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, 03:75-03:77, 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, 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, 14:16, 14:19, 14:21, 14:82, 14:95, 14:109
79 ^{5,6}	85, 210 bp	430 bp	3, 18, 11, 13, 14	*03:02:01-03:03, 03:27, 03:29, 03:38, 03:53, 03:74, 11:13:01 ^w -11:13:02 ^w , 11:26, 11:34, 13:15, 13:19, 13:26, 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
80 ^{5,6}	100, 175 bp	430 bp	3, 4	*04:01:01-04:107
81 ⁶	210, 235 bp	430 bp	7, 13, 14	*07:01:01:01-07:01:04, 07:03-07:22, 12:22, 13:17, 13:116, 14:50
82 ⁶	170, 215, 250 bp	515 bp	8, 12, 14	*08:01:01-08:19, 08:21-08:49, 11:67, 12:04, 12:16, 12:22, 14:11, 14:15, 14:68, 14:93
83 ^{5,6}	90, 135, 180 bp	430 bp	3, 9, 11	*03:08, 03:65, 09:01:02-09:17, 11:07, 11:53, 11:103, 11:105, 11:107
84	175 bp	430 bp	10	*03:76, 10:01:01-10:04, 11:59, 11:80, 11:83, 11:87, 13:27, 13:41, 13:71, 13:129

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Lot No.: 41N		Lot-specific information		
85 ^{5,6}	100, 170 bp	430 bp	11, 3, 8	*03:08, 03:65, 08:31, 08:41, 11:01:01-11:70, 11:72-11:121
86 ⁵	85, 105 bp	430 bp	12, 8	*08:32, 12:01:01-12:35
87 ⁸	215 bp	430 bp	6, 8, 11, 13, 14, 1403	*03:76, 08:20-08:21, 11:01:01-11:04:08, 11:06:01-11:06:02, 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, 11:108-11:121, 13:01:01- 13:08, 13:10-13:16, 13:18-13:43, 13:45-13:85, 13:87-13:115, 13:117-13:128, 13:130-13:135, 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, DRB3*02:27
88 ^{6,8}	195, 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, 11:01:01-11:06:02, 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, 11:120-11:121, 12:02:01-12:02:05, 12:13, 12:15-12:16, 12:18-12:21, 12:23, 12:26- 12:27, 12:31N-12:33, 13:01:01-13:02:01, 13:02:03-13:02:05, 13:04-13:05:02, 13:07:01- 13:09, 13:11:01-13:11:02, 13:14:01-13:24, 13:26-13:29, 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, 14:15-14:16, 14:22, 14:24-14:25, 14:27, 14:37, 14:53, 14:73, 14:105
89 ⁷	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, 03:70-03:77, 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, 13:123-13:135, 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

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90^{5,6}	100, 140, 155 bp	430 bp	14, 4, 8, 13	*04:62, 04:69, 04:73, 04:105, 08:08, 11:69, 11:82, 13:45, 14:01:01-14:01:02, 14:04, 14:07:01-14:07:02, 14:10, 14:16, 14:22, 14:25- 14:26, 14:28, 14:31-14:32:02, 14:35, 14:37- 14:39, 14:49-14:50, 14:53-14:55, 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, DRB4*01:03:01:02N
91^{5,6,9}	110, 135, 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, 09:04-09:17, 11:13:01-11:13:02, 11:17, 11:52, 13:43, 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 , 14:22-14:23:03, 14:26, 14:28-14:36, 14:38- 14:39, 14:41, 14:43-14:52, 14:54-14:57, 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- 14:122, 15:27, 15:34, 15:66
92^{5,6,8}	110, 175, 225 bp	430 bp	14, 3, 8, 11, 13, 15, 16	*03:10, 08:09, 08:20-08:21, 08:32, 08:35, 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, 14:01:01-14:01:03, 14:03:01- 14:05:03, 14:07:01-14:08, 14:10-14:12:02, 14:14-14:16, 14:18, 14:22-14:23:03, 14:25- 14:28, 14:31-14:32:02, 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, 15:21 ^w , 16:04 ^w , 16:18 ^w
93^{6,7}	160, 240 bp	430 bp	52	DRB3*01:01:02:01-01:15, DRB3*02:01-02:28, DRB3*03:01:01-03:03
94¹⁰	215 bp	430 bp	53	DRB4*01:01:01-01:08
95	175 bp	430 bp	51	DRB5*01:01:01-01:14, DRB5*02:02-02:05
96¹¹				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 DR low resolution SSP subtypings.

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

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.

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Lot-specific information

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 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.

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 only partial second exon nucleotide sequences are 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.

The 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 and 13:55 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 and 13:119 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.

⁵Specific PCR fragments shorter than 125 base pairs have a lower intensity and are less sharp than longer PCR bands.

⁶Individual alleles can give to rise to two differently sized specific PCR fragments in primer mixes 73, 75, 77 to 83, 85, 86, 88 and 90 to 93.

⁷Due 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.

⁸Primer mix 73, 87, 88 and 92 may give rise a 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 the primer pair in well No. 94, whereas the DRB4*02:01N and DRB4*03:01N null alleles are not amplified by this primer pair.

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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Lot-specific information

INTERPRETATION TABLE

HLA-A low resolution SSP typing

Amplification patterns of the A*01:01 to A*80:02 alleles

Well ⁶											
Length of spec.											
PCR product(s)											
Length of int.											
pos. control ¹											
5'-primer(s) ²											
1	2	3	4	5	6	7	8	9	10	11	12
5' -AgA ^{3'} 545	5' -TCT ^{3'} 203	5' -ATA ^{3'} 363	5' -AgT ^{3'} 123	5' -CCT ^{3'} 103	5' -CTT ^{3'} 98	800	225	145	120	1	2
5' -gTg ^{3'} 292	5' -gGA ^{3'} 240	5' -CCA ^{3'} 106	5' -TCT ^{3'} 78	5' -gCT ^{3'} 48	800	415	365	255	210	3	4
5' -CCA ^{3'} 555	5' -gCA ^{3'} 555	5' -CCT ^{3'} 527	5' -CCA ^{3'} 527	5' -ATA ^{3'} 363	1070	235	205	205	205	5	6
5' -CCg ^{3'} 559	5' -CTg ^{3'} 256	5' -CCg ^{3'} 413	5' -CTA ^{3'} 98	800	190	190	190	190	190	7	8
5' -CCg ^{3'} 570	5' -CCC ^{3'} 265	5' -gCT ^{3'} 317	5' -GCC ^{3'} 144	800	535	535	535	535	535	10	11
5' -CAG ^{3'} 538	5' -CTg ^{3'} 502	5' -ACA ^{3'} 270	5' -gTT ^{3'} 368	5' -gCA ^{3'} 176	800	210	175	135	135	6	7
5' -TCT ^{3'} 539	5' -CTT ^{3'} 502	5' -gTT ^{3'} 259	5' -CCg ^{3'} 368	5' -CTC ^{3'} 98	1070	205	175	175	175	8	9
5' -CCA ^{3'} 538	5' -gTT ^{3'} 259	5' -gTT ^{3'} 259	5' -CCg ^{3'} 413	5' -ACA ^{3'} 102	800	200	165	165	165	10	11
5' -ggG ^{3'} 521	5' -Cgt ^{3'} 341	5' -AgG ^{3'} 266	5' -ACg ^{3'} 266	5' -ACg ^{3'} 266	800	75	75	75	75	12	13
5' -ggG ^{3'} 559	5' -CTC ^{3'} 506	5' -gCA ^{3'} 257	5' -AAC ^{3'} 261	5' -CgA ^{3'} 259	5' -CgG ^{3'} 257	1070	85	85	85	85	14
5' -CgT ^{3'} 559	5' -ggG ^{3'} 521	5' -Cgt ^{3'} 341	5' -ggG ^{3'} 385	5' -gGA ^{3'} 302	5' -CgG ^{3'} 301	1070	500	175	80	11	15
5' -CCG ^{3'} 559	5' -ggG ^{3'} 521	5' -Cgt ^{3'} 341	5' -gCT ^{3'} 423	5' -CCT ^{3'} 103	800	185	125	125	125	16	17
5' -CCA ^{3'} 555	5' -gTC ^{3'} 418	5' -Tcg ^{3'} 299	5' -ggG ^{3'} 355	5' -AgA ^{3'} 238	5' -CAG ^{3'} 98	1070	225	175	175	175	18
5' -CCA ^{3'} 526	5' -TCA ^{3'} 411	5' -CCA ^{3'} 299	5' -TAC ^{3'} 369	5' -ATA ^{3'} 363	5' -gGT ^{3'} 362	1070	240	200	100	100	19
5' -CCA ^{3'} 555	5' -CCG ^{3'} 265	5' -TCA ^{3'} 243	5' -CCT ^{3'} 238	5' -CCg ^{3'} 355	5' -CTT ^{3'} 41	1070	395	370	240	240	20
5' -CCA ^{3'} 555	5' -ggA ^{3'} 317	5' -CAA ^{3'} 290	5' -AgC ^{3'} 418	5' -gAA ^{3'} 203	5' -TTT ^{3'} 180	1070	180	140	140	140	21
5' -gTT ^{3'} 259	5' -CTC ^{3'} 256	5' -CCC ^{3'} 256	5' -CAG ^{3'} 106	5' -CAC ^{3'} 98	1070	200	200	200	200	200	22
5' -Cgt ^{3'} 341	5' -CCA ^{3'} 299	5' -CCA ^{3'} 299	5' -CCT ^{3'} 2nd I	5' -TTT ^{3'} 180	800	245	245	245	245	245	23
5' -Tgt ^{3'} 506	5' -CTT ^{3'} 502	5' -gAC ^{3'} 282	5' -CCC ^{3'} 265	5' -CAC ^{3'} 106	5' -TCT ^{3'} 78	800	375	375	375	375	24
5' -CAG ^{3'} 570	5' -gAC ^{3'} 282	5' -gAC ^{3'} 355	5' -ggt ^{3'} 97	5' -AAC ^{3'} 261	5' -Tcg ^{3'} 28	800	240	240	240	240	25
5' -CCA ^{3'} 555	5' -TCT ^{3'} 299	5' -gTT ^{3'} 292	5' -gAC ^{3'} 341	5' -AAC ^{3'} 261	5' -gCA ^{3'} 176	800	495	495	495	495	26
5' -ggT ^{3'} 418					5' -ggG ^{3'} 341	1070					



101.701.24/06 – including *Taq pol.*, IFU-01
 101.701.24u/06u – without *Taq pol.*, IFU-02

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Lot No.: 41N

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																										
*01:01:01:01:01:01:22, 01:01:24:01:04N, 01:06- 01:07, 01:09:01:11N, 01:16N- 01:18N, 01:20, 01:22N- 01:27N, 01:29, 01:31N- 01:33, 01:35-01:50, 01:52N- 01:78, 01:80-01:82, 01:84- 01:94, 01:96-01:98, 01:100- 01:104	A1, Null, -	1			4																						
*01:01:23, 01:08, 01:14- 01:15N, 01:30, 01:79, 01:99	A1, Null, -	1																									
*01:12, 01:19	A1, -	1		3																							
*01:13	A1	1			4						11			13		15											
*01:21	A1	1		3	4																						
*01:28	-	1			4						11				15												
*01:51	-	1			4					8	10																
*01:83	-	1			4						10																
*01:95	-	1			4	5												17									
*02:01:01:01-02:01:15, 02:01:17-02:01:19, 02:01:21- 02:16, 02:18-02:22:02, 02:24:01-02:33, 02:36-02:45, 02:47, 02:49-02:54, 02:57- 02:61, 02:63-02:69, 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, 02:136-02:145, 02:147-02:168, 02:170- 02:236, 02:238-02:242, 02:244-02:308, 02:310- 02:336	A2, Low A2, A203, A210, A19, 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				
*02:78	-	w	4																	20		22					
*02:135	-	2												13												24	
*02:146	-	2									10																
*02:169	-	2	4																								
*02:237	-	2													14	16											
*02:243	-	2																	18		21						
*02:309	-	2												12	14												24
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.: 41N

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
*03:01:01:01-03:01:02, 03:01:04-03:01:18, 03:01:20- 03:01:22, 03:01:24-03:07, 03:10-03:11N, 03:13-03:17, 03:19-03:22:02, 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, 03:112-03:133	A3, Null, -																								
*03:01:03, 03:09, 03:23:01	A3, -	w	3															13							
*03:01:19	-		3														12	13							24
*03:01:23, 03:08, 03:32, 03:36N, 03:57, 03:59, 03:72, 03:107, 03:111	A3, Null, -			3																					
*03:12	A3		3	4																					
*03:18	-	1		4														13							
*03:24, 03:50	A3, -		3					8										13							
*03:30	A3		3		5													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	-		3	4														11							23
*03:89, 03:108	-	w	3																						
*03:95	-																	13	14	16					
*03:135	-	1		w														13							
*11:01:01-11:05, 11:07- 11:09, 11:12-11:17, 11:19- 11:24:02, 11:26-11:27, 11:29- 11:52Q, 11:54-11:59, 11:61- 11:93, 11:95-11:111	A11, Null, -			4														11							
*11:06, 11:18	A11, -	w	4															11							
*11:10	A11			4				8										11							
*11:11	-			4														11	12						
*11:25, 11:60	A11, -		3	4														11							
*11:94, 11:112	-	1		4														11							
*23:01:01-23:13, 23:15-23:50	A23, Null, -					5	6																		
*23:14, 24:05, 24:13:02, 24:24 ⁷	A23, A9, A24					5	6	7																	
*24:02:01:01-24:04, 24:06- 24:11N, 24:13:01, 24:17, 24:20-24:23, 24:25-24:27, 24:29-24:43, 24:45N-24:50, 24:54-24:56, 24:58-24:63, 24:66-24:81, 24:83N-24:88, 24:90N-24:91, 24:93, 24:95- 24:113, 24:115-24:128, 24:130-24:137, 24:139- 24:187, 24:189-24:190	A24, Low A24, A2403, A9, Null, -							5	7																
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.: 41N

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				
*24:14-24:15, 24:51-24:53, 24:57, 24:64, 24:94, 24:114, 24:138, 24:188	A24, -					5																							
*24:18	A24, A3					5	7					11													23				
*24:19, 24:44	A9		w			5	7																						
*24:28	A9		w			5	7																						
*24:82	-		w			5	7																		21				
*24:89	-		w					7																					
*24:92	-		3			5																							
*24:129	-							7																					
*25:01:01-25:04, 25:07- 25:12N, 25:14-25:16	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				
*26:01:01-26:01:20, 26:01:22, 26:08, 26:10- 26:15, 26:17-26:18, 26:20, 26:23-26:29, 26:31-26:33, 26:35-26:43:02, 26:45-26:53, 26:55-26:63, 26:66-26:71N	A26, A10, Null, -								8		10		13																
*26:01:21, 26:04, 26:34	A26, -								8	10																			
*26:02	A26								8	10		w																	
*26:03:01-26:03:02, 26:06, 26:21	A26, -	w							8		11		13												23				
*26:05	A26								8				13																
*26:07:01, 26:64	A26, -										10		13																
*26:07:02	A26, -	w									10		13																
*26:09	A26								8	10		12																	
*26:16	A26							7		10		13																	
*26:19	-		4										13	14															
*26:22	A26								8	10		13	14											21					
*26:30	A26	w							8				13												23	24			
*26:54	-								8	10		12	13											20					
*26:65	-								8	10		13														24			
*26:72	-		4										13																
*29:01:01-29:06, 29:08N- 29:12, 29:15-29:18, 29:20- 29:27, 29:29-29:32	A29, Null, -													14															
*29:07	A29							6					14																
*29:13	-												14													17			
*29:14	-												14	16															
*29:19	-												14													19			
*29:28	-								8				14																
*30:01:01-30:04:02, 30:06- 30:07, 30:09-30:12, 30:14- 30:15, 30:17-30:20, 30:22- 30:43, 30:45, 30:47-30:54, 30:58	A30, Null, -														15														
*30:08	A30					4									15														
*30:13, 30:16, 30:44, 30:46	A30, -	w													15														
*30:55	-													13	15														
*30:56	-							6							15														
*30:57	-														14	15													
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.: 41N

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	
*31:01:02-31:02, 31:05-31:07, 31:09-31:28, 31:30-31:34, 31:36-31:56, 31:58-31:59	A31, Null, -																16									
*31:03	A31										11	12		14		16										
*31:04	A31											12		14		16									24	
*31:08	A31, A24				5													16								
*31:29	-				6													16								
*31:35	-															15	16	17								
*32:01:01-32:02, 32:06-32:12, 32:14, 32:16-32:37	A32, Null, -									9									17							
*32:03	A32																		17							
*32:04	A32, A3	3								9										16	17					
*32:05	A32				5					9																
*32:13	A32				5					9									17							
*32:15	A32								8	9									17							
*33:01:01-33:01:06, 33:03:01-33:12, 33:14-33:18, 33:20-33:21, 33:23, 33:25-33:47, 33:50, 33:52, 33:54	A33, -																			18						
*33:13, 33:48	-									10			14					18								
*33:19	-						7												18							
*33:22	-																		18		21					
*33:24	-																		18			23				
*33:49	-		w							8									18							
*33:51	-								5										16	18						
*33:53	-									8																
*34:01:01-34:01:02, 34:05-34:06	A34, A10									8		11	12													
*34:02:01, 34:03, 34:07	A34	3								8		11	12													
*34:02:02	-	w								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											12	13													
*66:01, 66:04-66:08, 66:10-66:11, 66:13-66:15	A66, A26, -									8		11	13													
*66:02-66:03, 66:16	A66, A10, -									8		12										24				
*66:09	-									8		11	13	14								21				
*66:12	-									8		13										24				
*68:01:01-68:04, 68:06-68:12, 68:14, 68:16-68:19, 68:21:01-68:28, 68:31-68:44, 68:46-68:65, 68:67-68:70, 68:72-68:83, 68:85	A68, A28, Null, -									8											20					
*68:05, 68:15, 68:20	A68	w								8											20		23			
*68:13, 68:66	A68			4						8										20						
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.: 41N

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
*68:29	A68								8									18		20	21				
*68:30	A68	w							8												20				
*68:45	-							7	8												20				
*68:71	-								8				13								20				
*68:84	-								8	10											20				
*69:01	A69								8												21				
*74:01-74:06, 74:08-74:12N, 74:14N-74:15	A74, Null, -																		19						
*74:07	A74																	17	19						
*74:13	-												13						19						
*80:01	A80						6																23		
*80:02	-						6				11														
B*18:27							6																		
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, 5, 6, 8, 9, 12 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, 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 renamed to A*02:01:18.

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*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*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.

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*23:14 and the A*24:05, 24:13:02 and 24:24 alleles will give rise to identical amplification patterns. These four 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.: 41N

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.		25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48	
PCR product(s)		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 int. pos. control ¹		25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48	
5'-primer(s) ²		25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48	
3'-primer(s) ³		25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	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	

101.701.24/06 – including Taq pol., IFU-01
 101.701.24u/06u – without Taq pol., IFU-02

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Lot No.: 41N

Lot-specific information

INTERPRETATION TABLE																
HLA-B low resolution SSP																
Amplification patterns of the B*07:02 to B*83:01 alleles																
Well															Length of spec. PCR product(s)	
49	50	51	52	53	54	55	56	57	58	59	60	61	62	63	64	3'-primer(s) ³
5' -TgT ^{3'} 193	5' -CgT ^{3'} 193	5' -TgT ^{3'} 605	5' -gTg ^{3'} 603	5' -GCC ^{3'} 282	5' -gCg ^{3'} 572	5' -gTC ^{3'} 538	5' -ATC ^{3'} 309	5' -gTg ^{3'} 583	5' -TCA ^{3'} 299	5' -TCA ^{3'} 355	5' -Agg ^{3'} 499	5' -Agg ^{3'} 418	5' -TCA ^{3'} 355	5' -TCA ^{3'} 355	1070	180
												5' -Tgg ^{3'} 357	5' -ATT ^{3'} 141	5' -gCT ^{3'} 72	1070	290
												5' -gAC ^{3'} 540	5' -CAG ^{3'} 1st I	5' -CAG ^{3'} 1070	1070	105
												5' -GAC ^{3'} 1070	5' -CAG ^{3'} 1st I	5' -CAG ^{3'} 1070	1070	51
												5' -CAG ^{3'} 1070	5' -CAG ^{3'} 1st I	5' -CAG ^{3'} 1070	1070	52
												5' -CAG ^{3'} 1070	5' -CAG ^{3'} 1st I	5' -CAG ^{3'} 1070	1070	53
												5' -CAG ^{3'} 1070	5' -CAG ^{3'} 1st I	5' -CAG ^{3'} 1070	1070	54
												5' -CAG ^{3'} 1070	5' -CAG ^{3'} 1st I	5' -CAG ^{3'} 1070	1070	55
												5' -CAG ^{3'} 1070	5' -CAG ^{3'} 1st I	5' -CAG ^{3'} 1070	1070	56
												5' -CAG ^{3'} 1070	5' -CAG ^{3'} 1st I	5' -CAG ^{3'} 1070	1070	57
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												5' -CAG ^{3'} 1070	5' -CAG ^{3'} 1st I	5' -CAG ^{3'} 1070	1070	64
												5' -CAG ^{3'} 1070	5' -CAG ^{3'} 1st I	5' -CAG ^{3'} 1070	1070	65
												5' -CAG ^{3'} 1070	5' -CAG ^{3'} 1st I	5' -CAG ^{3'} 1070	1070	66
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												5' -CAG ^{3'} 1070	5' -CAG ^{3'} 1st I	5' -CAG ^{3'} 1070	1070	68
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												5' -CAG ^{3'} 1070	5' -CAG ^{3'} 1st I	5' -CAG ^{3'} 1070	1070	71
												5' -CAG ^{3'} 1070	5' -CAG ^{3'} 1st I	5' -CAG ^{3'} 1070	1070	72
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101.701.24u/06u – without *Taq* pol., IFU-02**

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101.701.24/06 – including Taq pol., IFU-01
 101.701.24u/06u – without Taq pol., IFU-02

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**101.701.24/06 – including *Taq* pol., IFU-01
101.701.24u/06u – without *Taq* pol., IFU-02**

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101.701.24/06 – including Taq pol., IFU-01
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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		Well No.							

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*38:17	-					29														44	45	46	47					
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*38:35	-					29															45	47						
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*39:17	B39																				45		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.

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*39:36	-					29																	47	48			
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*39:42	B39					29													41			45	47	48			
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*39:58	-					29																45		48			
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	?										58	60		62						70		-			*40:109
	?											62								70		-			*40:110
49	?								58	60		62							70		-				*40:117
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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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																											–	*51:45
																											–	*51:54, 51:78
																											–	*51:61
																											–	*51:62
																											–	*51:64
																											–	*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
*51:81	-																								
*51:93	-																								
*51:97	-								32	33		36													
*51:101	-										33													45	
*51:104, 51:118N	Null, -										33														
*51:106	-										33														
*51:112	-										33														
*52:01:01:01-52:01:01:02, 52:01:03, 52:01:06-52:01:08, 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	B52, -										33														
*52:01:02, 52:01:04, 52:01:09, 52:02-52:03, 52:06:01-52:06:02, 52:09	B52, -										33														
*52:01:05, 52:14	B52, -																								46
*52:01:10	-										33														
*52:16	-										33	35													
*52:19	-								32	33															
*52:20	-										33														
*52:21	-										33														
*52:25	-																								
*52:26	-								30	33															
*53:01:01-53:01:05, 53:05, 53:08:01-53:08:02, 53:10, 53:16, 53:18, 53:20-53:21, 53:23-53:27	B53, -											36													
*53:02	B53											36													
*53:03, 53:09, 53:11-53:13	B53, B35											36													
*53:04, 53:07, 53:19	B53, -																								
*53:06	B53, B51											36													
*53:14	-	27										36													
*53:15	-											36													
*53:17:01-53:17:02	-											36													
*53:22	-											36	37												
*54:01:01, 54:02, 54:05N, 54:07- 54:08N, 54:10, 54:13, 54:16- 54:19, 54:21-54:24	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 ¹¹	B55, B54, -																								
*54:03	B22																								
*54:04, 54:15	B54, -																								
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			Well No.		
					54					60						68		70								*51:81		
										59 60						68		70								*51:93		
					54					59 60						68		70								*51:97		
					54					59 60						68		70								*51:101		
					54					59 60								70								*51:104, 51:118N		
					54					59 60						65		68		70						*51:106		
					54					58 59 60									70							*51:112		
										59 60		62							70		B52, -					*52:01:01:01-52:01:01:02, 52:01:03, 52:01:06-52:01:08, 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		
					54					59 60		62							70		B52, -					*52:01:02, 52:01:04, 52:01:09, 52:09		
										59 60		62							70		B52, -					*52:01:05, 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		67		70						*52:25		
										59 60		62							70							*52:26		
										60								68		70		B53, -				*53:01:01-53:01:05, 53:05, 53:08:01-53:08:02, 53:10, 53:16, 53:18, 53:20-53:21, 53:23-53:27		
					55					60						68		70		B53							*53:02	
										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		
										60						68		70	72		-					*53:15		
										60		62							70							*53:17:01-53:17:02		
					53					60						68		70			-					*53:22		
					52					56						63 64				71		B54, Null, -						*54:01:01, 54:02, 54:05N, 54:07-54:08N, 54:10, 54:13, 54:16-54:19, 54:21-54:24
																					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 ¹¹	
					52					56						64				71							*54:03	
					52					56						63		65		71		B22						*54:04, 54:15
					52					56						63				71		B54, -						
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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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
*54:06	-												36												
*54:09, 54:14	-												36												
*54:11	B54																								48
*54:12	-																								
*54:20	-																								
*55:01:01-55:01:06, 55:01:08, 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- 55:54	B55, -																								
*55:04, 55:08, 55:13, 55:27, 55:46, 55:49, 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	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																
*56:01:01-56:01:04, 56:08, 56:14, 56:16, 56:20:01, 56:24, 56:26-56:30	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																								
*56:09	B56													36				41							
*56:10	B55																								
*56:11-56:12	B56, B22																		41						
*56:13	B56									32															
*56:17	B56																								
*56:20:02	-																								48
*56:21	-													33											
*56:23	-																								
*56:25	-																								
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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 "Instructions for Use" (IFU)

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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			Well No.
			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	59					64					71			B55, -					*55:01:01-55:01:06, 55:01:08, 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 55:54	
			52			56											71			B55,					*55:04, 55:08, 55:13, 55:27, 55:46, 55:49, 56:15, 56:19N, 56:22 ¹²	
			52			56	59										71			B56,					*55:09, 55:24	
			52			56						66					71			Null, -					*55:14	
			52			56	59										71			B55, -					*55:17, 55:28	
			52			56						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			56										65			71					*56:01:01-56:01:04, 56:08, 56:14, 56:16, 56:20:01, 56:24, 56:26-56:30		
			52			56							65	67			71			B56					*56:02, 56:04	
			52			56										69	71		B22,					*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		
			52			56										71			B56					*56:09		
			52			56						64		67			71			B55					*56:10	
			52			56											71			B56,					*56:11-56:12	
			52	54	56								65				71			B56					*56:13	
			52			56							65				71			B56					*56:17	
			52			56							65				71			-					*56:20:02	
			52			56	58 59										70			-					*56:21	
			52			56	59					64					71			-					*56:23	
			52			56	59					65					71			-					*56:25	
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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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	
*57:01:01-57:01:04, 57:01:06-																										
57:01:12, 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, B57, -																										
57:33-57:38, 57:40-57:41, 57:43-																										
57:44, 57:48-57:50, 57:52,																										
58:36 ¹⁴																										
*57:01:05, 57:11, 57:13, 57:21,	B57, -																									
57:31, 57:47																										
*57:02:01-57:03:02, 57:05,	B57,																									
57:17, 57:28N, 57:32, 57:39,	Null, -																									
57:42, 57:46																										
*57:04	B57									30																
*57:07	B57																									
*57:09	B57										32															
*57:12	B57																									
*57:14	-																									
*57:24	-																									
*57:45, 57:51	-								28																	
*58:01:01-58:01:02, 58:01:04-	B58,																									
58:01:09, 58:04-58:05, 58:10N-	Null, -																									
58:15, 58:19, 58:21-58:24, 58:29-																										
58:33, 58:35																										
*58:01:03, 58:02, 58:06, 58:16,	B58, -																									
58:25-58:26																										
*58:07	B58																36	37								
*58:08:01	B17,															33										
*58:08:02	B5															33										
*58:09	B17															36										
*58:17N	Null															36										
*58:18	-								27							36										
*58:20	-																								45	
*58:27	-																									
*58:28, 58:34	-																									
*59:01:01-59:01:02, 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-	B78, -															33										
78:03, 78:07																										
*78:02:01, 78:04	B78,															33										
B35																										
*78:05	-															33										
*78:06	-															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	

101.701.24/06 – including Taq pol., IFU-01
 101.701.24u/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		Well No.	
								60				66				70									*57:01:01-57:01:04, 57:01:06-57:01:12, 57:06, 57:08, 57:10, 57:15-57:16, 57:18-57:20, 57:22B57, – 57:23, 57:25-57:27, 57:29-57:30, 57:33-57:38, 57:40-57:41, 57:4357:44, 57:48-57:50, 57:52, 58:36 ¹⁴	
								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, 57:05, 57:17, 57:28N, 57:32, 57:39, 57:42, 57:46	
								60				66				70				B57					*57:04	
	53							60				66				70				B57					*57:07	
	53							60				66				70				B57					*57:09	
			55					60				66				71				B57					*57:12	
	53							60				66				70				–					*57:14	
								58	60							70				–					*57:24	
																									*57:45, 57:51	
								60				67				70									*58:01:01-58:01:02, 58:01:04-B58, 58:01:09, 58:04-58:05, 58:10N-Null, – 58:15, 58:19, 58:21-58:24, 58:29, 58:33, 58:35	
								60				67				70				B58, –					*58:01:03, 58:02, 58:06, 58:16, 58:25-58:26	
								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	
								60				67				70				–					*58:27	
								60				67				70				–					*58:28, 58:34	
								58				64				70				B59, –					*59:01:01-59:01:01-59:01:02, 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				B78, –					*78:01:01-78:01:02, 78:02:02-78:03, 78:07	
								59								68				B78, B35					*78:02:01, 78:04	
								59	62							71				–					*78:05	
								59	62							71				–					*78:06	
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
*81:01	B81																								
*81:02	B81																								48
*81:03-81:05	Null, -																								
*82:01-82:03	B82, -								32			35								43					
*83:01	-																	41							
A*23:31, A*24:106, C*16:10									30																
A*24:174																	37								
A*26:68, A*68:56, C*06:20, C*12:50																									
C*01:30									28																
C*02:06, C*02:47																									
C*02:23, C*04:77		25																							
C*03:05, C*03:25, C*03:27									27																
C*03:12, C*03:19																									
C*03:102																				41					
C*03:129																									
C*07:46																32									
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

101.701.24/06 – including *Taq pol.*, IFU-01
 101.701.24u/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			Well No.
			52			56	57													71	72	B81			*81:01	
			52				57													71	72	B81			*81:02	
			52				57													71	72	Null, –			*81:03-81:05	
			52			56									65					71		B82, –			*82:01-82:03	
			52	53		56						63								71		–			*83:01	
																									A *23:31, A *24:106, C *16:10	
																									A *24:174	
																									A *26:68, A *68:56, C *06:20,	
																									C *12:50	
																									C *01:30	
																									C *02:06, C *02:47	
																									C *02:23, C *04:77	
																									C *03:05, C *03:25, C *03:27	
																									C *03:12, C *03:19	
																									C *03:102	
49																									C *03:129	
																									C *07:46	
																									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.

101.701.24/06 – including Taq pol., IFU-01
101.701.24u/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, 54, 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](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 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 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 and 08:62 and 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*13:21 and 13:35 and the B*44:135 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 and 39:50 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 the B*35:32:01-35:32:02, 35:37, 35:53N, 35:64, 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

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resolution primer set. These alleles can be separated by the respective high resolution primer sets.

¹⁰The 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.

¹¹The B*54:01:02 and the B*55:01:07-55:02:06, 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 and 55:50 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 and 55:49 and the B*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.

¹⁴The B*57:01:01-57:01:04, 57:01:06-57:01:12, 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 and 57:52 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.

‘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*10:03 alleles													
													Well ⁶
	73	74	75	76	77	78	79	80	81	82	83	84	
Length of spec. PCR product(s)	205	200	200	210	120	80	85	100	210	170	90	175	
	255		215		220	210	210	175	235	215	135		
										250	180		
Length of int. pos. control ¹	515	430	430	430	430	430	430	430	430	515	430	430	
5'-primer(s) ²	13 (124) 5'-A.T 3' 14 (129) 5'-gAA 3'	14 (126) 5'-gAA 3' 13 (126) 5'-Agg 3'	13 (126) 5'-Agg 3' 13 (126) 5'-gTC 3'	13 (126) 5'-gTC 3' 13 (126) 5'-gTC 3'	13 (125) 5'-gTC 3' 47 (227) 5'-gTT 3'	13 (125) 5'-gTC 3' 16 (133) 5'-gTT 3'	13 (125) 5'-gTC 3' 13 (125) 5'-gTT 3'	14 (127) 5'-ATA 3' 13 (127) 5'-gTT 3'	16 (133) 5'-ATA 3' 14 (127) 5'-gTT 3'	26 (165) 5'-TAT 3' 58 (261) 5'-gAg 3'	26 (164) 5'-gTA 3' 31 (178) 5'-gCg 3'		
										13 (125) 5'-ATA 3' 14 (127) 5'-gTA 3'			
										13 (125) 5'-gTT 3' 16 (133) 5'-gTT 3'			
3'-primer(s) ³	67 (286) 5'-gAg 3'	67 (286) 5'-gAT 3'	67 (286) 5'-gAT 3'	67 (286) 5'-gAA 3'	73 (305) 5'-ggC 3'	26 (164) 5'-ggT 3'	28 (171) 5'-CTC 3'	33 (184) 5'-gTg 3'	71 (298) 5'-CTC 3'	58 (260) 5'-CCT 3'	57 (257) 5'-CgA 3'	74 (307) 5'-Cgc 3'	
										73 (305) 5'-ggC 3'	74 (307) 5'-CAG 3'	73 (305) 5'-ggC 3'	
										77 (317) 5'-CAC 3'	86 (344) 5'-CAC 3'	78 (319) 5'-CAC 3'	
Well No.	DR	73	74	75	76	77	78	79	80	81	82	83	84
DRB1 allele ⁴	ser ⁵												
*01:01-01:02:08, 01:04-01:38, 01:40N-01:41, 01:43-01:45	DR1, Null, -	73											
*01:03, 01:39N	DR1, DR103, Null		74										
*01:42	-	73	74										
Well No.	DR	73	74	75	76	77	78	79	80	81	82	83	84

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INTERPRETATION TABLE											
DR low resolution SSP typing											
Amplification patterns of the DRB1*01:01 to DRB1*10:03 alleles											
Well ⁶											
85	86	87	88	89	90	91	92	93	94	95	96
100	85	215	195	175	100	110	110	160	215	175	
170	105		225		140	135	175	240			Length of spec. PCR product(s)
					155	170	225				Length of int. pos. control ¹
430	430	430	430	430	430	430	430	430	430	430	5'-primer(s) ²
13 (125) 5'-gTC 3'	16 (133) 5'-gTT 3'	10 (116) 5'-gCT 3'	10 (116) 5'-gCT 3'	13 (125) 5'-gTC 3'	1 st I -CAA 3'	26 (164) 5'-gTA 3'	13 (125) 5'-gTC 3'	10 (116) 5'-gCT 3'	28 (170) 5'-gAT 3'	13 (125) 5'-gTA 3'	Negative control
16 (133) 5'-gTC 3'		12 (122) 5'-TAT 3'	12 (122) 5'-TAT 3'		37 (197) 5'-gTT 3'	34 (189) 5'-CAg 3'	34 (189) 5'-CAg 3'	10 (116) 5'-gCT 3'			3'-primer(s) ³
38 (200) 5'-CgT 3'		13 (125) 5'-gTC 3'	13 (125) 5'-gTC 3'		37 (197) 5'-gTA 3'			38 (199) 5'-TCC 3'			
		16 (133) 5'-gTT 3'									
		16 (133) 5'-gTC 3'									
58 (260) 5'-CCT 3'	30 (175) 5'-gTg 3'	70 (295) 5'-gTC 3'	67 (286) 5'-gAA 3'	58 (260) 5'-Cgg 3'	42 (213) 5'-TCA 3'	57 (257) 5'-CAg 3'	57 (257) 5'-CAg 3'	51 (239) 5'-CCC 3'	87 (346) 5'-CTC 3'	57 (258) 5'-gCg 3'	
58 (260) 5'-CCT 3'	38 (199) 5'-CAg 3'	71 (299) 5'-gCT 3'	71 (298) 5'-CgC 3'	58 (260) 5'-CAg 3'	57 (257) 5'-CAg 3'	70 (295) 5'-CTg 3'	60 (265) 5'-gTg 3'	77 (317) 5'-AAT 3'	87 (346) 5'-CTT 3'	58 (260) 5'-CCT 3'	
58 (260) 5'-CCT 3'			71 (298) 5'-CTC 3'		71 (298) 5'-CgC 3'	70 (296) 5'-TCC 3'	70 (296) 5'-TCC 3'				
						74 (307) 5'-CAg 3'					
85	86	87	88	89	90	91	92	93	94	95	96
DR ser ⁵	Well No. DRB1 allele ⁴										
	*01:01:01-01:02:08, 01:04- DR1, Null, –										
	01:38, 01:40N-01:41, 01:43-01:45										
	DR1, DR103, Null	*01:03, 01:39N									
	–	*01:42									
85	86	87	88	89	90	91	92	93	94	95	96
DR	Well No.										

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Well No.	DR	73	74	75	76	77	78	79	80	81	82	83	84
*03:01:01-01:03:01:19, 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	DR3, DR17, Null, -					77	78						
*03:02:01-03:03, 03:27, 03:29, 03:38, 03:53, 03:74	DR3, DR18, -					77		79					
*03:07, 03:17, 03:21, 03:24, 03:32, 03:35, 03:39- 03:41, 03:49	DR3, -					77							
*03:08, 03:65	DR3, -					77	78						83
*03:10	DR3					77	78						
*03:42, 03:69	-					77							
*03:46, 03:64	-					77	78						
*03:76	-						78						84
*04:01:01-04:61, 04:63- 04:68, 04:70-04:72:02, 04:74-04:104, 04:106- 04:107	DR4, DR3, Null, -								80				
*04:62, 04:69, 04:73, 04:105	DR4, -								80				
*07:01:01-01:07:01:04, 07:03-07:22	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	DR8, -												82
*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, 08:36-08:38, 08:45-08:49	DR8, -												82
*08:08	DR8												82
*08:09, 14:15 ⁵	DR8												82
*08:20, 13:18, 13:47, 13:55 ⁶	DR13, -												
*08:21	DR8												82
*08:31, 08:41, 11:67 ⁷	DR8, DR11, -												82
*08:32	-												82
*08:35	-												82
*08:40	-						78						82
*09:01:02-09:01:05, 09:01:07-09:02:02, 09:04- 09:17	DR9, -												83
*09:01:06, 09:03	DR9												83
Well No.	DR	73	74	75	76	77	78	79	80	81	82	83	84

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85	86	87	88	89	90	91	92	93	94	95	96	DR	Well No.
				89								DR3, DR17, Null, -	*03:01:01:01-03:01:19, 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
				89								DR3, DR18, -	*03:02:01-03:03, 03:27, 03:29, 03:38, 03:53, 03:74
				89								DR3, -	*03:07, 03:17, 03:21, 03:24, 03:32, 03:35, 03:39- 03:41, 03:49
85					91	92						DR3, -	*03:08, 03:65
				87	89							DR3	*03:10
												-	*03:42, 03:69
												-	*03:46, 03:64
												-	*03:76
												DR4, DR3, Null, -	*04:01:01-04:61, 04:63- 04:68, 04:70-04:72:02, 04:74-04:104, 04:106- 04:107
					90							DR4, -	*04:62, 04:69, 04:73, 04:105
												DR7, Null, -	*07:01:01:01-07:01:04, 07:03-07:22
				88									*08:01:01-08:02:04, 08:04:01-08:07, 08:11,
												DR8, -	08:16-08:17, 08:22, 08:24, 08:26, 08:28, 08:39, 08:42- 08:44
					88	90						DR8, -	*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, 08:36-08:38, 08:45-08:49
					88		92					DR8	*08:08
				87	88	89		92				DR8	*08:09, 14:15 ⁵
					87	88		92				DR13, -	*08:20, 13:18, 13:47, 13:55 ⁶
85					87	88		92				DR8	*08:21
					86			92				DR8, DR11, -	*08:31, 08:41, 11:67 ⁷
								92				-	*08:32
												-	*08:35
												-	*08:40
								91					*09:01:02-09:01:05, 09:01:07-09:02:02, 09:04- 09:17
85	86	87	88	89	90	91	92	93	94	95	96	DR	Well No.

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Well No.	DR	73	74	75	76	77	78	79	80	81	82	83	84
*10:01:01-10:04	DR10, –												84
*11:01:01-11:01:16, 11:04:01-11:04:08, 11:06:01-11:06:02, 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, 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	DR11, –												
*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	DR11, DR13, –						78						
*11:05	DR11												
*11:07, 11:53, 11:103, 11:105, 11:107	DR11, –					77						83	
*11:08:01-11:08:02, 11:18- 11:19:03, 11:42, 11:57	DR11, –												
*11:13:01-11:13:02	DR11							w					
*11:17, 11:52	DR11, DR14												
*11:22, 11:98, 11:104	–												
*11:23, 11:25, 11:96	DR11, –												
*11:26, 11:34	DR11						79						
*11:31, 11:45, 11:64, 11:119	DR11, –												
*11:55	DR11												
*11:59, 11:80, 11:83, 11:87	DR11, –						78						84
*11:69, 11:82	–												
*11:73, 11:79	–						78						
*11:89	–												
*12:01:01-12:01:04, 12:03:02, 12:05-12:12, 12:14, 12:17, 12:24N- 12:25, 12:28-12:30, 12:34- 12:35	DR12, Null, –												
*12:02:01-12:02:05, 12:13, 12:15, 12:18-12:21, 12:23, 12:26-12:27, 12:31N-12:33	DR12, Null, –												
Well No.	DR	73	74	75	76	77	78	79	80	81	82	83	84

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85	86	87	88	89	90	91	92	93	94	95	96	DR	Well No.
85	87	88										DR10, -	*10:01:01-10:04 *11:01:01-11:01:16, 11:04:01-11:04:08, 11:06:01-11:06:02, 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, 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
85	87	88										DR11, -	*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
85		88										DR11	*11:05
85												DR11, -	*11:07, 11:53, 11:103, 11:105, 11:107
85		87										DR11, -	*11:08:01-11:08:02, 11:18- 11:19:03, 11:42, 11:57
85						91	92					DR11	*11:13:01-11:13:02
85						91	92					DR11, DR14	*11:17, 11:52
85												-	*11:22, 11:98, 11:104
85		87	88				92					DR11, -	*11:23, 11:25, 11:96
85												DR11	*11:26, 11:34
85		87					92					DR11, -	*11:31, 11:45, 11:64, 11:119
85			88					92				DR11	*11:55
85		87	88									DR11, -	*11:59, 11:80, 11:83, 11:87
85			88			90						-	*11:69, 11:82
85		87										-	*11:73, 11:79
85							92					-	*11:89
												DR12, Null, -	*12:01:01-12:01:04, 12:03:02, 12:05-12:12, 12:14, 12:17, 12:24N- 12:25, 12:28-12:30, 12:34- 12:35
												DR12, Null, -	*12:02:01-12:02:05, 12:13, 12:15, 12:18-12:21, 12:23, 12:26-12:27, 12:31N-12:33
85	86	87	88	89	90	91	92	93	94	95	96	DR	Well No.

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Well No.	DR	73	74	75	76	77	78	79	80	81	82	83	84
*12:04	DR12										82		
*12:16	-										82		
*12:22	-									81	82		
*13:01:01-13:02:01, 13:02:03-13:02:05, 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,	DR11, DR13, DR14, Null, -						78						
*13:02:02, 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, 13:94-13:95, 13:101, 13:115, 13:120, 13:133	DR13, -							78					
*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	DR13, DR11, DR6, -												
*13:06, 13:12:01-13:12:02, 13:25, 13:30, 13:56, 13:58, 13:60, 13:77, 13:82, 13:110, 13:118, 13:134	DR13, DR11, DR6, -												
*13:09	DR13												
*13:13, 13:119, 14:84,	DR13, -												
*13:15, 13:19, 13:53, 13:57, 13:104	DR13, -						78	79					
*13:17, 13:116	DR13, -						78			81			
*13:26	DR14							79					
*13:27, 13:41, 13:71	DR13						78					84	
*13:43	DR13						78						
*13:44, 13:86	-, -							79					
*13:45	DR13						78						
*13:67, 13:103	DR13, -												
*13:85	-						78	79					
*13:122	-						78						
*13:129	-						78					84	
Well No.	DR	73	74	75	76	77	78	79	80	81	82	83	84

101.701.24/06 – including Taq pol., IFU-01
 101.701.24u/06u – without Taq pol., IFU-02

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Lot-specific information

85	86	87	88	89	90	91	92	93	94	95	96	DR	Well No.
	86											DR12	*12:04
	86		88									-	*12:16
	86											-	*12:22
													*13:01:01-13:02:01, 13:02:03-13:02:05, 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, DR11, 13:54, 13:59, 13:61:01- DR13, 13:61:02, 13:63-13:65, DR14, 13:68-13:70, 13:72-13:76, Null, - 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,
		87	88	89								DR13, -	*13:02:02, 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, 13:94-13:95, 13:101, 13:115, 13:120, 13:133
		87		89								DR13, DR11, DR6, -	*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
		87		89								DR13, DR11, DR6, -	*13:06, 13:12:01-13:12:02, 13:25, 13:30, 13:56, 13:58, 13:60, 13:77, 13:82, 13:110, 13:118, 13:134
			88	89								DR13	*13:09
		87		89			92					DR13, -	*13:13, 13:119, 14:84,
		87	88	89								DR13, -	*13:15, 13:19, 13:53, 13:57, 13:104
			88									DR13, -	*13:17, 13:116
		87	88	89								DR14	*13:26
		87	88	89								DR13	*13:27, 13:41, 13:71
		87	88			91	92					DR13	*13:43
				89								-, -	*13:44, 13:86
		87	88		90		92					DR13	*13:45
		87	88									DR13, -	*13:67, 13:103
		87		89								-	*13:85
		87										-	*13:122
			88	89								-	*13:129
85	86	87	88	89	90	91	92	93	94	95	96	DR	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.: 41N

Lot-specific information

Well No.	DR	73	74	75	76	77	78	79	80	81	82	83	84
*14:01:01-14:01:02, 14:04, 14:07:01-14:07:02, 14:10, 14:26, 14:28, 14:31, 14:35, 14:38-14:39, 14:54-14:55, 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	DR14, DR1404 , DR4, DR6, –												
*14:01:03, 14:08, 14:23:02, 14:34, 14:72, 14:92N, 14:97	DR14, Null, –												
*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					
*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	DR1403 , DR14, DR6, –							79					
*14:05:01-14:05:03, 14:14, 14:23:01, 14:23:03, 14:36, 14:43-14:45, 14:56, 14:59, 14:64, 14:91, 14:96, 14:100, 14:103	DR14, –												
*14:11	DR14										82		
*14:16	DR6						78						
*14:18, 14:81	DR14, –							79					
*14:19, 14:21, 14:109	DR14, –						78	79					
*14:22, 14:105	DR14, –												
*14:24	DR14							79					
*14:25, 14:53	DR6, DR13, 14												
*14:27	DR14							79					
*14:32:01-14:32:02	DR14							w					
*14:37	DR14												
*14:42	–												
*14:46, 14:52	DR14												
*14:49, 14:119	DR14, –							79					
*14:50	DR14										81		
*14:58	DR14												
*14:65	DR6							w					
*14:68, 14:93	DR14, –										82		
*14:69	–												
*14:73	–												
*14:74	–												
*14:82	–						78						
*14:89	–							79					
Well No.	DR	73	74	75	76	77	78	79	80	81	82	83	84

101.701.24/06 – including Taq pol., IFU-01
 101.701.24u/06u – without Taq pol., IFU-02

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Lot No.: 41N

Lot-specific information

85	86	87	88	89	90	91	92	93	94	95	96	DR	Well No.
					90	91	92					DR14, DR1404 , DR4, DR6, -	*14:01:01-14:01:02, 14:04, 14:07:01-14:07:02, 14:10, 14:26, 14:28, 14:31, 14:35, 14:38-14:39, 14:54-14:55, 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
						91	92					DR14, Null, -	*14:01:03, 14:08, 14:23:02, 14:34, 14:72, 14:92N, 14:97
				89		91						DR14, DR6, -	*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
		87		89			92					DR1403 , DR14, DR6, -	*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
				89		91	92					DR14, -	*14:05:01-14:05:03, 14:14, 14:23:01, 14:23:03, 14:36, 14:43-14:45, 14:56, 14:59, 14:64, 14:91, 14:96, 14:100, 14:103
						91	92					DR14	*14:11
	87	88			90	91	92					DR6	*14:16
				89		91	92					DR14, -	*14:18, 14:81
	87			89		w						DR14, -	*14:19, 14:21, 14:109
	87	88			90	91	92					DR14, -	*14:22, 14:105
		88		89								DR14	*14:24
		87	88		90		92					DR6, DR13, 14	*14:25, 14:53
		87	88	89			92					DR14	*14:27
					90	91	92					DR14	*14:32:01-14:32:02
				88	89	90						DR14	*14:37
					89		92					-	*14:42
						91						DR14	*14:46, 14:52
						90	91	92				DR14, -	*14:49, 14:119
						90	91	92				DR14	*14:50
						90		92				DR14	*14:58
						89	91	92				DR6	*14:65
						90	91	92				DR14, -	*14:68, 14:93
		87				90		92				-	*14:69
				88		90	91	92				-	*14:73
		87				90	91	92				-	*14:74
						90	91	92				-	*14:82
						89		92				-	*14:89
85	86	87	88	89	90	91	92	93	94	95	96	DR	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.: 41N

Lot-specific information

Well No.	DR	73	74	75	76	77	78	79	80	81	82	83	84
*14:95	-						78						
*14:98	-							79					
*15:01:01-01-15:20, 15:22-15:24, 15:26, 15:28-15:33, 15:35-15:65, 15:67-15:69	DR15, DR2, Null, -			75									
*15:21	DR2			75									
*15:25	-			75		77							
*15:27, 15:34, 15:66	-			75									
*16:01:01-16:03, 16:05:01-16:05:02, 16:07-16:17, 16:19	DR16, Null, -				76								
*16:04, 16:18	DR16, -				76								
DRB3*01:01:02:01-01:15, DRB3*02:01-02:26, DRB3*02:28, DRB3*03:01:01-03:03	DR52, -												
DRB3*02:27	-												
DRB4*01:01:01:01-01:03:01:01, DRB4*01:03:01:03-01:08	DR53, -												
DRB4*01:03:01:02N	Null												
DRB5*01:01:01-01:14, DRB5*02:02-02:05	DR51, Null, -												
DRB1 allele ⁴	ser ⁵												
Well No.	DR	73	74	75	76	77	78	79	80	81	82	83	84

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 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*11171 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.

101.701.24/06 – including *Taq pol.*, IFU-01
101.701.24u/06u – without *Taq pol.*, IFU-02

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Lot No.: 41N

Lot-specific information

85	86	87	88	89	90	91	92	93	94	95	96	DR	Well No.
				89		91	92					-	*14:95
		87		89								-	*14:98
							w					DR15,	*15:01:01:01-15:20, 15:22-
												DR2,	15:24, 15:26, 15:28-15:33,
												Null, -	15:35-15:65, 15:67-15:69
						91						DR2	*15:21
							w					-	*15:25
												-	*15:27, 15:34, 15:66
												DR16,	*16:01:01-16:03, 16:05:01-
												Null, -	16:05:02, 16:07-16:17,
													16:19
												DR16, -	*16:04, 16:18
												DRB3*01:01:02-01-01:15,	
												DR52, -	DRB3*02:01-02:26,
													DRB3*02:28,
													DRB3*03:01:01-03:03
												-	DRB3*02:27
												DR53, -	DRB4*01:01:01-01:
													01:03:01:01,
													DRB4*01:03:01-03-01:08
												Null	DRB4*01:03:01:02N
												DR51, -	DRB5*01:01:01-01:14,
													DRB5*02:02-02:05
												ser ⁵	DRB1 allele ⁴
85	86	87	88	89	90	91	92	93	94	95	96	DR	Well No.

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.

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 and 13:55 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 and 13:119 and 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.: 41N

Lot-specific information

			Lot No.:	Well															
				1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
				201191801	201191802	201191803	201191804	201191805	201191806	201191807	201191808	201191809	201191810	201191811	201191812	201191813	201191814	201191815	201191816
	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	-	+	-	+	-	-	-	-	-	-	-	-	+	-	-	-

101.701.24/06 – 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.: 41N

Lot-specific information

CELL LINE VALIDATION SHEET									
			HLA-A low resolution primer set						
			Well						
			17 18 19 20 21 22 23 24						
			201191817 201191818 201194019 201191820 201191821 201191822 201191823 201193124						
IHWG 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**

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

Lot No.: 41N

Lot-specific information

CELL LINE VALIDATION SHEET

HLA-B low resolution SSP kit

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.: 41N

Lot specific information

CELL LINE VALIDATION SHEET**HLA-B low resolution SSP kit**

				Prod. No.:	Well													
					41	42	43	44	45	46	47	48	49	50	51	52	56	
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.: 41N

Lot-specific information

CELL LINE VALIDATION SHEET														
HLA-B low resolution SSP kit														
													Well	
													Prod. No.:	
													57 58 59 60 61 62 63 64 65 66 67 68 69 70 71 72	
													201190033 201190034 201190035 201190036 201190037 201190038 201190039 201190040	
													201190041 201190042 201190043 201190044 201298145 201190046 201190047 201188648	
IHWG 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.: 41N

Lot-specific information

CELL LINE VALIDATION SHEET																				
DR low resolution primer set																				
					Well															
					73	74	75	76	77	78	79	80	81	82	83	84	85	86	87	88
Prod. No.:					201191601	201191602	201191603	201191604	201191605	201191606	201191607	201191608	201298209	201191610	201191611	201298212	201191613	201191614	201193315	201191616
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

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Lot No.: 41N

Lot-specific information

CELL LINE VALIDATION SHEET									
DR low resolution primer set									
					Well				
					89	90	91	92	93
IHWG 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

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 “Instructions for Use” (IFU)

Lot No.: 41N

Lot-specific information

CERTIFICATE OF ANALYSIS

Product number:	101.701-24/06 – including <i>Taq pol.</i> 101.701-24u/06u – without <i>Taq pol.</i>
Lot number:	41N
Expiry date:	2014-August-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	2011-931-01	9	2011-918-09	17	2011-918-17
2	2011-918-02	10	2011-918-10	18	2011-918-18
3	2011-931-03	11	2011-918-11	19	2011-940-19
4	2011-918-04	12	2011-918-12	20	2011-918-20
5	2011-918-05	13	2011-918-13	21	2011-918-21
6	2011-918-06	14	2011-918-14	22	2011-918-22
7	2011-918-07	15	2011-931-15	23	2011-918-23
8	2011-918-08	16	2011-918-16	24	2011-931-24

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 solutions 1 and 10 were tested by separately adding one 3'-primer. Additional 3'-primers in primer solutions 3, 6, 18 and 19 were tested by separately adding one 5'-primer.

In primer solutions 2, 9, 10, 11 and 15 one or two 5'-primers were not possible to test, and in primer solutions 3, 8, 18 and 19 one 3'-primer was not possible to test.

Well No.	Production No.	Well No.	Production No.	Well No.	Production No.
25	2011-900-01	41	2011-900-17	57	2011-900-33
26	2011-900-02	42	2011-900-18	58	2011-900-34
27	2011-900-03	43	2011-900-19	59	2011-900-35
28	2011-900-04	44	2012-981-20	60	2011-900-36
29	2011-900-05	45	2011-900-21	61	2011-900-37
30	2011-900-06	46	2011-900-22	62	2011-900-38
31	2011-900-07	47	2011-900-23	63	2011-900-39
32	2011-900-08	48	2011-900-24	64	2011-900-40
33	2011-900-09	49	2011-900-25	65	2011-900-41
34	2011-900-10	50	2011-900-26	66	2011-900-42
35	2011-900-11	51	2011-900-27	67	2011-900-43
36	2011-900-12	52	2011-900-28	68	2011-900-44
37	2011-900-13	53	2011-900-29	69	2012-981-45
38	2011-900-14	54	2011-900-30	70	2011-900-46
39	2011-900-15	55	2011-900-31	71	2011-900-47
40	2011-900-16	56	2011-900-32	72	2011-886-48

101.701.24/06 – including *Taq pol.*, IFU-01
 101.701.24u/06u – without *Taq pol.*, IFU-02

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Lot No.: 41N**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, 37, 39 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 and 66 one 5'-primer was not possible to test, and in primer mixes 62 and 66 one 3'-primer was not possible to test.

Well No.	Production No.	Well No.	Production No.	Well No.	Production No.
73	2011-916-01	81	2012-982-09	89	2011-916-17
74	2011-916-02	82	2011-916-10	90	2011-933-18
75	2011-916-03	83	2011-916-11	91	2011-916-19
76	2011-947-04	84	2012-982-12	92	2011-916-20
77	2011-916-05	85	2011-916-13	93	2011-916-29
78	2011-916-06	86	2011-916-14	94	2011-916-30
79	2011-916-07	87	2011-933-15	95	2011-933-31
80	2011-916-08	88	2011-916-16		

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 and 88 were not possible to test. One or two of the 3'-primers in primer solution 73, 75, 76, 85 and 94 were not possible to test.

The negative control primer pairs, **Production No. 2011-928-01**, can detect contamination with PCR products diluted 10⁻⁷.

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

Date of approval: 2012-February-28

Approved by:

Production Quality Control

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.: 41N

Lot-specific information

Declaration of Conformity

Product name: Olerup SSP® HLA-A-B-DR SSP Combi Tray

Product number: 101.701-24/06

Lot number: 41N

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 13485:2003, 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-February-11

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

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Lot No.: 41N

Lot-specific information

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