

Lot No.: 61F

Lot-specific information

## Olerup SSP® HLA-A-B-DR SSP Combi Tray

Product number:	101.701-24u/06u – without <i>Taq</i> pol.
Lot number:	61F
Expiry date:	2011-February-01
Number of tests:	24 tests – Product No. 101.701-24u 6 tests – Product No. 101.702-06u
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. 61F.

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

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. 98E**).

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

Well	5'-primer	3'-primer	rationale
15	Added	Added	Primers added for the A*3026 and A*3028 alleles.
17	Added	Added	Primer pair added for improved resolution.
18	-	Added	Primer added for the A*3321 allele.
20		Modified	Primer modified to increase specificity.

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. 98E**).

The HLA-B low resolution 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. 98E**).

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

Well	5'-primer	3'-primer	rationale
95	-	Exchange	Primer exchanged to avoid co-amplification of the DRB1*0905 allele.

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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
<b>product</b>						
<b>5'-primer<sup>1</sup></b>	<b>164</b>	<b>340</b>	<b>440</b>	<b>45</b>	<b>45</b>	<b>43</b>
	5'-CAC <sup>3'</sup>	5'-Agg <sup>3'</sup>	5'-TTA <sup>3'</sup>	5'-Tg g <sup>3'</sup>	5'-Tg g <sup>3'</sup>	5'-Tg g <sup>3'</sup>
<b>3'-primer<sup>2</sup></b>	<b>231</b>	<b>2<sup>nd</sup> I</b>	<b>507</b>	<b>59</b>	<b>58</b>	<b>57</b>
	5'-TgC <sup>3'</sup>	5'-AAA <sup>3'</sup>	5'-TTg <sup>3'</sup>	5'-CTC <sup>3'</sup>	5'-ggC <sup>3'</sup>	5'-CTC <sup>3'</sup>
<b>A*</b>	<b>+</b>	<b>+</b>	<b>+</b>			
<b>B*</b>	<b>+</b>	<b>+</b>	<b>+</b>			
<b>Cw*</b>	<b>+</b>	<b>+</b>	<b>+</b>			
<b>DRB1</b>				<b>+</b>	<b>+</b>	
<b>DRB3</b>				<b>+</b>	<b>+</b>	
<b>DRB5</b>				<b>+</b>		
<b>DQB1</b>						<b>+</b>
<b>DPB1</b>						<b>+</b>

<sup>1</sup>The nucleotide position for HLA class I genes and the codon for HLA class II genes, in the 2<sup>nd</sup> or 3<sup>rd</sup> exon, matching the specificity-determining 3'-end of the primer is given. Nucleotide and codonnumbering 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.

<sup>2</sup>The nucleotide position for HLA class I genes and the codon for HLA class II genes, in the 2<sup>nd</sup> or 3<sup>rd</sup> exon or the 2<sup>nd</sup> 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](http://www.ebi.ac.uk/imgt/hla) web site. The sequence of the 3 terminal nucleotides of the primer is given.

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## PRODUCT DESCRIPTION

### HLA-A-B-DR SSP Combi Tray

#### CONTENT

The primer set contains 5'- and 3'-primers for grouping the HLA-A\*0101 to A\*8001 alleles into the corresponding serological groups A1 to A80.

The primer set contains 5'- and 3'-primers for grouping the B\*0702 to B\*8301 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\*0101 to DRB1\*1003 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. '61F'.

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\*1827 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.

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 A\*3028 will be amplified by primer mix 66, that the Cw\*0206 allele will be weakly amplified by primer mixes 34 and 67, that the Cw\*0223 allele will be amplified by primer mix 25, that the HLA-Cw\*0305, 0325 and 0327 alleles will be amplified by primer mix 27, that the Cw\*0746 allele will be amplified by primer mix 32, and that the Cw\*150204 allele will be amplified by

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primer mix 64. Thus, the interpretation of HLA-B low resolution typings is only influenced by this HLA-A allele and seven HLA-Cw alleles and not by other alleles of other HLA class I genes.

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

### UNIQUELY IDENTIFIED ALLELES

All the HLA-A alleles, i.e. **A\*0101 to A\*8001**, recognized by the HLA Nomenclature Committee in January 2009<sup>1</sup> will be amplified by the primers in the HLA-A low resolution primer set, **wells 1 to 24**. The HLA-A alleles will be grouped into their corresponding serological specificities<sup>2</sup>.

All the HLA-B alleles, i.e. **B\*0702 to B\*8301**, recognized by the HLA Nomenclature Committee in January 2009<sup>1</sup> 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 specificities<sup>3</sup>.

All the HLA-DRB1, -DRB3, -DRB4<sup>4</sup> and –DRB5 alleles, i.e. **DRB1\*010101 to 1003**, **DRB3\*010101 to DRB3\*0303**, **DRB4\*01010101 to DRB4\*0107**, **DRB5\*010101 to DRB5\*0205**, recognized by the HLA Nomenclature Committee in January 2009<sup>2</sup> 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 specificities<sup>5</sup>.

<sup>1</sup>HLA-A, HLA-B and HLA-DRB alleles listed on the IMGT/HLA web page 2009-January-16, release 2.24.0, [www.ebi.ac.uk/imgt/hla](http://www.ebi.ac.uk/imgt/hla).

<sup>2</sup>The A\*0318 and A\*2619 alleles will give rise to identical amplification patterns. These two alleles can be separated by the respective high resolution SSP primer sets.

The A\*2314, A\*2405, A\*241302 and A\*2424 alleles will give rise to identical amplification patterns. These four alleles can be separated by the respective high resolution SSP primer sets.

<sup>3</sup>The B\*0826 and the B\*4207 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\*1408 and the B\*3925N, B\*3930 and B\*3932 to 3934 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\*1829 and the B\*3523, B\*3537, B\*3553N, B\*3564, B\*3566 and B\*356801-356802 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\*5504, B\*5508, B\*5513, B\*5527 and the B\*5615, B\*5619N and B\*5622 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\*5523, B\*5532 and the B\*5618 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.

<sup>4</sup>The DRB4\*0201N and DRB4\*0301N null alleles will not be amplified by the DR low resolution primer set.

<sup>5</sup>The DRB1\*0809, DRB1\*0821 and DRB4\*1415 alleles yield identical amplification patterns except for the specific PCR product yielded by the DRB3 gene in linkage disequilibrium with the DRB1\*1415 allele.

The DRB1\*0820, DRB1\*1318, DRB1\*1347 and DRB1\*1355 alleles yield identical amplification patterns except for the specific PCR product yielded by the DRB3 gene in linkage disequilibrium with the DRB1\*1318, DRB1\*1347 and DRB1\*1355 alleles.

The DRB1\*0831 and DRB1\*1167 alleles yield identical amplification patterns except for the specific PCR product yielded by the DRB3 gene in linkage disequilibrium with the DRB1\*1167 allele.

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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 <sup>1</sup>	Size of control band <sup>2</sup>	HLA-A serology <sup>3</sup>	Amplified HLA-A alleles <sup>4,11,12</sup>
1 <sup>5</sup>	120, 145 bp	<b>800 bp</b>	A1, A36	01010101-0104N, 0106-0133, 3601-3604
2 <sup>6</sup>	135, 200, 255 bp	1070 bp	A2	02010101-020115, 020117-020119, 020121-0222, 0224-023501, 023503-0247, 0249-0297, 0299, 9201-9221, 9223-9228, 9230-9256
3 <sup>7</sup>	205, 235 bp	1070 bp	A1, A3, A11, A24, A32, A34, A36	0112, 0119, 0121, 03010101-0317, 0319-0346, 1125, 2492, 3204, 3402-3404, 3407, 3408, 3602
4 <sup>7</sup>	190 bp	<b>800 bp</b>	A1, A2, A3, A11, A26, A30, A36	01010101-0104N, 0106, 0107, 0109-0111N, 0113, 0116N-0118N, 0120-0129, 0131N-0133, 0278, 0312, 0318, 110101-1127, 1129-1140, 2619, 3008, 3604
5	160, 535 bp	<b>800 bp</b>	A3, A23, A24, A31, A32	0330, 2301-2319Q, 24020101-2411N, 241301-2415, 2417-2464, 2466-2488, 2490N-2497, 3108, 3205, 3213
6	165, 200 bp	<b>800 bp</b>	A2, A23, A24, A29, A80	9222, 2301-2319Q, 2405, 241302, 2424, 2907, 8001, <b>B*1827</b>
7	175, 205 bp	1070 bp	A2, A23, A24, A26, A33, A68	021701-021702 <sup>weakly</sup> , 2314, 24020101-2411N, 241301-241302, 2417-2450, 2454-2456, 2458-2463, 2466-2491, 2493, 2495-2497, 2616, 3319, 6845
8 <sup>7</sup>	165, 200 bp	<b>800 bp</b>	A2, A3, A11, A25, A26, A32, A34, A66, A68, A69	0255, 0324, 1110, 250101-2508, 260101-2606, 2608-2615, 2617, 2618, 2620-2637, 3215, 340101-3408, 6601-6608, 680101-6846, 6901
9 <sup>5</sup>	75 bp	<b>800 bp</b>	A25, A32	250101-2508, 320101-3202, 3204, 3206-3218

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<b>10<sup>5</sup></b>	85 bp	1070 bp	A2, A26, A33	9246, 260101-2602, 2604, 260701-2618, 2620, 2622-2629, 2632-2637, 3313
<b>11<sup>5,7,8</sup></b>	80, 175, 500 bp	1070 bp	A1, A11, A24, A26, A31, A34, A66	0113, 0128, 110101-1127, 1129-1140, 2419, 2444, 2603, 2606, 2621, 3103, 340101-3408, 6601, 6604-6608
<b>12</b>	185 bp	<b>800 bp</b>	A11, A25, A26, A31, A34, A43, A66	1111, 2506, 2609, 3103, 3104, 340101-3408, 4301, 6602, 6603
<b>13<sup>7</sup></b>	175, 225 bp	1070 bp	A1, A2, A3, A25, A26, A34, A43, A66, A74	0113, 0234-023503, 025601- 025602, 0262, 9203, 9235, 03010101-0307, 0309-0311N, 0313-0331, 0333-0335, 0337- 0340, 0342-0346, 250101-2505, 2507, 2508, 260101-260107, 2602 <sup>weakly</sup> , 2603, 2605-2608, 2610-2633, 2635-2637, 3408, 4301, 6601, 6604-6608, 7413
<b>14</b>	200, 240 bp	1070 bp	A29, A33	29010101-2919, 3313
<b>15<sup>5</sup></b>	90, 135, 205 bp	1070 bp	A1, A3, A30	0113, 0128, 0343, 300101-3004, 3006-3020, 3022-3025, 3027N
<b>16</b>	370, 400 bp	1070 bp	A31, A32	2914, 310102-3124, 3205
<b>17</b>	150, 180 bp	1070 bp	A29, A32	2913, 320101-3203, 3205-3218
<b>18</b>	200 bp	1070 bp	A33, A68	3301, 330301-3320, 3322, 3323, 6829
<b>19</b>	160, 200 bp	<b>800 bp</b>	A29, A74	2919, 7401-7413
<b>20<sup>9</sup></b>	155, 240 bp	<b>800 bp</b>	A2, A210, A24, A25, A30, A68	0210, 0234-023503, 0239, 0246, 0248, 0250, 0252, 025601- 025602, 0262, 0270, 0273, 0278, 0293, 0295, 9203, 9210, 9214, 9217, 9222, 9229, 9256, 2494, 2505, 3008, 680101-6846
<b>21</b>	240, 375 bp	<b>800 bp</b>	A2, A24, A26, A68, A69	0255, 2482, 2622, 3322, 6829, 6901
<b>22<sup>5,10</sup></b>	85, 240 bp	<b>800 bp</b>	A2, A30, A36	0234-023503, 0246, 0248, 025601-025602, 0262, 0270, 0278, 9203, 9229, 3008, 3601- 3604
<b>23<sup>5</sup></b>	75, 160 bp	<b>800 bp</b>	A2, A26, A68, A80	0255, 2603, 2605, 2606, 2621, 2630, 6805, 6815, 6820, 8001

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24	360 bp	1070 bp	A1, A3, A11, A33, A36, A74, A80	01010101-0104N, 0106, 0108- 0129, 0131N-0133, 0341, 110101-1111, 1113-1117, 1119- 1127, 1129-1140, 3313, 3601- 3604, 7410, 8001
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<sup>1</sup> Alleles are assigned by the presence of specific PCR product(s). However, the sizes of the specific PCR products may be helpful in the interpretation of HLA-A low resolution SSP typings. When the primers in a primer mix can give rise to 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 length 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.

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

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

In addition, wells number 4, 5, 6, 8, 9, 11, 12, 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.

<sup>3</sup>The serological reactivity of all HLA-A alleles is not known. In this table we use the information in the HLA Dictionary 2004 on the [www.ebi.ac.uk/imgt/hla](http://www.ebi.ac.uk/imgt/hla) web site and the information available at the [www.worldmarrow.org](http://www.worldmarrow.org) web site and have also inferred the serological grouping from the naming of the sequence-defined allele.

<sup>4</sup>For several HLA-A alleles only partial 1<sup>st</sup> 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.

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

<sup>6</sup>The primer pairs in vial 2 will in most samples give rise to two specific PCR fragments.

<sup>7</sup>Primer mixes 3, 4, 8, 11 and 13 may give rise to nonspecific amplifications.

<sup>6</sup>The primer pairs in vial 11 will in most samples give rise to two to three specific PCR fragments.

<sup>9</sup>Primer mix 20 may give rise to nonspecific amplifications.

<sup>10</sup>Primer mix 22 might faintly amplify most A\*11 alleles.

<sup>11</sup>The A\*0318 and A\*2619 alleles will give rise to identical amplification patterns. These two alleles can be separated by the respective high resolution SSP primer sets.

The A\*2314, A\*2405, A\*241302 and A\*2424 alleles will give rise to identical amplification patterns. These four alleles can be separated by the respective high resolution SSP primer sets.

<sup>12</sup>Primer mix 6 will amplify the B\*1827 allele.

'w', might be weakly amplified.

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## SPECIFICITY TABLE

### HLA-B low resolution primer set

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

Primer Mix	Size of spec. PCR product <sup>1</sup>	Size of control band <sup>2</sup>	HLA-B serol. <sup>3</sup>	Amplified HLA-B alleles <sup>4</sup>
25 <sup>5,6</sup>	110 bp	800 bp	7, 15, 37, 40, 41, 42, 48	070201-071802, 0720-0732, 0734- 0739, 0741-0747, 0749N, 0750, 0752, 0754-0759, 0761-0768, 9538, 3707, 4015, 4016, 4023, 4032, 4108, 420501-420502, 4805, 4808, <b>4815, Cw*0223</b>
26	215 bp	1070 bp	8, 15, 44	080101-0825, 0827-0838, 9542, 4449
27 <sup>5,7</sup>	140, 235 bp	1070 bp	7, 8, 13, 15, 35, 40, 4005, 44, 46, 53, 57, 58	0720, 0724, 0760, 0821, 0825, 1301-1304, 1306-1308Q, 1310- 1323, 150106-150108, 1507, 152702-152703, 1536 <sup>weakly</sup> , 1545, 1555, 1568, 1589 <sup>weakly</sup> , 9526, 9535- 9537, 9539-9542, 9544-9550, 3505, 3516, 3517, 3522, 3530, 3551, 3558, 3572, 3589, 4005, 4071, 4408 <sup>weakly</sup> , 4454, 4457 <sup>weakly</sup> , 4460, 4611- 4617, 5314, 5714, 5715, 5717-5719, 5818, <b>Cw*0305, Cw*0325, Cw*0327</b>
28 <sup>8</sup>	130, 265 bp	1070 bp	13, 14, 15, 35, 40, 41, 44, 45, 47, 49, 50	1301-1304, 1306-1313, 1315-1323, 1401-1404, 1407N, 1409, 1546, 1553, 9506, 3547, 3563, 400101- 400106, 4007, 4010, 401401-4016, 4022N, 4023, 4025, 4030-4034, 4036, 4038, 4042, 4043, 4045, 4047-4049, 4051-4055, 4058-4063, 4065-4067, 4069, 407201-4073, 4076, 4077, 4079-4081, 4084, 4087, 4088, 4092, 4101-4108, 44020101-4405, 4409-4439, 4441- 4443, 4445-4456N, 4458N-4465, 4501-4509, 47010101-4705, 490101-4902, 4904, 4905, 5001, 5002, 5004
29 <sup>9</sup>	185, 235	1070 bp	14, 16, 27,	1401, 1407N, 1408, 2701-270402,

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	bp		37, 38, 39, 47, 64, 67	270502-2706, 2708-2710, 2712, 2713, 2716-2718, 2720, 2723, 2726, 2727, 2729, 2731, 2735- 2737, 2739-2742, 2744, 2745, 3702, 380101-3803, 3807-3817, 39010101-39010102L, 390103- 390201, 3903, 3905-390602, 3907 <sup>?</sup> , 3908, 3909, 3911, 3914, 3915, 3918, 391902, 3922, 3924- 3944, 3946, 4704, 4705, 670101
30 <sup>9</sup>	185 bp	<b>800 bp</b>	14, 35, 38, 39, 65	140201-140602, 1409, 3526, 3805, 3904, 3907 <sup>?</sup>
31	290 bp	1070 bp	15, 62, 63, 75, 76, 77, 46	15010101-150103, 150106-150107, 1502, 1504-1508, 151101-1515, 15170101-151702, 1519-1521, 1524-152701, 152703, 1528, 1530- 1536, 1538-1540, 1542-1546, 1548, 1550, 1555-1558, 1560, 1563, 1565, 1566, 1568, 1570, 1571, 1573, 1575-1579N, 1581-1589, 1592, 1594N, 1596, 1597, 9501, 9502, 9504-9507, 9509-9513, 9516-9518, 9520-9522, 9525, 9526, 9528, 9529, 9535-9550, 460101- 4618
32	165, 220, 330 bp	1070 bp	8, 15, 35, 37, 40, 41, 42, 44, 45, 51, 56, 57, 70, 71, 72	080101-0805, 0808N-0812, 0815- 0819N, 0821-0824, 0826, 0827, 0829-0836, 0838, 1503, 1509, 1510, 1518, 1523, 1529, 1537, 1546, 1547, 1549, 1551-1554, 1561, 1562, 1564, 1568, 1569, 1572, 1574, 1580, 1583, 1590, 1591, 1593, 1598, 1599, 9503, 9506, 9508, 9514, 9515, 9519, 9523, 9524, 9527, 9531-9534, 9543, 9551, 3587, 3712, 4012, 4101-410302, 4105-4108, 4201, 4202, 4204-4208, 4414, 4415, 4418, 4420, 4462, 4501-4509, 5108, 5120, 5136, 5144N, 5613, 5709, 8201, 8202, <b>Cw*0746</b>
33 <sup>5,9,10</sup>	165, 390 bp	<b>800 bp</b>	15, 35, 40, 44, 51, 52, 56, 58, 62, 63, 70, 78	150102, 1509, 1516-151702, 1567, 1595, 350402, 4026, 4028, 4462, 510101-510103, 510105-510203, 5103-510902, 5111N, 5112, 511302, 5114, 5117-5120, 5122, 5123, 5126-5130, 5132, 5133,

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Lot-specific information

				5137-5141N, 5143, 5144N, 5146, 5148-5161, 5163, 520101-5207, 5209-5213, 560501-5606, 5621, 5808, 7801-7806
34 <sup>9</sup>	180, 395 bp	800 bp	13, 15, 40, 55, 62, 70, 71, 72, 75	1301-130204, 1307N-1309, 1311, 1314-1320, 1322, 1323, 1509, 1510, 1518, 1521, 1523, 1537, 1544, 1551, 1552, 1566, 1572, 1580, 1590, 1593, 1599, 9508, 9514, 9515, 9519, 9524, 9533, 9534, 4048, 5522, 5524, <b>Cw*0206</b> <sup>weakly</sup>
35 <sup>5,6</sup>	105, 195 bp	1070 bp	7, 8, 15, 27, 38, 39, 40, 44, 45, 48, 55, 72	0727, 0750, 0804, 0817, 1503, 1547, 1549, 1554, 1561, 1562, 1564, 1568, 1569, 1591, 1598, 9503, 9523, 9527, 9531, 9532, 9551, 2718, 2729, 3803, 390201- 390202, 3908, 391301-391302, 3923, 3939, 4012, 4046, 4410, 4415, 4418, 4440, 4444, 4501, 4505-4507, 480101-4805, 4807- 4819, 5002, 5518, 8201, 8202
36	275 bp	1070 bp	7, 8, 13, 15, 18, 27, 35, 39, 40, 42, 44, 46, 48, 49, 51, 53, 54, 55, 56, 57, 58, 62, 63, 70, 71, 72, 75, 76, 77	0709, 0711, 0717, 0828, 0835, 0837, 1304, 1310, 15010101- 150104, 150106-1508, 151101- 1516, 1518-1521, 1523-1529, 1531-1536, 1538-1540, 1543, 1544, 1546, 1547, 1549-1557, 1560-1562, 1564-1572, 1574-1576, 1578-1582, 1584, 1585, 1587-1589, 1591-1598, 9501-9529, 9531, 9532, 9534-9536, 9538-9549N, 180101-1815, 1817N- 1825, 1827-1832, 2741, 350101- 350107, 3505, 3507-350803, 3510, 3511, 351401-3517, 3519-3521, 3523-3530, 3532, 3535, 3537, 3540N-3543, 3545-3554, 3557, 3558, 3561-3564, 3566-3569, 3571, 3572, 3576-3580, 3582, 3586, 3589-3594, 3907, 3943, 4003, 4020, 4038, 4052, 4059, 4060, 4209, 4417, 4443, 4509, 460101- 4610, 4612-4617, 4802, 4814, 4904, 4905, 5137, 5145, 5163, 530101-5303, 5305, 5306, 5308- 5316, 5406, 5409, 5414, 5514, 5523, 5532, 5603, 5609, 5618, 570101-570103, 5706, 5708, 5710,

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**Lot-specific information**

					5711, 5713-5716, 5718, 5719, 580101-5802, 5804-5807, 5809- 5819
<b>37</b>	195 bp	1070 bp	15, 35, 37, 38, 44, 45, 58, 76	1512, 1514, 1519, 1591, 9531, 3545, 3571, 370101-3709, 3712, 3713, 3817, 4417, 4443, 4509, 4617, 5807	
<b>38<sup>6</sup></b>	105, 435	1070 bp	7, 15, 41, 42, 59, 62, 63, 77	0704, 0725, 1513, 1516-151702, 1523, 1524, 1567, 1587, 1595, 4108, 420501-420502	
<b>39<sup>6</sup></b>	115 bp	1070 bp	18	180101-1815, 1817N-1828, 1830- 1832	
<b>40<sup>6</sup></b>	80 bp	1070 bp	27, 40, 44	2701-270402, 270502-2721, 2723- 2745, 4046, 4093, 4440, 4444	
<b>41</b>	150 bp	1070 bp	13, 15, 18, 27, 35, 37, 39, 40, 44, 48, 51, 53, 55, 56, 57, 58, 62, 75, 77	1301, 1306, 1307N, 1312, 1313, 1317, 1320, 1322, 1323, 1502, 1513, 1520, 1521, 1525, 1536, 1544, 1562, 1577, 1580, 1585, 1588, 1589, 9506, 9512, 9521, 9539, 9544, 1822, 2719, 2730, 350101-350403, 3506-350803, 3510-3517, 3519-3521, 3523-3530, 3533-3536, 3538-3542, 3545-3550, 3552, 3554-3557, 3559, 3561-3563, 3565Q, 3569-3571, 3574, 3576- 3578, 3580-3585, 3590-3594, 370101-370104, 3703N-3706, 3708, 3710, 3711, 3713, 3942, 4028, 44020101-4414, 4416, 4417, 4419N, 4421-4430, 4432-4440, 4442-4446, 4448-4452N, 4455- 446402, 4802, 5104, 5142, 5146, 5156, 530101-5313, 5315, 5316, 5514, 5609, 5611, 5612, 570101- 5710, 5712, 5714-5719, 580101- 580102, 5804, 5805, 5809-5815, 5817N, 5819, 8301	
<b>42</b>	135 bp	1070 bp	7, 8, 18, 35, 37, 39, 56, 78	0765, 0832, 180101-1808, 1810- 1815, 1817N-1832, 350101-3518, 352001-3524, 3528-3545, 3548, 3550-3555, 3557-3562, 3564-3572, 3774-3594, 3590-3594, 3711, 3714, 391901-391902, 5606, 7801-7805	
<b>43<sup>5,6</sup></b>	245, 400 bp	1070 bp	15, 62, 63, 70, 71, 72, 75, 76, 77, 40, 44	15010101-150104, 150106-1521, 1523-1540, 1542-1558, 1560-1599, 9501-9529, 9531-9551, 4012, 4410, 8201, 8202	

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**Lot-specific information**

<b>44<sup>5,9,11</sup></b>	205 bp	<b>800 bp</b>	7, 8, 15, 18, 37, 38	0727, 0802, 9515, 1809, 370101- 3704, 3705 <sup>weakly</sup> , 3706-3710, 3712, 3713, 380201-3804, 3808, 3815, 3817
<b>45</b>	170 bp	<b>800 bp</b>	15, 35, 38, 39, 67	1569, 9536, 3535, 380101-3809, 3811-3817, 39010101-39010102L, 390103-3920, 3922-3924, 3926- 3929, 3931, 3935, 3937-3942, 3944-3946, 5820, 670101-6702
<b>46<sup>6</sup></b>	110 bp	1070 bp	38	380101-3803, 3805, 3808-3817
<b>47</b>	400 bp	1070 bp	14, 38, 39, 64, 65	1401-1409, 380101-380202, 3804, 3805, 3808-3817, 39010101- 39010102L, 390103-390106, 3903- 3907, 3909, 3911, 3912, 3914, 3915, 3918-391902, 3922, 3924- 3938Q, 3940N, 3941, 3944-3946
<b>48</b>	430 bp	1070 bp	7, 8, 14, 39, 40, 41, 42, 45, 48, 50, 60, 64, 65, 67, 73	070201-0726, 0728-0735, 0737, 0739-0764, 0766-0768, 080101- 080106, 0804-0835, 0837, 0838, 1401-1409, 39010101-39010102L, 390103-3920, 3922-3946, 400101- 400106, 4007, 4009-4011 <sup>?</sup> , 401401-4016 <sup>?</sup> , 4018 <sup>?</sup> , 4021 <sup>?</sup> , 4022N <sup>?</sup> , 4023, 4024-4038 <sup>?</sup> , 4040 <sup>?</sup> , 4042-4046 <sup>?</sup> , 4048-4050 <sup>?</sup> , 4051, 4052-4058 <sup>?</sup> , 4059, 4060, 4061- 4069 <sup>?</sup> , 4071 <sup>?</sup> , 407201 <sup>?</sup> , 407202, 4073-4076 <sup>?</sup> , 4077, 4078 <sup>?</sup> , 4079, 4080-4088 <sup>?</sup> , 4090-4093 <sup>?</sup> , 4101- 4108, 4201, 4202, 4204-4209, 4501-4509, 480101-4817, 4819, 5001, 5002, 5004, 670101-6702, 7301, 8102
<b>49<sup>5,11</sup></b>	175 bp	1070 bp	15, 40, 44, 46, 48, 60	9516, 9524, 400101-400106, 4007, 4010, 4012, 4021-4023, 4025, 4033, 4036, 4038, 4042, 4043, 4046-4049, 4051, 4052, 4054, 4055, 4060-4063, 4065-4067, 4069, 4073, 4074, 4076, 4079, 4081, 4084, 4087, 4088, 4092, 4431, 4606, 480301-480302
<b>50</b>	130 bp	1070 bp	40, 61	400201-400602, 4008, 4009, 4011, 4013, 4018-4020, 4024, 4026-4029, 4035, 4037, 4039, 4040, 4044, 4050, 4056, 4057, 4064, 4068, 4070, 4071, 4074, 4075, 4078, 4082, 4085, 4086, 4089-4091, 4094

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**Lot-specific information**

<b>51<sup>5,6</sup></b>	110 bp	1070 bp	7, 8, 35, 41, 42, 55	0704, 0719, 0725, 080101-0805, 0807-0812, 0814-0819N, 0821- 0824, 0826-0838, 3587, 4101-4108, 4201, 4202, 4204-4207, 4209, 5520
<b>52</b>	325 bp	1070 bp	7, 15, 27, 35, 42, 45, 46, 54, 55, 56, 67, 73, 81	070201-070207, 0704-0707, 0709- 0712, 0713 <sup>weakly</sup> , 0714, 0715 <sup>weakly</sup> , 0717-0726, 0728-0731, 0733-0736, 0739-0749N, 0751-0768, 1576, 9501, 2701-270402, 270502-2711, 2713-2715, 2717, 2719-2721, 2724-2728, 2730-2738, 2740-2745, 3576, 4201, 4202, 4204-4206, 4208, 4209, 4506, 460101-460102, 4602 <sup>weakly</sup> , 4603-4618, 5401-5417, 550101-5505, 5507-5517, 5519- 5534, 5601-5616, 5618-5622, 5624, 670101-670102, 6702 <sup>weakly</sup> , 7301, 8101-8104N, 8201, 8202, 8301
<b>53<sup>6,12</sup></b>	110, 195, 225, 260 bp	1070 bp	35, 37, 44, 47, 51, 57	3538, 3545, 3571, 370101-370104, 3703N-3706, 3708, 3710-3713, 44020101-4414, 4416, 4417, 4419N-4436, 4438-4463, 4465, 5142, 5707, 5709, 8301
<b>54</b>	215 bp	<b>800 bp</b>	8, 12, 15, 41, 42, 44, 45, 51, 52, 53, 55, 56, 58	0809, 1583, 4101, 4105-4107, 4204, 4406, 4415, 4418, 4420, 4501-4509, 510101, 510103- 510108, 510201, 510203-5104, 5106-510901, 5110-5114, 5116- 512402, 5126-5146, 5148, 5149, 5151-5153, 5155-5163, 520102, 520104-5203, 520601-520602, 5209, 5306, 5520, 5613, 5808
<b>55</b>	130, 270 bp	1070 bp	18, 35, 37, 40, 46, 51, 53, 57, 58	1822, 3521, 3524, 3581, 3704, 4028, 460101-4618, 5104, 5146, 5156, 5302, 5306, 5714, 5809
<b>56<sup>6</sup></b>	90, 410 bp	1070 bp	7, 27, 35, 47, 54, 55, 56, 81	0765, 2702-270402, 270502-2711, 2713-2715, 2717, 2719-2721, 2724-2728, 2730-2738, 2740-2745, 3576, 47010101-4703, 5401-5417, 550101-5505, 5507-5517, 5519- 5534, 5601-5616, 5618-5622, 5624, 8101, 8201, 8202, 8301
<b>57<sup>6</sup></b>	90, 175 bp	1070 bp	15, 27, 35, 40, 48, 62, 75, 77, 81	1502, 1508, 151101-151103, 1513, 1515, 1521, 1531, 1544, 1555, 1588, 1589, 9512, 9521, 9539, 9544, 9548, 2724, 3546, 4031, 4045, 4080, 480101-480102, 4804,

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					4806, 4807, 4809, 4811, 4815, 4816, 4818, 4819, 8101-8104N
<b>58</b>	145 bp	1070 bp	40, 44, 49		4013, 4019, 4418, 4425, 4450, 490101-490102, 4904, 4905
<b>59<sup>6</sup></b>	120, 210 bp	<b>800 bp</b>	13, 15, 45, 49, 50, 51, 52, 55, 56, 58, 62, 63, 78		1316, 1504 <sup>weakly</sup> , 1516, 1542, 1567, 1595, 9537, 490101, 4902-4905, 5001, 5002, 5004, 510101-5103, 5105, 5107-510902, 5111N-5114, 5116-152402, 5126-5141N, 5143, 5144N, 5148-5155, 5157, 5158, 5160, 5161, 5163, 520101-5214, 550101-550104, 5503, 5505, 5509, 5511, 5515, 5517, 5521, 5524, 5525, 5528, 5529, 5531, 5533, 560501-5606, 5621, 5808, 7801- 7806
<b>60</b>	430 bp	1070 bp	27, 40, 44, 45, 51, 52, 53, 57, 58, 59		2702, 2730, 4013, 4019, 4406, 4425, 4450, 510101-512402, 5126- 5146, 5148, 5149, 5151-5153, 5155, 5158-5163, 520101-5212, 530101-5302, 5304-5308, 5310, 5314-5316, 570101-5711, 5713- 5716, 5718, 5719, 580101-5802, 5804-5816, 5820, 5902
<b>61</b>	145 bp	1070 bp	15, 35, 40, 41, 44, 45, 47, 50, 72		1546, 1553, 9506, 9543, 3519, 3547, 3563, 400101-4011, 401401- 4016, 4018, 4020, 4022N-4040, 4042-4045, 4048-4075, 4077-4092, 4094, 4101-4104, 4105 <sup>?</sup> , 4106- 4108, 4409, 4446, 4501-4509, 4702, 5001, 5002, 5004
<b>62<sup>9</sup></b>	300 bp	1070 bp	7, 8, 13, 15, 18, 27, 35, 37, 38, 39, 40, 41, 44, 45, 46, 47, 48, 49, 50, 52, 55, 57, 58, 62, 72, 76, 78		0754, 0817, 0838, 1301-1304, 1306, 1308Q-1323, 15010101- 150104, 150106-150108, 1503- 1507, 1512, 1514, 1519, 1520, 1524-152703, 1530, 1532-1536, 1538-1540, 1542, 1543, 1545-1550, 1553, 1554, 1556-1558, 1560-1563, 1565, 1566, 1568-1571, 1573-1575, 1577-1579N, 1581-1587, 1591, 1592, 1594N, 1596-1598, 9502- 9507, 9509-9511N, 9513, 9516- 9518, 9522, 9523, 9525-9529, 9531, 9532, 9535-9538, 9540-9542, 9545-9547, 9550, 9551, 1812, 2701-270402, 270502-2721, 2724- 2745, 3510, 3513, 3516, 3528, 3563, 3569, 3580, 370101-3707,

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				3709-3714, 3803, 3804, 390201- 390202, 3908, 391301-391302, 3922, 3923, 400101-4007, 4009- 4016, 4018-4024, 4026-4040, 4042-4067, 4070-4094, 4101-4108, 44020101-4405, 4407-4411, 4413- 4465, 4501-4505, 4507-4509, 4610-4618, 47010101-4705, 480101-4805, 4807-4815, 4817- 4819, 490101-4905, 5001, 5002, 5004, 520101-5214, 5518, 5534, 5712-5719, 580102, 5815-5820, 7805, 7806
63	160, 215 bp	1070 bp	15, 37, 44, 54	150104, 370104, 4094, 44020101- 440205, 4406, 4408, 4409, 4411, 4412, 4416, 4419N-4424, 4427, 4433, 4434, 4441, 4444, 4448, 4449, 4451-4453, 4455, 4459, 4463, 5401-5417, 8301
64 <sup>9</sup>	180, 210 bp	1070 bp	7, 13, 15, 18, 35, 39, 40, 45, 54, 55, 56, 59, 78	0765, 1306, 1542, 1586, 1804, 3560, 3917, 4058, 4508, 4618, 5401, 5402, 5405N, 5407, 5408N, 5410, 5412, 5413, 5416, 5417, 550101-5503, 5505, 5507, 5510- 5512, 5515, 5516, 5518, 5519, 5521, 5525, 5526, 5529-5531, 5533, 5534, 560501, 5606, 5610, 5623, 5901, 7801, 780202, 7803, <b>Cw*150204</b>
65 <sup>13</sup>	180 bp	1070 bp	13, 15, 40, 44, 45, 46, 49, 50, 51, 54, 56	1303, 1573, 4071, 4410, 4415, 4418, 4501, 4504-4507, 4611, 490101-4903, 5001, 5002, 5004, 5115, 5162, 5403, 5601, 5602, 5604, 5607, 5608, 5613, 5614, 5616, 5617, 5620, 5624, 5904, 8201, 8202
66 <sup>6</sup>	90, 240 bp	<b>800 bp</b>	55, 57	4618, 5514, 570101-5715, 5717- <b>5719, A*3028</b>
67 <sup>6,14</sup>	90 bp	1070 bp	13, 15, 39, 40, 56, 58	1311, 1573, 3917, 4048, 4071, 5162, 5602, 5604, 5610, 580101- 5802, 5804-5820, <b>Cw*0206</b> <sup>weakly</sup>
68 <sup>6</sup>	95 bp	1070 bp	7, 8, 18, 35, 37, 38, 39, 44, 51, 52, 53, 78	0765, 0832, 180101-1811, 1813- 1815, 1817N-1832, 350101- 350902, 3511, 3512, 351401-3515, 3517, 3518, 352001-3524, 3527, 3529-3545, 3548, 3550-3562,

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				3564-356802, 3570-3572, 3574- 3579, 3581-3594, 3708, 3806, 3807, 391901-391902, 4406, 510101-512402, 5126-5146, 5148- 5163, 530101-5316, 7801-7804
69 <sup>5,6</sup>	115, 150 bp	1070 bp	15, 18, 27, 35, 39, 46, 54, 55, 56, 62, 73, 75, 76	15010101-150104, 150106-150108, 1504, 1507, 1508, 151101-1512, 1514, 1515, 1519, 1524, 1526N- 1528, 1530, 1532, 1534, 1535, 1538, 1543, 1545, 1546, 1550, 1553, 1554, 1556-1558, 1560, 1563, 1566, 1568, 1570, 1571, 1573, 1575-1577, 1579N, 1581, 1582, 1585, 1587, 1592, 1594N, 1596, 1597, 9501, 9502, 9504, 9505, 9509-9511N, 9513, 9517, 9518, 9520, 9522, 9525, 9526, 9528, 9529, 9535, 9537, 9540, 9542-9549N, 1819, 2725, 351401- 351402, 3543, 3544, 3562, 3567, 3579, 3586, 3918, 3936, 460101- 4602, 4604, 4605, 4607N, 4609, 4610, 4612, 4614-4617, 5161, 5406, 5521, 5603, 7301
70	360 bp	1070 bp	Bw4 <sup>16</sup>	
71	355 bp	1070 bp	Bw6	
72 <sup>5</sup>	290 bp	<b>800 bp</b>	7, 8, 35, 37, 40, 41, 42, 48, 53, 81	070201-0706, 0708-0732, 0734- 0741, 0743-0752, 0754-0759, 0761- 0768, 080101-0808N, 0810, 0811, 0813-0815, 0817-0830N, 0832- 0838, 3566, 3587, 3707, 4015, 4016, 4030-4032, 4034, 4045, 4059, 4080, 4102, 4104, 4201, 4202, 420501- 4207, 4209, 480101-480102, 4805- 4812, 4814-4819, 5315, 8101-8104N

<sup>1</sup>Alleles are assigned by the presence of specific PCR product(s). However, the sizes of the specific PCR products may be helpful in the interpretation of HLA-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 length 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

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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.

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

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

In addition, wells number 30, 33, 34, 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.

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

<sup>3</sup>The serological reactivity of all HLA-B alleles is not known. In this table we use the information in the HLA Dictionary 2004 on the [www.ebi.ac.uk/imgt/hla](http://www.ebi.ac.uk/imgt/hla) web site and the information available at the [www.worldmarrow.org](http://www.worldmarrow.org) web site and have also inferred the serological grouping from the naming of the sequence-defined allele.

<sup>4</sup>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.

The B\*0826 and the B\*4207 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\*1408 and the B\*3925N, B\*3930 and B\*3932 to 3934 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\*1829 and the B\*3523, B\*3537, B\*3553N, B\*3564, B\*3566 and B\*356801-356802 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\*5504, B\*5508, B\*5513, B\*5527 and the B\*5615, B\*5619N and B\*5622 give rise to identical amplification patterns wih the HLA-B low resolution primer set. These alleles can be separated by the respective high resolution primer sets.

The B\*5523, B\*5532 and the B\*5618 give rise to identical amplification patterns wih the HLA-B low resolution primer set. These alleles can be separated by the respective high resolution primer sets.

<sup>5</sup>Primer mixes 25, 27, 33, 35, 43, 44, 49, 51, 69 and 72 may give rise to a primer oligomer artifact.

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

<sup>7</sup>Primer mix 27 will amplify the Cw\*0305, Cw\*0325 and Cw\*0327 alleles.

<sup>8</sup>Primer 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.

<sup>9</sup>Primer mixes 29, 30, 33, 34, 44, 62 and 64 have a higher tendency than other primer mixes to give rise to nonspecific amplifications.

<sup>10</sup>The B\*57 and B\*58 alleles might be faintly amplified by primer mix 33.

<sup>11</sup>The Cw\*1701 to Cw\*1704 alleles might be faintly amplified by primer mix 49.

<sup>12</sup>Primer mix 53 might generate a false band of about 500 base pairs. This band should be disregarded when interpreting HLA-B low resolution typings.

<sup>13</sup>The Cw\*0312 allele might be faintly amplified by primer mix 65.

<sup>14</sup>Primer mix 67 will amplify the Cw\*0206 allele.

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

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

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Lot-specific information

## SPECIFICITY TABLE

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

Primer Mix	Size of spec. PCR product <sup>1</sup>	Size of control band <sup>2</sup>	DR serology <sup>3</sup>	Amplified HLA-DRB <sup>4</sup> alleles
73	205 bp	<b>515 bp</b>	1	010101-010205, 0104-0120
74	195 bp	430 bp	103	0103
75 <sup>6</sup>	215, 260 bp	430 bp	15	15010101-1531
76	210 bp	430 bp	16	160101-160502, 1607-1613N
77	220 bp	430 bp	3, 17, 18, 11	03010101-0340, 1107, 1153
78 <sup>5,6</sup>	80, 210 bp	430 bp	3, 17, 11, 13, 14	03010101-030106, 0304- 0306, 0308-0316, 0318-0320, 0322, 0323, 0325, 0326, 0328, 0330, 0331, 0333, 0334, 0336, 0337, 110201-1103, 111101- 111102, 111401-111402, 1116, 1120, 1121, 1136, 1140, 1141, 1148, 1159, 1163, 116501-116502, 1168, 1170, 130101-1304, 1308, 1310, 1315-1317, 1319, 1320, 1322- 1324, 1327-1329, 1331-1341, 1343, 1345, 1348, 1351-1354, 1357, 1359, 1361, 1363-1366, 1368-1376, 1378-1381, 1383- 1385, 1387, 1416, 1419, 1421, 1482
79 <sup>5,6</sup>	80, 210 bp	430 bp	3, 18, 11, 13, 14	030201-0303, 0327, 0329, 0338, 111301-111302 <sup>weakly</sup> , 1126, 1134, 1315, 1319, 1326, 1344, 1353, 1357, 1385, 1386, 1402-140302, 1406, 1409, 1412, 1413, 1417-1421, 1424, 1427, 1429, 1430, 143201- 143202 <sup>weakly</sup> , 1433, 1440, 1441, 1447-1449, 1451, 1463, 1465 <sup>weakly</sup> , 1467, 1477, 1478, 1480, 1481, 1483
80 <sup>5,6,7</sup>	100, 175	430 bp	4	040101-0478

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**Lot-specific information**

bp					
<b>81</b>	205, 230 bp	430 bp	7, 13, 14	07010101-070103, 0703-0716, 1317, 1450	
<b>82<sup>5,6</sup></b>	165, 215, 250 bp	<b>515 bp</b>	8, 11, 12, 14	080101-080203, 080302-0819, 0821-0836, 1167, 1204, 1216, 1411, 1415, 1468	
<b>83<sup>5</sup></b>	85, 130, 180 bp	430 bp	3, 9, 11	0308, 090102-0908, 1107, 1153	
<b>84</b>	205 bp	430 bp	10	100101-1003	
<b>85<sup>5</sup></b>	100, 170 bp	430 bp	11, 3, 8	0308, 0831, 110101-1170	
<b>86<sup>5</sup></b>	85, 105 bp	430 bp	12, 8	0832, 120101-120204, 120302-1218	
<b>87</b>	210 bp	430 bp	13, 8, 11, 14	0820, 110101-110404, 110601- 110602, 110801-111202, 111401-1116, 1118-1121, 1123-1125, 112701-1133, 1135-1151, 115401-115402, 1156-1166, 1168, 1170 130101-1308, 1310-1316, 1318-1343, 1345-1385, 1387 140301-140302, 1412, 1416, 1419, 1421, 1422, 1425, 1427, 1440, 1453, 1463, 1467, 1469, 1474, 1477, 1478	
<b>88<sup>6</sup></b>	195, 210 bp	430 bp	13, 8, 11, 12, 14	080101-080203, 080401- 0809, 0811, 0816, 0817, 0820- 0822, 0824, 0826, 0828, 0831, 110101-110602, 1109- 111202, 111401-1116, 1120, 1121, 1123-1125, 112701- 1130, 1132, 1133, 1135-1141, 1143, 1144, 1146-1151, 115401-1156, 1158-1163, 116501-1170, 120201-120204, 1213, 1215, 1216, 1218, 130101-130201, 130203, 1304-130502, 130701-1309, 131101-131102, 131401- 1324, 1326-1329, 1331, 1332, 1334-1336, 1338-1343, 1345-	

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**Lot-specific information**

				1355, 1357, 1359, 1361-1365, 1367-1376, 1378-1380, 1383, 1384, 1387 1415, 1416, 1422, 1424, 1425, 1427, 1437, 1453, 1473
<b>89</b>	175 bp	430 bp	3, 8, 13, 14	03010101-0307, 0309, 0311- 0340, 0820, 130101-1316, 1318-1342, 1344, 1346-1366, 1368-1387, 1402-140302, 140501-1406, 1409, 1412-1414, 1417-1421, 142301, 1424, 1427, 1429, 1430, 1433, 1436, 1437, 1440- 1445, 1447, 1448, 1451, 1456, 1459, 1463-1465, 1467, 1477, 1478, 1480, 1481, 1483
<b>90<sup>5-7</sup></b>	100, 140 bp	430 bp	14, 4, 8, 13	0462, 0469, 0473, 0808, 1169, 1345, 140101-140102, 1404, 140701- 140702, 1410, 1416, 1422, 1425, 1426, 1428, 1431- 143202, 1435, 1437-1439, 1449, 1450, 1453-1455, 1457, 1458, 1460-1462, 1468-1471, 1473-1476, 1479, 1482
<b>91<sup>5-7,8</sup></b>	110, 135, 170 bp	<b>515 bp</b>	14, 3, 9, 11, 12, 13, 15	0308, 0310, 090102-090202, 0904-0908, 110404, 1109-111002, 111202-111302, 1116, 1117, 1120, 1122, 1140, 1146, 1152, 1158, 1159, 1204, 1343, 140101-1402, 1404-1411, 1413, 1414, 1416-142302, 1426, 1428-1436, 1438, 1439, 1441, 1443-1452, 1454-1457, 1459-1462, 1464, 1465, 1468, 1470-1476, 1479-1483 1527
<b>92<sup>5-7</sup></b>	110, 175, 225 bp	430 bp	14, 3, 8, 11, 13, 15, 16	0310, 0809, 0820, 0821, 0832, 0835, 111301-111302, 1117, 1123, 1125, 1131, 1145, 1152, 1155,

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				1164, 1313, 1318, 1343, 1345, 1347, 1355, 140101-140103, 140301- 140503, 140701-1408, 1410- 1412, 1414-1416, 1418, 1422- 142302, 1425-1428, 1431- 143202, 1434-1436, 1438- 1440, 1442-1445, 1449, 1450, 1453-1465, 1467-1479, 1481, 1482, 1521 <sup>weakly</sup> , 1604 <sup>weakly</sup>
93	230 bp	430 bp	52	DRB3*01010201-0113, 0201- 0224, 030101-0303
94 <sup>9</sup>	215 bp	430 bp	53	DRB4*01010101-0107
95	175 bp	430 bp	51	DRB5*010101-0113, 0202- 0205

<sup>1</sup>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 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 length 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, 80, 90, 91 and 92.

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

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

Some primers may give rise to primer oligomer artifacts. Sometimes this phenomenon is an 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.

<sup>2</sup>The internal positive control primer pairs amplify segments of the human growth hormone gene. The two different control primer pairs give rise to either an internal positive control band of 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, wells number 82 and 91 contain the primer pair giving rise to the longer, 515 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.

<sup>3</sup>The serological reactivity of all DRB alleles is not known. In this table we use the information in the HLA Dictionary 2004 on the [www.ebi.ac.uk/imgt/hla](http://www.ebi.ac.uk/imgt/hla) web site and the information available at the [www.worldmarrow.org](http://www.worldmarrow.org) web site and have also inferred the serological grouping from the naming of the sequence-defined allele.

<sup>4</sup>For 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

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**Lot-specific information**

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\*0101 consensus sequence.

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.

The DRB1\*0809, DRB1\*0821 and DRB4\*1415 alleles yield identical amplification patterns except for the specific PCR product yielded by the DRB3 gene in linkage disequilibrium with the DRB1\*1415 allele.

The DRB1\*0820, DRB1\*1318, DRB1\*1347 and DRB1\*1355 alleles yield identical amplification patterns except for the specific PCR product yielded by the DRB3 gene in linkage disequilibrium with the DRB1\*1318, DRB1\*1347 and DRB1\*1355 alleles.

The DRB1\*0831 and DRB1\*1167 alleles yield identical amplification patterns except for the specific PCR product yielded by the DRB3 gene in linkage disequilibrium with the DRB1\*1167 allele.

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

<sup>6</sup> Individual alleles can give rise to two differently sized specific PCR fragments in these primer mixes.

<sup>7</sup> These primer mixes may give rise to nonspecific amplifications.

<sup>8</sup> Primer 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.

<sup>9</sup> The DRB4\*01030102N allele is amplified by the primer pair in well No. 94, whereas the DRB4\*0201N and DRB4\*0301N null alleles are not amplified by this primer pair.

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		INTERPRETATION TABLE																									
		HLA-A low resolution SSP typing																									
		Amplification patterns of the A*0101 to A*8001 alleles																									
		Well <sup>6</sup>																									
<b>Length of spec.</b>		120	135	205	190	160	165	175	165	75	85	80	185	175	200	200	90	370	150	200	160	155	240	85	75	360	
<b>PCR product(s)</b>		145	200	235		535	200	205	200				175		225	240		370	180	200	240	375	240	160			
<b>Length of int.</b>			255																								
<b>pos. control<sup>1</sup></b>																											
<b>5'-primer(s)<sup>2</sup></b>		98	78	363	98	144	106	413	98	266	257	302	103														
		123	106			368		413	102	266	261	385	423	98	98	98	98	203	41								
		144																									
		144																									
<b>3'-primer(s)<sup>3</sup></b>		203	240	527	256	265	256	259	259	302	299	341	257	423	423	423	363	363	180	180	180	180	180	180	180	180	
		292	570	292	502	529	502	538	538	521	521	559	559	559	559	559	559	559	559	559	559	559	559	559	559	559	
		555																									
		555																									
<b>Well No.</b>		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24		
<b>HLA-A allele<sup>4</sup></b>		ser <sup>5</sup>																									
*01010101-0104N, 0106, 0109-0111N, 0116N-0118N, 0120, 0122N-0127N, 0129, 0131N-0133		A1, null	1			4																					24
*0107	-	1			4																						
*0108, 0114, 0115N	1	1																									24
*0112, 0119	-	1	3																								24
*0113	-	1	4														11	13	15							24	
*0121	-	1	3	4																							24
<b>Well No.</b>		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24		

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Well No.		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24
*0128	-	1		4							11				15									24	
*0130	-	1																							
*02010101-020115, 020117-020119, 020121- 0209, 0211-0216, 0218- 0222, 0224-0233, 0236- 0238, 0240-0245, 0247, 0249, 0251, 0253N, 0254, 0257-0261, 0263- 0269, 0271, 0272, 027401-0277, 0279- 0292, 0294N, 0296, 0297, 0299, 9201, 9202, 9204-9209, 9211- 9213N, 9215, 9216, 9218-9221, 9223-9228, 9230-9234, 9236-9245, 9247-9255	A2, A203	2																							
*0210, 0239, 0250, 0252, 0273, 0293, 0295, 9210, 9214, 9217, 9256	A210	2																				20			
*021701-021702	A2	2				w																			
*0234, 023501, 023503, 025601-025602, 0262, 9203	-	2														13					20		22		
*023502	-															13					20		22		
*0246, 0270	-	2																			20		22		
*0248, 9229	-																				20		22		
*0255	-	2							8													21		23	
*0278	-	2	4																		20		22		
*9222	-					6																20			
*9235	-	2															13								
*9246	-	2								10															
*03010101-0307, 0309- 0311N, 0313-0317, 0319- 0323, 0325-0329, 0331, 0333-0335, 0337-0340, 0342, 0344-0346	A3			3													13								
*0308, 0332, 0336N	-		3																						
*0312	-		3	4																					
*0318, 2619 <sup>7</sup>	-			4													13								
*0324	-		3					8									13								
*0330	-		3		5												13								
*0341	-		3																						24
*0343	-		3														13	15							
*110101-1109, 1113- 1117, 1119-112402, 1126, 1127, 1129-1140	A11			4							11													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

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Lot-specific information

Well No.		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24
*1110	-				4				8			11													24
*1111	-				4							11	12												24
*1112, 1118	-				4							11													
*1125	-			3	4							11													24
*2301-2313, 2315-2319Q	A23					5	6																		
*2314, 2405, 241302, 2424 <sup>8</sup>	-					5	6	7																	
*24020101-2404, 2406-2411N, 241301, 2417, 2418, 2420-2423, 2425-2443, 2445N-2450, 2454-2456, 2458-2463, 2466-2481, 2483N-2488, 2490, 2491, 2493, 2495-2497	A24					5		7																	
*2414, 2415, 2451-2453, 2457, 2464	A24					5																			
*2419, 2444	-					5		7				11													
*2482	-					5	7																		21
*2489	-						7																		
*2492	-			3		5																			
*2494	-					5																			20
*250101-2504, 2507, 2508	A25							8	9					13											
*2505	-							8	9					13											20
*2506	-							8	9	12															
*260101-260107, 2608, 2610-2615, 2617, 2618, 2620, 2623-2629, 2632, 2633, 2635-2637	A26, null								8		10			13											
*2602	A26								8	10		w													
*2603, 2606, 2621	A26								8		11		13												23
*2604, 2634	A26								8	10															
*2605, 2630	A26								8				13												23
*260701-260702	A26										10		13												
*2609	A26								8	10	12														
*2616	-								7	10		13													
*2622	-								8	10		13												21	
*2631	-								8		13														
*29010101-2906, 2908N-2912, 2915-2918	A29																14								
*2907	-								6								14								
*2913	-																14		17						
*2914	-																14	16							
*2919	-																14								19
Well No.		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24

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Lot-specific information

Well No.		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	
*300101-3004, 3006, 3007, 3009-3020, 3022- 3025, 3027N	A30															15										
*3008	-				4											15				20		22				
*310102-3102, 3105- 3107, 3109-3124	A31																16									
*3103	-											11	12				16									
*3104	A31											12				16										
*3108	-					5											16									
*320101-3202, 3206- 3212, 3214, 3216-3218	A32									9								17								
*3203	-																	17								
*3204	A3		3							9																
*3205	-					5												16	17							
*3213	-					5				9								17								
*3215	-								8	9									17							
*3301, 330301-3312, 3314-3318, 3320, 3323	A33																		18							
*3313	-									10							14		18						24	
*3319	-							7											18							
*3322	-																		18		21					
*340101-340102, 3405, 3406	A34								8		11	12														
*3402-3404, 3407	-			3					8		11	12														
*3408	-		3						8		11	12	13													
*3601, 3603	A36	1																				22	24			
*3602	-	1	3																			22	24			
*3604	-	1		4																		22	24			
*4301	A43									12	13															
*6601, 6604-6608	A66								8		11	13														
*6602, 6603	A66								8		12															
*680101-6804, 6806- 6814, 6816-6819, 6821- 6828, 6830-6844, 6846	A68									8											20					
*6805, 6815, 6820	-									8										20		23				
*6829	-									8									18	20	21					
*6845	-							7	8										20							
*6901	A69								8												21					
*7401-7409, 7411, 7412N	A74																			19						
*7410	-																			19						24
*7413	-														13					19						
*8001	A80							6																23	24	
HLA-A allele <sup>4</sup>	ser <sup>5</sup>																									
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	
B*1827								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	

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

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

In addition, wells number 4, 5, 6, 8, 9, 11, 12, 19 to 23 contain the primer pair giving rise to the shorter, 800 bp, internal positive control band in order to allow kit identification.

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

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

<sup>4</sup>The sequence of the A\*0105N has been shown to be identical to A\*0104N.

The A\*020116 allele has been renamed to A\*9234.

The A\*020120 has been renamed to A\*020118.

The sequence of the A\*0223 allele has been shown to be identical to A\*0222.

The sequence of the A\*0298 allele has been shown to be identical to A\*0296.

The A\*1128 allele has been renamed to A\*111502.

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\*2408.

The A\*2416 allele has been renamed to A\*3108.

The A\*2465 allele has been renamed to A\*241302.

The sequence of the A\*3005 allele has been shown to be identical to A\*3004.

The A\*3021 allele has been renamed to A\*301102.

The sequence of the A\*31011 allele has been shown to be identical to A\*310102.

The sequence of the A\*3302 allele has been shown to be identical to A\*3303.

<sup>5</sup>The serological reactivity of all HLA-A alleles is not known. In this table we use the information in the HLA Dictionary 2004 on the [www.ebi.ac.uk/imgt/hla](http://www.ebi.ac.uk/imgt/hla) web site and the information available at the [www.worldmarrow.org](http://www.worldmarrow.org) web site and have also inferred the serological grouping from the naming of the sequence-defined allele.

<sup>6</sup>The primer pairs in vials 2 and 11 will in most samples give rise to two specific PCR fragments.

<sup>7</sup>The A\*0318 and A\*2619 alleles will give rise to identical amplification patterns. These two alleles can be separated by the respective high resolution SSP primer sets.

<sup>8</sup>The A\*2314, A\*2405, A\*2424 and A\*2465 alleles will give rise to identical amplification patterns. These two alleles can be separated by the respective high resolution SSP primer sets.  
'w', may be weakly amplified.

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## **Lot-specific information**

## **INTERPRETATION TABLE**

## **HLA-B low resolution SSP**

## Amplification patterns of the B\*0702 to B\*8301 alleles<sup>6</sup>

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## **Lot-specific information**

## **INTERPRETATION TABLE**

## **HLA-B low resolution SSP**

## Amplification patterns of the B\*0702 to B\*8301 alleles<sup>6</sup>

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## **Lot-specific information**

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Lot-specific information

									71	72	B7, B703	*0703, 0708, 0716, 0732, 0737
51	52								71	72	B7	*0704, 0725
	52								71		B7	*0707, 0742
	52								71	72	B7	*0709, 0711, 0717
	w								71	72	-	*0713, 0715
51	52								71	72	-	*0719
	52								71	72	-	*0720, 0724
									70	72	-	*0727
	52								71		-	*0733, 0753
	52								70	72	-	*0736
									70	72	-	*0738
	52								71	72	-	*0740, 0748, 0751
									71	72	-	*0750
	52				62				71	72	-	*0754
	52								71		-	*0760
	52		56			64		68	71	72	-	*0765
	51								71	72	B8, Null	*080101-080106, 0805, 0808N, 0810, 0811, 0815, 0818, 0819N, 0822-0824, 0827, 0829, 0830N, 0833, 0834
	51								70	72	B8	*0802
	51								70	72	B8	*0803
	51								71	72	-	*0804
									71	72	B8	*0806, 0813, 0820
	51								71	72	-	*0807, 0814
	51	54							71		-	*0809
	51								71		-	*0812, 0816, 0831
	51				62				71	72		*0817
	51								71	72	-	*0821
									71	72	-	*0825
	51								71	72	-	*0826, 4207
	51								71	72	-	*0828, 0837
	51							68	71	72	-	*0832
	51								71	72	-	*0835
	51								71	72	-	*0836
	51				62				71	72		*0838
					62				70		B13	*1301, 1317, 1320, 1322, 1323
					62				70		B13	*130201-130204, 1308Q, 1315, 1318, 1319
					62	65			70		-	*1303
					62				70		-	*1304, 1310

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Lot-specific information

*1306	-	27	28						41		
*1307N	Null		27	28			34			41	
*1309	-			28			34				
*1311	-			27	28		34				
*1312, 1313	-			27	28					41	
*1314	-			27			34				
*1316	-			27	28		34				
*1321	-			27	28						
*1401, 1407N	B64		28	29							47 48
*140201-1404, 1409	B65			28	30						47 48
*1405-140602	-				30						47 48
*1408, 3925N, 3930, 3932-3934	-				29						47 48
*15010101- 15010102N, 150103, 1526N, 152701, 1532, 1534, 1535, 1538, 1550, 1556, 1557, 1560, 1570, 1571, 1575, 1579N, 1581, 1582, 1592, 1594N, 1596, 1597, 9502, 9504, 9505, 9509- 9511N, 9513, 9517, 9518, 9522, 9525, 9528, 9529	B62, Null, B15			31		36			43		
*150102	B62				31	33	36			43	
*150104	B62					36				43	
*150106-150107, 1507, 152703, 9526, 9535, 9540, 9545-9547	B62		27	31		36				43	
*150108, 152702			27			36				43	
*1502, 1588, 9512, 9521	B75				31		36		41	43	
*1503, 1547, 1549, 1561, 1598, 9503, 9523, 9527, 9532	B72				32	35	36			43	
*1504					31		36			43	
*1505, 1506, 1533, 1539, 1540, 1565, 1578, 1584, 9507	B62, B15			31		36				43	
*1508, 151101-151103, 1515	B75				31		36			43	
*1509	B70				32	33	34			43	
*1510, 1537, 1590, 1599, 9533	B71				32	34				43	

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Lot-specific information

			62	64		70		-	*1306
					70		Null		*1307N
			62			71		-	*1309
				67		70		-	*1311
			62			70		-	*1312, 1313
				62		70		-	*1314
		59	62			70		-	*1316
			62			70		-	*1321
						71	B64		*1401, 1407N
						71	B65		*140201-1404, 1409
						71	-		*1405-140602
						71	-		*1408, 3925N, 3930, 3932-3934
				62					*15010101- 15010102N, 150103, 1526N, 152701, 1532, 1534, 1535, 1538, 1550, 1556, 1557, 1560, 1570, 1571, 1575, 1579N, 1581, 1582, 1592, 1594N, 1596, 1597, 9502, 9504, 9505, 9509- 9511N, 9513, 9517, 9518, 9522, 9525, 9528, 9529
					62		69	71	B62, Null, B15
				62			69	71	B62
				63			69	71	B62
					62		69	71	B62
						62			*150106-150107, 1507, 152703, 9526, 9535, 9540, 9545-9547
					62		69	71	
							69	71	*150108, 152702
			57					71	B75
					62			71	B72
						62			*1503, 1547, 1549, 1561, 1598, 9503, 9523, 9527, 9532
				w	62		69	71	
						62			*1504
							69	71	B62, B15
								71	
								71	B75
			57				69	71	*1508, 151101-151103, 1515
								71	B70
								71	
								71	B71
									*1510, 1537, 1590, 1599, 9533

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Lot-specific information

*1512, 1514, 1519	B76		31		36	37		43			
*1513	B77		31		36	38		41	43		
*1516, 1567, 1595	B63		33	36	38			43			
*15170101-151702	B63		31	33		38		43			
*1518, 1551, 1552, 1572, 1593, 9508, 9514, 9519, 9534	B71		32	34	36			43			
*1520, 1525	B62		31		36			41	43		
*1521, 1544	B75		31	34	36			41	43		
*1523	-		32	34	36	38		43			
*1524, 1587	B62		31		36	38		43			
*1528, 9520	B15		31		36			43			
*1529	B15		32		36			43			
*1530, 1558, 1563	B62, B15		31					43			
*1531	B75		31		36			43			
*1536	-	w	31		36			41	43		
*1542	-		31					43			
*1543	-		31		36			43			
*1545	B62	27	31					43			
*1546	B72	28	31	32		36			43		
*1548	B62		31					43			
*1553	-	28		32		36			43		
*1554	-		32		35	36			43		
*1555	-	27		31		36			43		
*1562	-		32		35	36		41	43		
*1564	-		32		35	36			43		
*1566	-		31		34	36			43		
*1568	-	27		31	32		35	36			
*1569	-		32		35	36			43	45	
*1573	-		31						43		
*1574	-		32		36				43		
*1576, 9501	-			31		36			43		
*1577	-			31					41	43	
*1580	-			32	34	36			41	43	
*1583	-			31	32					43	
*1585	-			31		36			41	43	
*1586	-			31						43	
*1589	-	w		31		36			41	43	
*1591, 9531	-			32		35	36	37		43	
*9506	-	28		31	32		36			41	43
*9515	-			32		34	36			43	44
*9516	-			31			36			43	
*9524	-			32		34	36			43	
*9536	-	27		31			36			43	45
*9537	-	27		31						43	

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Lot-specific information

				62			69	71	B76	*1512, 1514, 1519
		57	59				70		B77	*1513
							70		B63	*1516, 1567, 1595
							70		B63	*15170101-151702
								71	B71	*1518, 1551, 1552, 1572, 1593, 9508, 9514, 9519, 9534
				62				71	B62	*1520, 1525
		57						71	B75	*1521, 1544
							70		-	*1523
				62			69	70	B62	*1524, 1587
							69	71	B15	*1528, 9520
				62				71	B15	*1529
		57					69	71	B62, B15	*1530, 1558, 1563
				62				71	B75	*1531
			59	62	64			70	-	*1536
				62			69	70	-	*1542
				62			69	71	B62	*1543
				61	62		69	71	B72	*1545
				62				71	B62	*1548
				61	62		69	71	-	*1553
				62			69	71	-	*1554
		57						71	-	*1555
				62				71	-	*1562
								71	-	*1564
				62			69	71	-	*1566
				62			69	71	-	*1568
				62				71	-	*1569
				62		65	67	69	71	-
										*1573
				62					71	-
										*1574
52								69	71	-
										*1576, 9501
				62				69	71	-
										*1577
									71	-
										*1580
		54			62				71	-
					62					*1583
								69	71	-
				62	64					*1585
									71	-
		57						70		-
					62					*1589
									71	-
				61	62					*1591, 9531
									71	-
										*9506
								70		-
										*9515
49					62				71	-
49										*9516
					62				71	-
										*9524
					62				71	-
				59	62					*9536
							69	71		*9537

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*9538	-	25			31		36			43		
*9539	-		27		31		36			41	43	
*9541	-		27		31		36				43	
*9542	-		26 27		31		36				43	
*9543	-				31 32		36				43	
*9544	-		27		31		36			41	43	
*9548	-		27		31		36				43	
*9549N	-		27		31		36				43	
*9550	-		27		31						43	
*9551	-				32	35				43		
*180101-1803, 1805-1808, 1810, 1811, 1813, 1815, 1817N, 1818, 1820, 1821, 1823N-1825, 1827, 1828, 1830, 1832	B18						36		39		42	
*1804	-						36		39	42		
*1809	-						36		39		44	
*1812	-						36		39	42		
*1819	-						36		39	42		
*1822	-						36		39	41 42		
*1826	-								39	42		
*1829, 3532, 3537, 3553N, 3564, 356801-356802							36			42		
*2701	B27				29					40		
*2702	B27				29					40		
*2703-270402, 270502-2706, 2709, 2710, 2713, 2717, 2720, 2727, 2731, 2735-2737, 2745	B27				29					40		
*2707, 2711, 2714, 2715, 2721, 2728, 2732, 2734, 2738, 2743	B27									40		
*2708, 2726, 2740, 2742, 2744	B2708				29					40		
*2712	-				29					40		
*2716, 2739	-				29					40		
*2718	-				29		35			40		
*2719	-									40	41	
*2723	-				29					40		
*2724	-									40		
*2725	-									40		
*2729	-				29		35			40		
*2730	-									40	41	

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Lot-specific information

				62			71	-	*9538
		57		62			71	-	*9539
				62			71	-	*9541
				61		69	71	-	*9542
			57			69	71	-	*9543
		57				69	71	-	*9544
				62		69	71	-	*9548
				62		69	71	-	*9549N
				62			71		*9550
				62			71		*9551
						68		B18	*180101-1803, 1805-1808, 1810, 1811, 1813 1815, 1817N, 1818, 1820, 1821, 1823N-1825, 1827, 1828, 1830 1832
					64	68	71	-	*1804
					68	70		-	*1809
				62			71	-	*1812
					68	69	71	-	*1819
		55			68		71	-	*1822
					68		71	-	*1826
					68		71		*1829, 3532, 3537, 3553N, 3564, 356801-356802
	52			62			70	B27	*2701
	52	56	60	62			70	B27	*2702
	52	56		62			70	B27	*2703-270402, 270502-2706, 2709, 2710, 2713, 2717, 2720, 2727, 2731, 2735-2737, 2745
	52	56		62			70	B27	*2707, 2711, 2714, 2715, 2721, 2728, 2732, 2734, 2738, 2743
	52	56		62			71	B2708	*2708, 2726, 2740, 2742, 2744
				62			71	-	*2712
				62			70	-	*2716, 2739
				62			71	-	*2718
	52	56		62			70	-	*2719
	52	56	57	62			70	-	*2723
	52	56		62			69 70	-	*2724
	52	56		62			70	-	*2725
	52	56	60	62			70	-	*2729
	52	56		62			70	-	*2730

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*2733	-									40			
*2741	-			29			36			40			
*350101-350107, 3507-350803, 3511, 3515, 352001-352002, 3523, 3529, 3540N-3542, 3548, 3550, 3552, 3554, 3557, 3561, 3577, 3578, 3582, 3590-3594	B35						36			41	42		
*350201-350401, 350403, 3506, 3512, 3533, 3534, 3536, 3539, 3555, 3559, 3565Q, 3570, 3574, 3583-3585	B35									41	42		
*350402	-					33				41	42		
*3505, 3551, 3558, 3572	B35		27				36			42			
*350901-350902, 3518, 3531, 3575, 3588	B35									42			
*3510, 3528, 3569, 3580	-						36			41	42		
*3513	B35									41	42		
*351401-351402, 3562	B35						36			41	42		
*3516	-		27				36			41	42		
*3517, 3530	B35		27				36			41	42		
*3519	B35						36			41			
*3521, 3524	-						36			41	42		
*3522	-		27							42			
*3525, 3549	-						36			41			
*3526	-				30			36		41			
*3527	B35						36			41			
*3535	-						36			41	42		45
*3538	-									41	42		
*3543, 3567, 3579, 3586	B35						36			42			
*3544	-									42			
*3545, 3571	-						36	37		41	42		
*3546	-						36			41			
*3547	-		28				36			41			
*3556	-									41			
*3560	-									42			
*3563	-		28				36			41			
*3566	-						36			42			
3576	-						36			41	42		

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	52		56		62			71	-	*2733
	52		56		62			70	-	*2741
							68	71	B35	*350101-350107, 3507- 350803, 3511, 3515, 352001-352002, 3523, 3529, 3540N-3542, 3548, 3550, 3552, 3554, 3557, 3561, 3577, 3578, 3582, 3590 3594
							68	71	B35	*350201-350401, 350403, 3506, 3512, 3533, 3534, 3536, 3539, 3555, 3559, 3565Q, 3570, 3574, 3583-3585
							68	71	-	*350402
							68	71	B35	*3505, 3551, 3558, 3572
							68	71	B35	*350901-350902, 3518, 3531, 3575, 3588
				62				71	-	*3510, 3528, 3569, 3580
				62				71	B35	*3513
						68	69	71	B35	*351401-351402, 3562
				62				71	-	*3516
						68		71	B35	*3517, 3530
				61				71	B35	*3519
	55					68		71	-	*3521, 3524
						68		71	-	*3522
								71	-	*3525, 3549
								71	-	*3526
						68		71	B35	*3527
						68		71	-	*3535
	53					68		71	-	*3538
						68	69	71	B35	*3543, 3567, 3579, 3586
						68	69	71	-	*3544
	53					68		71	-	*3545, 3571
			57					71	-	*3546
			61					71	-	*3547
						68		71	-	*3556
				64		68		71	-	*3560
				61 62				71	-	*3563
						68		71 72	-	*3566
	52		56			68		71	-	3576

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Lot-specific information

*3581	-								41	42				
*3587	-				32				42					
*370101-370103, 3703N, 3706, 3713	B37, Null							37		41	44			
*370104	-							37		41	44			
*3702	-			29				37			44			
*3704	-							37		41	44			
*3705	-							37		41	w			
*3707	-	25						37			44			
*3708	-							37		41	44			
*3709	-							37			44			
*3710	-									41	44			
*3711	-									41	42			
*3712	-				32			37			44			
*3714	-										42			
*380101-380102, 3809, 3811-3814, 3816	B38			29							45	46	47	
*380201-380202, 3808, 3815	B38			29						44	45	46	47	
*3803	B16			29			35			44	45	46		
*3804	-									44	45	47		
*3805	-			30							45	46	47	
*3806	-										45			
*3807	-			29							45			
*3810	-			29								46	47	
*3817	-			29				37			44	45	46	47
*39010101-39010102L, 390103-390106, 3903, 3905-390602, 3909, 3911, 3914, 3915, 3924, 3926-3929, 3931, 3935, 3937, 3938Q, 3940N, 3941, 3944, 3946	B3901, B39			29							45	47	48	
*390201, 3908	B3902, B39			29			35				45		48	
*390202, 391301- 391302, 3923	B3902, B39					35					45		48	
*3904	B39			30							45	47	48	
*3907	-		?	?			36				45	47	48	
*3910, 3916, 3920	B39										45		48	
*3912, 3945	-										45	47	48	
*3917	-										45		48	
*3918	-			29							45	47	48	
*391901	-								42		45	47	48	
*391902	-			29					42		45	47	48	

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		55			68	71	-	*3581
51					68	71 72	-	*3587
	53			62		70	B37, Null	*370101-370103, 3703N, 3706, 3713
	53			62 63		70	-	*370104
				62		70	-	*3702
	53	55		62		70	-	*3704
	53			62		71	-	*3705
				62	70	72	-	*3707
	53				68	70	-	*3708
				62	70		-	*3709
	53			62		70	-	*3710
	53			62		71	-	*3711
	53			62		70	-	*3712
				62	70	71	-	*3714
						70	B38	*380101-380102, 3809, 3811-3814, 3816
						70	B38	*380201-380202, 3808, 3815
				62		70	B16	*3803
				62		70	-	*3804
						70	-	*3805
					68	70	-	*3806
					68	70	-	*3807
						70	-	*3810
						70	-	*3817
						71	B3901, B39	*39010101-39010102L, 390103-390106, 3903, 3905-390602, 3909, 3911, 3914, 3915, 3924, 3926-3929, 3931, 3935, 3937, 3938Q, 3940N, 3941, 3944, 3946
				62		71	B3902, B39	*390201, 3908
				62		71	B3902, B39	*390202, 391301- 391302, 3923
						71	B39	*3904
						71	-	*3907
						71	B39	*3910, 3916, 3920
						71	-	*3912, 3945
				64	67	71	-	*3917
						69	-	*3918
					68	71	-	*391901
					68	71	-	*391902

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Lot-specific information

*3922	-			29						45	47	48
*3936	-			29							47	48
*3939	-			29			35				45	48
*3942	-			29					41		45	48
*3943	-			29			36					48
*400101-400106, 4007, 4051, 4079	B60, B40		28									48
*400201-400203, 4004, 40060101-400602, 4039, 4070, 4089	B61, B40											
*4003, 4020	B40					36						
*4005	B4005		27									
*4008	-											
*4009, 4011, 4018, 4024, 4027, 4029, 4035, 4037, 4040, 4044, 4050, 4056, 4057, 4064, 4075, 4078, 4082, 4085, 4086, 4090, 4091	B61, B40											?
*4010, 4022N, 4033, 4036, 4042, 4043, 4049, 4054, 4055, 4061 4063, 4065-4067, 4073, 4081, 4084, 4087, 4088, 4092	Null, B40, B60		28									?
*4012	-					32		35			43	
*4013, 4019	-											
*401401-401403, 4053, 407201	-			28								?
*4015, 4016, 4032	B61	25	28									?
*4021	-											?
*4023	-	25	28									48
*4025, 4069	-			28								?
*4026	B21					33						?
*4028	-					33				41		?
*4030, 4034	-		28									?
*4031, 4045, 4080	-			28								?
*4038, 4052	-			28			36					?
*4046	-						35			40		?
*4047	-		28									
*4048	-			28			34					?
*4058	-			28								?
*4059	-			28				36				48
*4060	-			28				36				48
*4068	-											?

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Lot-specific information

				62			71	-	*3922
					69	71		-	*3936
						71		-	*3939
						71		-	*3942
						71		-	*3943
49				61 62			71	B60, B40	*400101-400106, 4007, 4051, 4079
50				61 62			71	B61, B40	*400201-400203, 4004, 40060101-400602, 4039, 4070, 4089
50				61 62			71	B40	*4003, 4020
50				61 62			71	B4005	*4005
50				61			71	-	*4008
50				61 62			71	B61, B40	*4009, 4011, 4018, 4024, 4027, 4029, 4035, 4037, 4040, 4044, 4050, 4056, 4057, 4064, 4075, 4078, 4082, 4085, 4086, 4090, 4091
49				61 62			71	Null, B40, B60	*4010, 4022N, 4033, 4036, 4042, 4043, 4049, 4054, 4055, 4061 4063, 4065-4067, 4073, 4081, 4084, 4087, 4088, 4092
49				62			71	-	*4012
50			58 60	62			70	-	*4013, 4019
				61 62			71	-	*401401-401403, 4053, 407201
				61 62			71 72	B61	*4015, 4016, 4032
49				62			71	-	*4021
49				61 62			71	-	*4023
49				61			71	-	*4025, 4069
50				61 62			71	B21	*4026
50			55	61 62			71	-	*4028
				61 62			71 72	-	*4030, 4034
			57	61 62			71 72	-	*4031, 4045, 4080
49				61 62			71	-	*4038, 4052
49				62			71	-	*4046
49				62			70	-	*4047
49				61 62		67	71	-	*4048
				61 62	64		71	-	*4058
				61 62			71 72	-	*4059
49				61 62			71	-	*4060
50				61			71	-	*4068

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## **Lot-specific information**

*4071	-	27							?
*407202, 4077	-		28						48
*4074	-								?
*4076	-		28						?
*4083	-								?
*4093	-					35		40	
*4094	-								
*4101, 4106, 4107	B41		28		32				48
*4102	B41		28		32				48
*410301-410302	B41		28		32				48
*4104	-		28						48
*4105	-		28		32				48
*4108	-	25	28		32		38		48
*4201, 4202, 4206	B42				32				48
*4204	-				32				48
*420501-420502	-	25			32		38		48
*4208	-				32				48
*4209	-						36		48
*44020101-440205, 4411, 4416, 4419N, 4421-4424, 4427, 4433, 4434, 4448, 4451, 4452N, 4455, 4459, 4463	B44, B47, Null		28						41
*440301-4405, 4413, 4426, 442801-4430, 4432, 4435, 4436, 4438, 4439, 4442, 4445, 4456N, 4458N, 4461N	B44		28						41
*4406	B44								41
*4407									41
*4408	B44	w							41
*4409	B12		28						41
*4410	-		28			35			41 43
*4412	-		28						41
*4414	-		28		32				41
*4415	-		28		32	35			
*4417, 4443	-		28			36	37		41
*4418	-		28		32	35			
*4420	-		28		32				
*4425, 4450	-		28						41
*4431	-		28						
*4437, 446401-446402	-		28						41
*4440	-					35		40	41
*4441, 4453	-		28						

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Lot-specific information

50			61 62	65 67	71	-	*4071
			61 62		71	-	*407202, 4077
49 50			61 62		71	-	*4074
49			62			-	*4076
			61 62		71	-	*4083
			62		71		*4093
50			61 62 63		71		*4094
	51	54	61 62		71	B41	*4101, 4106, 4107
	51		61 62		71 72	B41	*4102
	51		61 62		71	B41	*410301-410302
	51		61 62		71 72	-	*4104
	51	54	? 62		71	-	*4105
	51		61 62		71	-	*4108
	51 52				71 72	B42	*4201, 4202, 4206
	51 52	54			71	-	*4204
	51 52				71 72	-	*420501-420502
	52				71	-	*4208
	51 52				71 72	-	*4209
	53		62 63		70	B44, B47, Null	*44020101-440205, 4411, 4416, 4419N, 4421-4424, 4427, 4433, 4434, 4448, 4451, 4452N, 4455, 4459, 4463
	53		62		70	B44	*440301-4405, 4413, 4426, 442801-4430, 4432, 4435, 4436, 4438, 4439, 4442, 4445, 4456N, 4458N, 4461N
	53 54		60	63	68 70	B44	*4406
	53		62		70		*4407
	53		62 63		70	B44	*4408
	53		61 62 63		71	B12	*4409
	53		62	65	70	-	*4410
	53		63		70	-	*4412
	53		62		70	-	*4414
	54		62	65	70	-	*4415
	53		62		70	-	*4417, 4443
	54	58	62	65	70	-	*4418
	53 54		62 63		70	-	*4420
	53	58 60	62		70	-	*4425, 4450
49	53		62		70	-	*4431
			62		70	-	*4437, 446401-446402
	53		62		70	-	*4440
	53		62 63		70	-	*4441, 4453

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Lot-specific information

*4444	-				35		40	41		
*4446	-		28					41		
*4447, 4465	-		28							
*4449	-	26	28					41		
*4454	-	27	28							
*4457	-		w					41		
*4460	-		27	28				41		
*4462	-		28		32	33			41	
*4501, 4505, 4507	B45		28		32	35				48
*4502, 4503	-		28		32					48
*4504	-		28		32					48
*4506	-		28		32	35				48
*4508	-		28		32					48
*4509	-		28		32		36	37		48
*460101-460102, 4604, 4605, 4607N, 4609	B46			31		36				
*4602	-				31		36			
*4603, 4608	-				31		36			
*4606	-				31		36			
*4610	-				31		36			
*4611	-		27		31					
*4612, 4614-4616	-	27			31		36			
*4613	-		27		31		36			
*4617	-	27			31		36	37		
*4618	-				31					
*47010101-47010102	B47		28							
*4702	-		28							
*4703	-		28							
*4704, 4705	-	28	29							
*480101-480102, 4807, 4809, 4811, 4819	B48				35					48
*4802	-					35	36		41	
*480301-480302	B48					35				48
*4804	B48					35				48
*4805, 4808	B48	25				35				48
*4806	-									48
*4810, 4812, 4817	-					35				48
*4813	-					35				48
*4814	-					35	36			48
*4815	-	25				35				48
*4816	-					35				48
*4818	-					35				
*490101	B49		28							
*490102	-		28							
*4902	-		28							
*4903	-									

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Lot-specific information

	53			62 63		70	-	*4444
	53			61 62		71	-	*4446
	53			62		70	-	*4447, 4465
	53			62 63		70	-	*4449
	53			62		70	-	*4454
	53			62		70	-	*4457
	53			62		70	-	*4460
	53			62		70	-	*4462
	54			61 62	65	71	B45	*4501, 4505, 4507
	54			61 62		71	-	*4502, 4503
	54			61 62	65	71	-	*4504
52	54			61	65	71	-	*4506
	54			61 62	64	71	-	*4508
	54			61 62		71	-	*4509
52	55					69 71	B46	*460101-460102, 4604, 4605, 4607N, 4609
w	55					69 71	-	*4602
52	55					71	-	*4603, 4608
49	52	55				71	-	*4606
	52	55		62		69 71	-	*4610
	52	55		62	65	71	-	*4611
	52	55		62		69 71	-	*4612, 4614-4616
	52	55		62		71	-	*4613
	52	55		62		69 71	-	*4617
	52	55		62	64	66	71	*4618
	56			62		70	B47	*47010101-47010102
	56			61 62		71	-	*4702
	56			62		70 w	-	*4703
				62		70	-	*4704, 4705
		57		62		71 72	B48	*480101-480102, 4807, 4809, 4811, 4819
49				62		71	-	*4802
		57		62		71	B48	*480301-480302
				62		71 72	B48	*4804
		57				71 72	B48	*4805, 4808
				62		71 72	-	*4806
				62		71 72	-	*4810, 4812, 4817
				62		71	-	*4813
				62		71 72	-	*4814
		57		62		71 72	-	*4815
		57				71 72	-	*4816
		57		62		70 72	-	*4818
			58 59	62	65	70	B49	*490101
			58	62	65	70		*490102
			59	62	65	70	-	*4902
			59	62	65	70	-	*4903

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## **Lot-specific information**

*4904, 4905	-	28		36			
*5001, 5004	B50	28					48
*5002	B45	28		35			48
*510101, 510103, 510105-510108, 510201, 510203, 5103, 5107, 510901, 5111N, 5112, 511302, 5114, 5117-5119, 5122, 5123, 5126-5130, 5132, 5133, 5138- 5141N, 5143, 5148, 5149, 5151-5153, 5155, 5158, 5160	B51, B5102, B5103, Null			33			
*510102, 510109, 510202, 5105, 510902	B51			33			
*510104, 511301, 5116, 5121, 512401- 512402, 5131, 5134, 5135	B51, B52						
*5104, 5146	B51			33			41
*5106, 5159	B51			33			
*5108, 5120, 5144N	B51		32	33			
*5110	-						
*5115	-						
*5136	-			32			
*5137, 5163	-			33	36		
*5142	-						41
*5145	-				36		
*5150, 5154	-			33			
*5156	-			33			41
*5157	-			33			
*5161	-			33			
*5162	-						
*520101, 520103, 5204, 5205, 5207, 5210 5212	B52			33			
*520102, 520104-5203, 520601-520602, 5209	B52			33			
*5208	-						
*5213				33			
*5214	-						
*530101-530104, 5305, 5308, 5310, 5316	B53			36			41
*5302	B53			36			41

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Lot-specific information

		58	59	62				70	-	*4904, 4905	
			59	61	62		65		71	B50	*5001, 5004
			59	61	62		65		71	B45	*5002
		54		59	60			68	70	B51, B5102, B5103, Null	*510101, 510103, 510105-510108, 510201, 510203, 5103, 5107, 510901, 5111N, 5112, 511302, 5114, 5117-5119, 5122, 5123, 5126-5130, 5132, 5133, 5138- 5141N, 5143, 5148, 5149, 5151-5153, 5155, 5158, 5160
			59	60				68	70	B51	*510102, 510109, 510202, 5105, 510902
		54		59	60			68	70	B51, B52	*510104, 511301, 5116, 5121, 512401- 512402, 5131, 5134, 5135
		54	55		60			68	70	B51	*5104, 5146
		54		60				68	70	B51	*5106, 5159
		54		59	60			68	70	B51	*5108, 5120, 5144N
		54		60				68	70	-	*5110
			60				65	68	70	-	*5115
		54		59	60			68	70	-	*5136
		54		59	60			68	70	-	*5137, 5163
		53	54		60			68	70	-	*5142
		54		60				68	70	-	*5145
			59					68	70	-	*5150, 5154
		54	55					68	70	-	*5156
		54		59				68	70	-	*5157
		54		59	60			68	69	70	-
		54		60			65	67	68	70	-
			59								*5161
			59								*5162
			59	60		62			70		*520101, 520103, 5204, 5205, 5207, 5210 5212
			59	60		62			70	B52	*520102, 520104-5203, 520601-520602, 5209
			59	60		62			70	B52	-
			59		62				70		*5208
			59		62				70		*5213
			59		62				70		*5214
				60				68	70	B53	*530101-530104, 5305, 5308, 5310, 5316
			55		60			68	70	B53	
											*5302

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*5303, 5309, 5311- 5313	-						36			41			
*5304, 5307	-									41			
*5306	B53							36			41		
*5314	-		27					36					
*5315	-							36			41		
*5401, 5402, 5405N, 5407, 5408N, 5410, 5413, 5416, 5417	B54												
*5403	-												
*5404, 5411, 5415	-												
*5406	-							36					
*5409, 5414	-							36					
*5412	-												
*550101-550104, 5503, 5505, 5511, 5515, 5525, 5529, 5531, 5533	B55												
*550201-550203, 5507, 5510, 5512, 5516, 5519, 5526, 5530	B54, B55												
*5504, 5508, 5513, 5527, 5615, 5619N, 5622	B55												
*5509, 5517, 5528	-												
*5514	-							36			41		
*5518	-							35					
*5520	-												
*5521	-												
*5522	-							34					
*5523, 5532, 5618	-							36					
*5524	-							34					
*5534	-												
*5601, 5608, 5614, 5616, 5620, 5624	B56												
*5602, 5604	B56												
*5603	B22							36					
*560501	-							33					
*560502	-							33					
*5606	B78							33			42		
*5607	-												
*5609	-								36		41		
*5610	-												
*5611, 5612	-										41		
*5613	-							32					
*5617	-												
*5621	-							33					

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Lot-specific information

							68	70		-	*5303, 5309, 5311-5313
			60				68	70		-	*5304, 5307
	54	55		60			68	70		B53	*5306
			60				68	70		-	*5314
			60				68	70	72	-	*5315
52		56			63	64			71	B54	*5401, 5402, 5405N, 5407, 5408N, 5410, 5413, 5416, 5417
52		56			63	65			71	-	*5403
52		56			63				71	-	*5404, 5411, 5415
52		56			63			69	71	-	*5406
52		56			63				71	-	*5409, 5414
52		56			63	64			70	-	*5412
52		56	59		64				71	B55	*550101-550104, 5503, 5505, 5511, 5515, 5525, 5529, 5531, 5533
52		56			64				71	B54, B55	*550201-550203, 5507, 5510, 5512, 5516, 5519, 5526, 5530
52		56							71	B55	*5504, 5508, 5513, 5527, 5615, 5619N, 5622
52		56	59						71	-	*5509, 5517, 5528
52		56				66			71	-	*5514
51	52	54	56		62	64			71	-	*5518
52		56	59		64			69	71	-	*5520
52		56	59						71	-	*5521
52		56							71	-	*5522
52		56							71	-	*5523, 5532, 5618
52		56	59						71	-	*5524
52		56			62	64			71		*5534
52		56				65			71	B56	*5601, 5608, 5614, 5616, 5620, 5624
52		56				65	67		71	B56	*5602, 5604
52		56					69	71		B22	*5603
52		56	59		64				71	-	*560501
52		56	59						71	-	*560502
52		56	59		64				71	B78	*5606
52		56				65		70		-	*5607
52		56							71	-	*5609
52		56			64	67			71	-	*5610
52		56							71	-	*5611, 5612
52	54	56				65			71	-	*5613
						65			71	-	*5617
52		56	59						70	-	*5621

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## **Lot-specific information**

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Lot-specific information

					64				71	-	*5623
				60		66		70		B57	*570101-570103, 5706, 5708, 5710
				60		66		70		B57	*5702-5705
	53			60		66		70		-	*5707
	53			60		66		70		-	*5709
				60		66		70		-	*5711
				62		66		71		-	*5712
				60	62	66		70		-	*5713
	55			60	62	66		70		-	*5714
				60	62	66		70		-	*5715, 5718, 5719
				60	62			70		-	*5716
				62		66		70		-	*5717
				60		67		70		B58	*580101, 5804, 5805, 5810N-5814
				60	62	67		70		-	*580102, 5815
				60		67		70		B58	*5802, 5806
				60		67		70		-	*5807
	54			59	60	67		70		-	*5808
	55			60		67		70		-	*5809
				60	62	67		70		-	*5816
					62	67		70			*5817N, 5819
					62	67		70			*5818
					60	62	67	70			*5820
					64			70		B59	*5901
					60			70		-	*5902
								70		-	*5903
						65		70			*5904
	52							71		B67	*670101
	52							71		B67	*670102
	w							71		-	*6702
	52							69	71	B73	*7301
				59		64		68	71	B78	*7801, 780202, 7803
				59			68	71		B78	*780201, 7804
				59	62			71		-	*7805
				59	62			71		-	*7806
	52		56	57				71	72	B81	*8101
	52			57				71	72	-	*8102
	52			57				71	72	-	*8103, 8104N
	52		56			65		71		-	*8201, 8202
	52	53	56			63		71		-	*8301
49	50	51	52	53	54	55	56	57	58	59	Well No.
										ser. <sup>5</sup>	HLA-B allele <sup>4</sup>

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**Lot-specific information**

A*3028																								
Cw*0206																								
Cw*0223		25																						
Cw*0305, 0325, 0327			27																					
Cw*0746								32																
Cw*150204																								
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

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

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

In addition, wells number 30, 33, 34, 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.

<sup>2</sup>The nucleotide position, in the 1<sup>st</sup>, 2<sup>nd</sup> or 3<sup>rd</sup> exon or in the 1<sup>st</sup> 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.

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

<sup>4</sup>The sequence of the B\*0701 allele has been shown to be in error.

The sequence of the B\*1305 allele has been shown to be identical to B\*1304.

The B\*1522 allele has been renamed B\*3543.

The sequence of the B\*1541 allele has been shown to be identical to B\*1539.

The B\*1559 allele has been renamed B\*3544.

The sequence of the B\*1816 allele has been shown to be identical to B\*1814.

The sequence of the B\*27051 allele has been shown to be identical to B\*270502.

The sequence of the B\*2722 allele has been shown to be identical to the corrected B\*2706 sequence.

The B\*3573 allele has been renamed B\*350803.

The sequence of the B\*39012 allele has been shown to be identical to B\*390101.

The sequence of the B\*3921 allele has been shown to be identical to B\*3924.

The sequence of the B\*4017 allele has been shown to be identical to B\*4016.

The sequence of the B\*4041 allele has been shown to be identical to B\*4040.

The sequence of the B\*4203 allele has been shown to be in error.

The sequence of the B\*4401 allele has been shown to be identical to B\*4402.

The sequence of the B\*5003 allele has been shown to be identical to B\*5002.

The sequence of the B\*5125 allele has been shown to be identical to B\*5122.

The B\*5147 allele has been renamed B\*510902.

The sequence of the B\*5506 allele has been shown to be identical to B\*5504.

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

The B\*7901 allele has been renamed B\*1518.

The B\*9530 allele has been renamed B\*152702.

Lot No.: 61F

## **Lot-specific information**

The B\*0826 and the B\*4207 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\*1408 and the B\*3925N, B\*3930 and B\*3932 to 3934 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\*1829 and the B\*3523, B\*3537, B\*3553N, B\*3564, B\*3566 and B\*356801-356802 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\*5504, B\*5508, B\*5513, B\*5527 and the B\*5615, B\*5619N and B\*5622 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\*5523, B\*5532 and the B\*5618 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.

<sup>5</sup>The serological reactivity of all HLA-B alleles is not known. In this table we use the information in the HLA Dictionary 2004 on the [www.ebi.ac.uk/imgt/hla](http://www.ebi.ac.uk/imgt/hla) web site and the information available at the [www.worldmarrow.org](http://www.worldmarrow.org) web site and have also inferred the serological grouping from the naming of the sequence-defined allele.

#### 'ser', serological HLA specificity.

'w' might be weakly amplified.

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

Lot No.: 61F

## **Lot-specific information**

## **INTERPRETATION TABLE**

**DR low resolution SSP typing**

## Amplification patterns of the DRB1\*0101 to DRB1\*1003 alleles

Lot No.: 61F

Lot-specific information

Well No.		73	74	75	76	77	78	79	80	81	82	83	84	85	86	87	88	89	90	91	92	93	94	95	
*030201-0303, 0327, 0329, 0338	18					77	79											89							
*0307, 0317, 0321, 0324, 0332, 0335, 0339, 0340	-					77												89							
*0308	-					77	78				83		85						91						
*0310	-					77	78											91	92						
*040101-0461, 0463-0468, 0470-0472, 0474-0478	4								80																
*0462, 0469, 0473	-								80									90							
*07010101-070103, 0703- 0716	7									81															
*080101-080203, 080401- 0807, 0811, 0816, 0817, 0822, 0824, 0826, 0828	8										82							88							
*080302, 0810, 0812- 0815, 0818, 0819, 0823, 0825, 0827, 0829, 0830, 0833, 0834, 0836	8										82														
*0808	-									82							88	90							
*0809, 0821, 1415	8									82							88			92					
*0820, 1318, 1347, 1355	8,13																87	88	89	92					
*0831, 1167	-									82			85			88									
*0832	-									82			86							92					
*0835	-									82										92					
*090102-090202, 0904- 0908	9										83								91						
*0903	9										83														
*100101-1003	10											84													
*110101-110107, 110401- 110403, 110601-110602, 111201, 1115, 1124, 112701-1130, 1132, 1133, 1135, 1137-1139, 1143, 1144, 1147, 1149-1151, 115401-115402, 1156, 1160-1162, 1166	11																85	87	88						
*110201-1103, 111101- 111102, 111401-111402, 1121, 1136, 1141, 1148, 1163, 116501-116502, 1168, 1170	11								78								85	87	88						
*110404, 1109-111002, 111202, 1146, 1158	11																85	87	88		91				
*1105	11																85	88							
Well No.		73	74	75	76	77	78	79	80	81	82	83	84	85	86	87	88	89	90	91	92	93	94	95	

Lot No.: 61F

Lot-specific information

Well No.		73	74	75	76	77	78	79	80	81	82	83	84	85	86	87	88	89	90	91	92	93	94	95		
*1107, 1153	-					77				83		85														
*110801-110802, 1118-111902, 1142, 1157	11													85	87											
*111301-111302	11							w						85						91	92					
*1116, 1120, 1140, 1159	-						78							85	87	88			91							
*1117, 1152	11													85					91	92						
*1122	-													85					91							
*1123, 1125	11													85	87	88			92							
*1126, 1134	11							79						85												
*1131, 1145, 1164	-													85	87				92							
*1155	-													85	88				92							
*1169	-													85		88		90								
*120101-120102, 120302, 1205-1212, 1214, 1217	12														86											
*120201-120204, 1213, 1215, 1218	12														86	88										
*1204	-									82				86					91							
*1216	-									82				86	88											
*130101-130201, 130203, 1304, 1308, 1316, 1320, 1322-1324, 1327-1329, 1331, 1332, 1334-1336, 1338-1341, 1348, 1351, 1352, 1354, 1359, 1361, 1363-1365, 1368-1376, 1378-1380, 1383, 1384, 1387	13						78								87	88	89									
*130202, 130301-130302, 1310, 1333, 1337, 1366, 1381	13						78								87	89										
*130501-130502, 130701-130702, 131101-131102, 131401-131403, 1321, 1342, 1346, 1349-135002, 1362	13														87	88	89									
*1306, 1312, 1325, 1330, 1356, 1358, 1360, 1377, 1382	13														87	89										
*1309	13															88	89									
*1313	-															87	89		92							
*1315, 1319, 1353, 1357	-						78	79							87	88	89									
*1317	13						78			81							88									
*1326	-							79							87	88	89									
*1343	-							78							87	88			91	92						
Well No.		73	74	75	76	77	78	79	80	81	82	83	84	85	86	87	88	89	90	91	92	93	94	95		

Lot No.: 61F

Lot-specific information

Well No.		73	74	75	76	77	78	79	80	81	82	83	84	85	86	87	88	89	90	91	92	93	94	95
*1344, 1386	-						79										89							
*1345	-						78									87	88	90	91	92				
*1367	-															87	88							
*1385	-						78	79							87		89							
*140101-140102, 1404, 140701-140702, 1410, 1426, 1428, 1431, 1435, 1438, 1439, 1454, 1455, 1457, 1460-1462, 1470, 1471, 1475, 1476, 1479	14																	90	91	92				
*140103, 1408, 142302, 1434, 1472	-																		91	92				
*1402, 1406, 1409, 1413, 1417, 1420, 1429, 1430, 1433, 1441, 1447, 1448, 1451, 1480, 1483	14							79										89	91					
*140301-140302, 1412, 1440, 1463, 1467, 1477, 1478	14							79								87		89		92				
*140501-140503, 1414, 142301, 1436, 1443-1445, 1456, 1459, 1464	14																	89	91	92				
*1411	-									82									91	92				
*1416	6						78									87	88	90	91	92				
*1418, 1481	-							79										89	91	92				
*1419, 1421	-						78	79								87	89	91						
*1422	-															87	88	90	91	92				
*1424	-							79								88	89							
*1425, 1453	-															87	88	90	91	92				
*1427	14							79								87	88	89		92				
*143201-143202	-							w										90	91	92				
*1437	-															88	89	90						
*1442	-															89			92					
*1446, 1452	-																	91						
*1449	-							79										90	91	92				
*1450	-								81									90	91	92				
*1458	-																	90	91	92				
*1465	-							w										89	26	27				
*1468	-									82								90	91	92				
*1469	-															87		90	91	92				
*1473	-															88		90	91	92				
*1474	-															87		90	91	92				
*1482	-							78										90	91	92				
Well No.		73	74	75	76	77	78	79	80	81	82	83	84	85	86	87	88	89	90	91	92	93	94	95

Lot No.: 61F

Lot-specific information

Well No.		73	74	75	76	77	78	79	80	81	82	83	84	85	86	87	88	89	90	91	92	93	94	95	
*15010101-1520, 1522-1526, 1528-1531	15			75																					
*1521	-			75																w					
*1527	-			75															91						
*160101-1603, 160501-160502, 1607-1613N	16				76																				
*1604	16			76																w					
Well No.		73	74	75	76	77	78	79	80	81	82	83	84	85	86	87	88	89	90	91	92	93	94	95	
DRB1 allele <sup>4</sup>	ser <sup>5</sup>																								
DRB3*01010201-0113, 0201-0224, 030101-0303	52																							93	
DRB4*01010101-0107	53																							94	
DRB5*010101-0113, 0202-0205	51																								95
Well No.		73	74	75	76	77	78	79	80	81	82	83	84	85	86	87	88	89	90	91	92	93	94	95	

<sup>1</sup>The internal positive control primer pairs amplify segments of the human growth hormone gene. The two different control primer pairs give rise to either an internal positive control band of 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, wells number 82 and 91 contain the primer pair giving rise to the longer, 515 bp, internal positive control band in order to allow kit identification.

<sup>2</sup>The codon, in the 2<sup>nd</sup> exon, matching the specificity-determining 3'-end of the primer is given. Codon 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. Empty spaces indicate codon boundaries.

<sup>3</sup>The codon, in the 2<sup>nd</sup> exon, matching the specificity-determining 3'-end of the primer is given in the anti-sense direction. Codon 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. Empty spaces indicate codon boundaries.

<sup>4</sup>The DRB1\*0809, DRB1\*0821 and DRB4\*1415 alleles yield identical amplification patterns except for the specific PCR product yielded by the DRB3 gene in linkage disequilibrium with the DRB1\*1415 allele.

The DRB1\*0820, DRB1\*1318, DRB1\*1347 and DRB1\*1355 alleles yield identical amplification patterns except for the specific PCR product yielded by the DRB3 gene in linkage disequilibrium with the DRB1\*1318, DRB1\*1347 and DRB1\*1355 alleles.

The DRB1\*0831 and DRB1\*1167 alleles yield identical amplification patterns except for the specific PCR product yielded by the DRB3 gene in linkage disequilibrium with the DRB1\*1167 allele.

The sequence of the DRB1\*0702 allele has been shown to be identical to DRB1\*070101.

The sequence of the DRB1\*08031 allele has been shown to be identical to DRB1\*080302.

The sequence of the DRB1\*09011 allele has been shown to be identical to DRB1\*090102.

The sequence of the DRB1\*12031 allele has been shown to be identical to DRB1\*1201.

The sequence of the DRB1\*1466 allele has been shown to be identical to DRB1\*142302.

The sequence of the DRB1\*1606 allele has been shown to be identical to DRB1\*1605.

The sequence of the DRB3\*010101 allele has been shown to be identical to DRB3\*01010201.

The DRB4\*0101102N allele has been renamed DRB4\*01030102N.

The sequence of the DRB5\*0201 allele has been shown to be identical to DRB5\*0202.

<sup>5</sup>The serological reactivity of all DRB alleles is not known. In this table we use the information in the HLA Dictionary 2004 on the [www.ebi.ac.uk/imgt/hla](http://www.ebi.ac.uk/imgt/hla) web site and the information available at the [www.worldmarrow.org](http://www.worldmarrow.org) web site and have also inferred the serological grouping from the naming of the sequence-defined allele.

'ser', serological HLA specificity.

'w', may be weakly amplified. 'f', may be faintly amplified.

Lot No.: 61F

Lot-specific information

CELL LINE VALIDATION SHEET																		
HLA-A low resolution primer set																		
	IHWC cell line	A*	A*	Well														
				1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
1	9001	SA	*2402	-	-	-	-	+	-	+	-	-	-	-	-	-	-	-
2	9280	LK707	*0201	-	+	-	-	-	-	-	-	-	-	-	-	-	-	-
3	9011	E4181324	*0101	+	-	-	+	-	-	-	-	-	-	-	-	-	-	-
4	9275	GU373	*3001	-	-	-	-	-	-	-	-	-	-	-	-	-	+	+
5	9009	KAS011	*0101	+	-	-	+	-	-	-	-	-	-	-	-	-	-	-
6	9353	SM	*0201	*2603	-	+	-	-	-	-	+	-	-	+	-	+	-	-
7	9020	QBL	*2601	-	-	-	-	-	-	+	-	+	-	+	-	+	-	-
8	9007	DEM	*0201	-	+	-	-	-	-	-	-	-	-	-	-	-	-	-
9	9026	YAR	*2601	-	-	-	-	-	-	+	-	+	-	+	-	-	-	-
10	9107	LKT3	*2402	-	-	-	-	+	-	+	-	-	-	-	-	-	-	-
11	9051	PITOUT	*2902	-	-	-	-	-	-	-	-	-	-	-	-	-	+	-
12	9052	DBB	*0201	-	+	-	-	-	-	-	-	-	-	-	-	-	-	-
13	9067	BTB	*0201	-	+	-	-	-	-	-	-	-	-	-	-	-	-	-
14	9071	OLGA	*3101	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
15	9075	DKB	*2402	-	-	-	-	+	-	+	-	-	-	-	-	-	-	-
16	9037	SWEIG007	*2902	-	-	-	-	-	-	-	-	-	-	-	-	-	+	-
17	9008	WILJON	*2501	-	-	-	-	-	-	+	+	-	-	-	-	-	-	-
18	9257	32367	*3303	*7401	-	-	-	-	-	-	-	-	-	-	-	-	-	-
19	9038	BM16	*0201	-	+	-	-	-	-	-	-	-	-	-	-	-	-	-
20	9059	SLE005	*0201	-	+	-	-	-	-	-	-	-	-	-	-	-	-	-
21	9064	AMALA	*0217	-	+	-	-	-	-	W	-	-	-	-	-	-	-	-
22	9056	KOSE	*0201	-	+	-	-	-	-	-	-	-	-	-	-	-	-	-
23	9124	IHL	*0201	*3401	-	+	-	-	-	-	+	-	-	+	+	-	-	-
24	9035	JBUSH	*3201	-	-	-	-	-	-	-	+	-	-	-	-	-	-	-
25	9049	IBW9	*3301	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
26	9285	WT49	*0205	-	+	-	-	-	-	-	-	-	-	-	-	-	-	-
27	9191	CH1007	*2410	*2901	-	-	-	+	-	+	-	-	-	-	-	+	-	-
28	9320	BEL5GB	*0201	*2902	-	+	-	-	-	-	-	-	-	-	-	+	-	-
29	9050	MOU	*2902	-	-	-	-	-	-	-	-	-	-	-	-	+	-	-
30	9021	RSH	*3001	*6802	-	-	-	-	-	-	+	-	-	-	-	-	+	+
31	9019	DUCAF	*3002	-	-	-	-	-	-	-	-	-	-	-	-	-	-	+
32	9297	HAG	*0201	-	+	-	-	-	-	-	-	-	-	-	-	-	-	-
33	9098	MT14B	*3101	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
34	9104	DHIF	*3101	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
35	9302	SSTO	*3201	-	-	-	-	-	-	-	+	-	-	-	-	-	-	-
36	9024	KT17	*0206	*1101	-	+	-	+	-	-	-	-	-	+	-	-	-	-
37	9065	HHKB	*0301	-	-	+	-	-	-	-	-	-	-	-	+	-	-	-
38	9099	LZL	*0217	-	+	-	-	-	-	W	-	-	-	-	-	-	-	-
39	9315	CML	*0101	*0301	+	-	+	+	-	-	-	-	-	-	+	-	-	-
40	9134	WHONP199	*0207	*3001	-	+	-	-	-	-	-	-	-	-	-	-	+	+
41	9055	H0301	*0301	-	-	+	-	-	-	-	-	-	-	-	-	+	-	-
42	9066	TAB089	*0207	-	+	-	-	-	-	-	-	-	-	-	-	-	-	-
43	9076	T7526	*0207	-	+	-	-	-	-	-	-	-	-	-	-	-	-	-
44	9057	TEM	*6601	-	-	-	-	-	-	+	-	-	-	+	-	+	-	-
45	9239	SHJO	*2301	*2402	-	-	-	-	+	+	+	-	-	-	-	-	-	-
46	9013	SCHU	*0301	-	-	+	-	-	-	-	-	-	-	-	+	-	-	-
47	9045	TUBO	*0216	*0301	-	+	+	-	-	-	-	-	-	-	-	+	-	-
48	9303	TER-ND	*0201	*1101	-	+	-	+	-	-	-	-	-	+	-	-	-	-

Lot No.: 61F

Lot-specific information

CELL LINE VALIDATION SHEET		
HLA-A low resolution primer set		
		Well
		17 18 19 20 21 22 23 24
		Lot No.: 200855017
		200855018
		200855019
		200855020
		200855021
		200855022
		200855023
		200855024
	IHWC cell line	A* A*
1	9001 SA	*2402
2	9280 LK707	*0201
3	9011 E4181324	*0101
4	9275 GU373	*3001
5	9009 KAS011	*0101
6	9353 SM	*0201 *2603
7	9020 QBL	*2601
8	9007 DEM	*0201
9	9026 YAR	*2601
10	9107 LKT3	*2402
11	9051 PITOUT	*2902
12	9052 DBB	*0201
13	9067 BTB	*0201
14	9071 OLGA	*3101
15	9075 DKB	*2402
16	9037 SWEIG007	*2902
17	9008 WILJON	*2501
18	9257 32367	*3303 *7401
19	9038 BM16	*0201
20	9059 SLE005	*0201
21	9064 AMALA	*0217
22	9056 KOSE	*0201
23	9124 IHL	*0201 *3401
24	9035 JBUSH	*3201
25	9049 IBW9	*3301
26	9285 WT49	*0205
27	9191 CH1007	*2410 *2901
28	9320 BEL5GB	*0201 *2902
29	9050 MOU	*2902
30	9021 RSH	*3001 *6802
31	9019 DUCAF	*3002
32	9297 HAG	*0201
33	9098 MT14B	*3101
34	9104 DHIF	*3101
35	9302 SSTO	*3201
36	9024 KT17	*0206 *1101
37	9065 HHKB	*0301
38	9099 LZL	*0217
39	9315 CML	*0101 *0301
40	9134 WHONP199	*0207 *3001
41	9055 H0301	*0301
42	9066 TAB089	*0207
43	9076 T7526	*0207
44	9057 TEM	*6601
45	9239 SHJO	*2301 *2402
46	9013 SCHU	*0301
47	9045 TUBO	*0216 *0301
48	9303 TER-ND	*0201 *1101

Lot No.: 61F

## **Lot-specific information**

Lot No.: 61F

Lot-specific information

	Prod. No.:	Well															
		41	42	43	44	45	46	47	48	49	50	51	52	53	54	55	56
IHWC cell line		B*															
1	9001	SA	*0702	-	-	-	+	-	-	-	+	-	-	-	+	-	-
2	9280	LK707	*5201	*7301	-	-	-	-	-	-	+	-	-	+	-	-	-
3	9011	E4181324	*52011	-	-	-	-	-	-	-	-	-	-	-	-	-	-
4	9275	GU373	*1510	*5301	+	-	+	-	-	-	-	-	-	-	-	-	-
5	9009	KAS011	*3701	-	+	-	+	-	-	-	-	-	-	-	+	-	-
6	9353	SM	*3901	*5101	-	-	-	+	-	+	+	-	-	-	-	+	-
7	9020	QBL	*1801	-	+	-	-	-	-	-	-	-	-	-	-	-	-
8	9007	DEM	*5701	-	+	-	-	-	-	-	-	-	-	-	-	-	-
9	9026	YAR	*3801	-	-	-	-	+	+	-	-	-	-	-	-	-	-
10	9107	LKT3	*5401	-	-	-	-	-	-	-	-	-	-	+	-	-	+
11	9051	PITOUT	*4403	-	+	-	-	-	-	-	-	-	-	-	+	-	-
12	9052	DBB	*5701	-	+	-	-	-	-	-	-	-	-	-	-	-	-
13	9067	BTB	*2705	-	-	-	-	-	-	-	-	-	-	+	-	-	+
14	9071	OLGA	*1501	*1520	+	-	+	-	-	-	-	-	-	-	-	-	-
15	9075	DKB	*4001	-	-	-	-	-	-	+	+	-	-	-	-	-	-
16	9037	SWEIG007	*4002	-	-	-	-	-	-	-	-	+	-	-	-	-	-
17	9008	WILJON	*1801	-	+	-	-	-	-	-	-	-	-	-	-	-	-
18	9257	32367	*1401	*5601	-	-	-	-	+	+	-	-	-	+	-	-	+
19	9038	BM16	*1801	-	+	-	-	-	-	-	-	-	-	-	-	-	-
20	9059	SLE005	*4001	-	-	-	-	-	-	+	+	-	-	-	-	-	-
21	9064	AMALA	*1501	-	-	+	-	-	-	-	-	-	-	-	-	-	-
22	9056	KOSE	*3503	-	+	-	-	-	-	-	-	-	-	-	-	-	-
23	9124	IHL	*4002	*5602	-	-	-	-	-	-	-	+	-	+	-	-	+
24	9035	JBUSH	*3801	-	-	-	-	+	+	+	-	-	-	-	-	-	-
25	9049	IBW9	*1402	-	-	-	-	-	+	+	-	-	-	-	-	-	-
26	9285	WT49	*5801	-	+	-	-	-	-	-	-	-	-	-	-	-	-
27	9191	CH1007	*0705	*5101	-	-	-	-	-	+	-	-	-	+	-	+	-
28	9320	BEL5GB	*4402	*4403	+	-	-	-	-	-	-	-	-	-	+	-	-
29	9050	MOU	*4403	-	-	-	-	-	-	-	-	-	-	-	+	-	-
30	9021	RSH	*4201	-	-	-	-	-	-	+	-	-	+	+	-	-	-
31	9019	DUCAF	*1801	-	+	-	-	-	-	-	-	-	-	-	-	-	-
32	9297	HAG	*4102	-	-	-	-	-	-	+	-	-	+	-	-	-	-
33	9098	MT14B	*4001	-	-	-	-	-	-	+	+	-	-	-	-	-	-
34	9104	DHIF	*3801	-	-	-	-	+	+	+	-	-	-	-	-	-	-
35	9302	SSTO	*4402	-	+	-	-	-	-	-	-	-	-	-	+	-	-
36	9024	KT17	*1501	*3501	+	+	+	-	-	-	-	-	-	-	-	-	-
37	9065	HHKB	*0702	-	-	-	-	-	-	+	-	-	-	+	-	-	-
38	9099	LZL	*1501	-	-	+	-	-	-	-	-	-	-	-	-	-	-
39	9315	CML	*0801	*2705	-	-	-	-	-	+	-	-	+	+	-	-	+
40	9134	WHONP199	*1302	*4601	-	-	-	-	-	-	-	-	-	-	+	-	-
41	9055	H0301	*1402	-	-	-	-	-	-	+	+	-	-	-	-	-	-
42	9066	TAB089	*4601	-	-	-	-	-	-	-	-	-	+	-	-	+	-
43	9076	T7526	*4601	-	-	-	-	-	-	-	-	-	+	-	-	+	-
44	9057	TEM	*3801	-	-	-	-	+	+	+	-	-	-	-	-	-	-
45	9239	SHJO	*4201	*5001	-	-	-	-	-	+	-	-	+	+	-	-	-
46	9013	SCHU	*0702	-	-	-	-	-	-	+	-	-	-	+	-	-	-
47	9045	TUBO	*5101	-	-	-	-	-	-	-	-	-	-	-	+	-	-
48	9303	TER-ND	*3501	*4403	+	+	-	-	-	-	-	-	-	+	-	-	-

Lot No.: 61F

Lot-specific information

Prod. No.:	Well															
	57	58	59	60	61	62	63	64	65	66	67	68	69	70	71	72
	200848033	200848034	200848035	200848036	200848037	200848038	200848039	200848040	200848041	200848042	200848043	200848044	200848045	200848046	200848047	200848048
	IHWC cell line	B*														
1	9001 SA	*0702			-	-	-	-	-	-	-	-	-	-	+	+
2	9280 LK707	*5201	*7301	-	-	+	+	-	+	-	-	-	-	+	-	-
3	9011 E4181324	*52011		-	-	+	+	-	+	-	-	-	+	+	+	-
4	9275 GU373	*1510	*5301	-	-	-	+	-	-	-	-	-	+	-	+	-
5	9009 KAS011	*3701		-	-	-	-	+	-	-	-	-	-	+	-	-
6	9353 SM	*3901	*5101	-	-	+	+	-	-	-	-	-	+	-	+	-
7	9020 QBL	*1801		-	-	-	-	-	-	-	-	-	+	-	+	-
8	9007 DEM	*5701		-	-	-	+	-	-	-	-	+	-	-	+	-
9	9026 YAR	*3801		-	-	-	-	-	-	-	-	-	-	+	-	-
10	9107 LKT3	*5401		-	-	-	-	-	+	+	-	-	-	-	+	-
11	9051 PITOUT	*4403		-	-	-	-	+	-	-	-	-	-	+	-	-
12	9052 DBB	*5701		-	-	-	+	-	-	-	-	+	-	-	+	-
13	9067 BTB	*2705		-	-	-	-	+	-	-	-	-	-	+	-	-
14	9071 OLGA	*1501	*1520	-	-	-	-	+	-	-	-	-	+	-	+	-
15	9075 DKB	*4001		-	-	-	-	+	+	-	-	-	-	-	+	-
16	9037 SWEIG007	*4002		-	-	-	-	+	+	-	-	-	-	-	-	-
17	9008 WILJON	*1801		-	-	-	-	-	-	-	-	-	+	-	+	-
18	9257 32367	*1401	*5601	-	-	-	-	-	-	+	-	-	-	-	+	-
19	9038 BM16	*1801		-	-	-	-	-	-	-	-	-	+	-	+	-
20	9059 SLE005	*4001		-	-	-	-	+	+	-	-	-	-	-	+	-
21	9064 AMALA	*1501		-	-	-	-	+	-	-	-	-	+	-	+	-
22	9056 KOSE	*3503		-	-	-	-	-	-	-	-	+	-	-	+	-
23	9124 IHL	*4002	*5602	-	-	-	-	+	+	-	+	-	-	-	+	-
24	9035 JBUSH	*3801		-	-	-	-	-	-	-	-	-	-	-	+	-
25	9049 IBW9	*1402		-	-	-	-	-	-	-	-	-	-	-	+	-
26	9285 WT49	*5801		-	-	-	+	-	-	-	-	-	+	-	+	-
27	9191 CH1007	*0705	*5101	-	-	+	+	-	-	-	-	-	+	-	+	+
28	9320 BEL5GB	*4402	*4403	-	-	-	-	-	+	+	-	-	-	-	+	-
29	9050 MOU	*4403		-	-	-	-	+	-	-	-	-	-	+	-	-
30	9021 RSH	*4201		-	-	-	-	-	-	-	-	-	-	+	+	-
31	9019 DUCAF	*1801		-	-	-	-	-	-	-	-	-	+	-	+	-
32	9297 HAG	*4102		-	-	-	-	+	+	-	-	-	-	-	+	-
33	9098 MT14B	*4001		-	-	-	-	+	+	-	-	-	-	-	+	-
34	9104 DHIF	*3801		-	-	-	-	-	-	-	-	-	-	+	-	-
35	9302 SSTO	*4402		-	-	-	-	-	+	+	-	-	-	-	+	-
36	9024 KT17	*1501	*3501	-	-	-	-	-	+	-	-	-	+	-	+	-
37	9065 HHKB	*0702		-	-	-	-	-	-	-	-	-	-	-	+	-
38	9099 LZL	*1501		-	-	-	-	-	+	-	-	-	-	+	-	-
39	9315 CML	*0801	*2705	-	-	-	-	-	+	-	-	-	-	-	+	+
40	9134 WHONP199	*1302	*4601	-	-	-	-	-	+	-	-	-	-	+	+	-
41	9055 H0301	*1402		-	-	-	-	-	-	-	-	-	-	-	+	-
42	9066 TAB089	*4601		-	-	-	-	-	-	-	-	-	+	-	+	-
43	9076 T7526	*4601		-	-	-	-	-	-	-	-	-	+	-	+	-
44	9057 TEM	*3801		-	-	-	-	-	-	-	-	-	-	+	-	-
45	9239 SHJO	*4201	*5001	-	-	+	-	+	+	-	+	-	-	-	+	+
46	9013 SCHU	*0702		-	-	-	-	-	-	-	-	-	-	-	+	+
47	9045 TUBO	*5101		-	-	+	+	-	-	-	-	-	+	-	+	-
48	9303 TER-ND	*3501	*4403	-	-	-	-	-	+	-	-	-	+	-	+	-

Lot No.: 61F

#### **Lot-specific information**

Lot No.: 61F

## **Lot-specific information**

Lot No.: 61F

Lot-specific information

## CERTIFICATE OF ANALYSIS

### Olerup SSP® HLA-A-B-DR SSP Combi Tray

Product number: 101.701-24u/06u – without *Taq* pol.  
Lot number: 61F  
Expiry date: 2011-February-01  
Number of tests: 24 tests – Product No. 101.701-24u  
6 tests – Product No. 101.702-06u  
Number of wells per test: 95 + 1

#### Well specifications:

Well No.	Production No.	Well No.	Production No.	Well No.	Production No.
1	2008-550-01	9	2008-550-09	17	2008-550-17
2	2008-550-02	10	2008-550-10	18	2008-550-18
3	2008-550-03	11	2008-550-11	19	2008-550-29
4	2008-550-04	12	2008-550-12	20	2008-550-20
5	2008-550-05	13	2008-550-13	21	2008-550-21
6	2008-550-06	14	2008-550-14	22	2008-550-22
7	2008-550-07	15	2008-550-15	23	2008-550-23
8	2008-550-08	16	2008-550-16	24	2008-550-24

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

Additional 5'-primers in primer solutions 8 and 10 were tested by separately adding one 3'-primer. Additional 3'-primers in primer solutions 3, 4, 8, 14, 16, 18, 19 and 23 were tested by separately adding one 5'-primer. Additional 5'- and 3'-primers in primer solutions 5, 7, 12 and 22 were tested by separately adding one 3'-primer, respectively one 5'-primer.

Well No.	Production No.	Well No.	Production No.	Well No.	Production No.
25	2008-480-01	41	2008-480-17	57	2008-480-33
26	2008-480-02	42	2008-480-18	58	2008-480-34
27	2008-480-03	43	2008-480-19	59	2008-480-35
28	2008-480-04	44	2008-480-20	60	2008-480-36
29	2008-480-05	45	2008-480-21	61	2008-480-37
30	2008-480-06	46	2008-480-22	62	2008-480-38
31	2008-480-07	47	2008-480-23	63	2008-480-39
32	2008-480-08	48	2008-480-24	64	2008-480-40
33	2008-480-09	49	2008-480-25	65	2008-480-41
34	2008-480-10	50	2008-480-26	66	2008-480-42
35	2008-480-11	51	2008-480-27	67	2008-480-43
36	2008-480-12	52	2008-480-28	68	2008-480-44
37	2008-480-13	53	2008-480-29	69	2008-480-45
38	2008-480-14	54	2008-480-30	70	2008-480-47
39	2008-480-15	55	2008-480-31	71	2008-480-48
40	2008-480-16	56	2008-480-32	72	2008-480-48

**Lot No.: 61F**

**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 26, 27, 32, 34, 35, 38, 43, 44, 55, 64, 66, 67 and 69 were tested by separately adding one additional 3'-primer, respectively one additional 5'-primer. Additional 3'-primers in primer solutions 37, 48, 53 and 59 were tested by separately adding one additional 5'-primer. Additional 5'-primers in primer solutions 45 and 53 were tested by separately adding one additional 3'-primer.

Well No.	Production No.	Well No.	Production No.	Well No.	Production No.
73	2008-502-01	81	2008-502-09	89	2008-502-17
74	2008-502-02	82	2008-502-10	90	2008-502-41
75	2008-502-03	83	2008-502-11	91	2008-502-19
76	2008-502-04	84	2008-502-12	92	2008-502-20
77	2008-502-05	85	2008-502-13	93	2008-502-21
78	2008-502-06	86	2008-502-14	94	2008-502-22
79	2008-502-07	87	2008-502-15	95	2008-570-23
80	2008-502-08	88	2008-502-16		

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

The reactivities of one additional 3'-primer in primer solution 75, one additional 3'-primer in primer solution 76, one additional 5'-primer in primer solution 78, one additional 3'-primer in primer solution 81, one additional primer pair in primer solutions 80, 81 and 83, two additional 5'-primers in primer solution 85, one additional primer pair in primer solution 90, one additional 3'-primer in primer solution 91 and one additional 3'-primer in primer solution 92 were tested by separately adding another 5'-primer or 3'-primer. One of the 5'-primers in primer solution 82 and one of the 5'-primers in primer solution 85 were not possible to test.

The negative control primer pairs, **Production No. 2008-417-01**, can detect contamination with PCR products diluted 10<sup>-7</sup>.

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

**Date of approval:** 2009-May-25

**Approved by:**

**Quality Control, Supervisor**

Lot No.: 61F

Lot-specific information

## Declaration of Conformity

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

**Product number:** 101.701-24u/06u

**Lot number:** 61F

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

**Manufacturer:** Olerup SSP AB  
Hasselstigen 1  
SE-133 33 Saltsjöbaden, 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 9001:2000 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, Hasselstigen 1, SE-133 33 Saltsjöbaden, Sweden.

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

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

Saltsjöbaden, Sweden  
2009-May-25

Olle Olerup  
Managing Director

**Lot No.: 61F**

**Lot-specific information**

Lot No.: **61F**

Lot-specific information

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