

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

Product number:	101.701-24u/06u – without <i>Taq</i> pol.
Lot number:	23G
Expiry date:	2011-September-01
Number of tests:	24 tests – Product No. 101.701-24u 6 tests – Product No. 101.701-06u
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. 23G.**

### 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. 61F**).

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
20	Added	-	Primer added for the A*6848 allele.

The **HLA-B low resolution** specificity and interpretation tables have been updated for the HLA-B alleles described since the previous *Olerup SSP®* HLA-A-B-DR SSP Combi Tray lot was made (**Lot No. 61F**).

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

Well	5'-primer	3'-primer	rationale
26	Exchanged	Exchanged	Improve specificity of primer pair.
27	Exchanged	Exchanged	Decreased formation of primer dimers.
29	-	-	Exchanged positive control primer pair.
33	-	-	Exchanged positive control primer pair.
41	-	-	Exchanged positive control primer pair.
44	Exchanged	Exchanged	Improve specificity of primer pair.
50	-	Added	Primer added for the B*400205 allele.
51	Exchanged	Exchanged	Decreased formation of primer dimers.
58	Added	-	Primer added for the B*59xx alleles.
72	-	Exchanged	Decreased formation of primer dimers.

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Lot-specific information

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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. 61F**).

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

Well	5'-primer	3'-primer	rationale
77	Added	-	New primer for the DRB1*0342 allele.
80	Modified	Modified	Increased yield of specific PCR product, and decreased primer dimer formation.
91	-	Removed	3'-primer removed, exchanged positive control primer pair.
93	-	Exchanged	Improved resolution of the DRB1*0342 allele

Change in revision R01 compared to R00:

1. In primer mix 34, the positive control band may be weaker than for other HLA-B low primer mixes.
2. The numbers of the wells referred to in footnote 7 of the specificity table have been corrected.

Changes in revision R02 compared to R01:

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

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Lot-specific information

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

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

Length of PCR product	105	200	105	80	75	80
<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 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.

<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.

## 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. '23G'.

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

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

#### INTERPRETATION

Only HLA-A alleles will be amplified by the 24 wells of the HLA-A low resolution primer set, **wells 1 to 24**, except that primer mix 6 will amplify the B\*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 Cw\*0206 allele will be weakly amplified by primer mix 67, that the Cw\*0223 allele will be amplified by primer mix 25, that

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the HLA-Cw\*0305, 0325 and 0327 alleles will be amplified by primer mix 27, that the Cw\*0620 allele will be amplified by primer mix 69, that the Cw\*0746 allele will be amplified by primer mix 32, and that the Cw\*150204 allele will amplified by primer mix 64. Thus, the interpretation of HLA-B low resolution typings is only influenced by these 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 July 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 July 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\*01010201 to DRB3\*0303, DRB4\*01010101 to DRB4\*0107, DRB5\*010101 to DRB5\*0205**, recognized by the HLA Nomenclature Committee in July 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-July-17, release 2.26.0, [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, B\*3932 to 3934, 3947 and 3950 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\*3532, B\*3537, B\*3553N, B\*3564, B\*356801-356802 and B\*3599 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.

## 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>4,10,11</sup>
<b>1<sup>5</sup></b>	120, 145 bp	<b>800 bp</b>	A1, A36	*01010101-0104N, 0106-0135, 0137, 3601-3604
<b>2<sup>6</sup></b>	135, 200, 255 bp	1070 bp	A2	*02010101-020115, 020117-020119, 020121-022202, 0224-023501, 023503-0247, 0249-0297, 0299, 9201-9221, 9223-9228, 9230-9257, 9269-9271, 9277-9279
<b>3<sup>12</sup></b>	205, 235 bp	1070 bp	A1, A3, A11, A24, A32, A34, A36	*0112, 0119, 0121, 03010101-0317, 0319-0347, 0350, 0351, 0355, 1125, 2492, 3204, 3402-3404, 3407, 3408, 3602
<b>4</b>	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-0135, 0137, 0278, 9269, 0312, 0318, 110101-1127, 1129-1144, 2619, 3008, 3604
<b>5</b>	160, 535 bp	<b>800 bp</b>	A3, A23, A24, A31, A32	*0330, 230101-2321, 24020101-240217, 240220-2411N, 241301-2415, 2417-2464, 2466-2488, 2490N-2499, 3108, 3205, 3213
<b>6</b>	165, 200 bp	<b>800 bp</b>	A2, A23, A24, A29, A80	*9222, 230101-2321, 2405, 241302, 2424, 2907, 8001, <b>B*1827</b>
<b>7<sup>7</sup></b>	175, 200 bp	1070 bp	A2, A23, A24, A26, A33, A68	*021701 <sup>w</sup> , 021702 <sup>w</sup> , 2314, 24020101-240217, 240220-2411N, 241301, 241302, 2417-2450, 2454-2456, 2458-2463, 2466-2491, 2493, 2495-2499, 2616, 3319, 6845
<b>8</b>	165, 200 bp	<b>800 bp</b>	A2, A3, A11, A25, A26, A32, A34, A66, A68, A69	*0255, 0324, 0350, 1110, 250101-2508, 260101-2606, 2608-2615, 2617, 2618, 2620-2638, 2640, 3215, 340101-3408, 6601-6610, 680101-6848, 6901

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<b>9<sup>5</sup></b>	75 bp	<b>800 bp</b>	A25, A32	*250101-2508, 320101-3202, 3204, 3206-3219N
<b>10<sup>5,7</sup></b>	85 bp	1070 bp	A2, A26, A33	*9246, 260101-2602, 2604, 260701-2618, 2620, 2622-2629, 2632-2638, 2640, 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, 1129-1144, 2419, 2444, 2603, 2606, 2621, 3103, 340101-3408, 6601, 6604-6610
<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</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, 0342-0347, 0350, 0351, 0355, 250101-2505, 2507, 2508, 260101-260108, 2602 <sup>w</sup> , 2603, 2605-2608, 2610-2633, 2635-2638, 2640, 3408, 4301, 6601, 6604-6610, 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, 3022-3028
<b>16</b>	370, 395 bp	1070 bp	A31, A32	*2914, 310102-3125, 3205
<b>17</b>	150, 180 bp	1070 bp	A29, A32	*0343, 2913, 320101-3203, 3205-3219N
<b>18</b>	200 bp	1070 bp	A33, A68	*330101, 330301-3325, 6829
<b>19</b>	160, 200 bp	<b>800 bp</b>	A29, A74	*2919, 7401-7414N
<b>20</b>	155, 200, 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, 680101-6848
<b>21</b>	240, 375 bp	<b>800 bp</b>	A2, A24, A26, A68, A69	*0255, 2482, 2622, 3322, 6609, 6829, 6901
<b>22<sup>5,9</sup></b>	85, 240 bp	<b>800 bp</b>	A2, A30, A36	*0234-023503, 0246, 0248, 025601, 025602, 0262, 0270, 0278, 9203, 9229, 3601-3604

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<b>23<sup>5,7</sup></b>	75, 160 bp	<b>800 bp</b>	A2, A26, A68, A80	*0255, 2603, 2605, 2606, 2621, 2630, 3324, 6805, 6815, 6820, 8001
<b>24</b>	360 bp	1070 bp	A1, A3, A11, A33, A36, A74, A80	*01010101-0104N, 0106, 0108- 0129, 0131N-0135, 0137, 0341, 110101-1111, 1113-1117, 1119- 1127, 1129-1140, 1142-1144, 3313, 3601-3604, 7410, 8001

<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 lengths of the specific PCR product(s) of the alleles amplified by these primer mixes are given.

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

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

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

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

<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, 12 and 19 to 23 contain the primer pair giving rise to the shorter, 800 bp, internal positive control band in order to allow kit identification.

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

<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 7, 10, 11 and 23 may yield less specific PCR product than the other primer mixes.

<sup>8</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 22 might faintly amplify most A\*11 alleles.

<sup>10</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>11</sup>Primer mix 6 will amplify the B\*1827 allele.

<sup>12</sup>Primer mix 3 may faintly amplify the A\*30:04, 30:06, 30:17 and 30:29 alleles.

'w', might be weakly amplified.



## 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>4,5</sup>
<b>25<sup>6</sup></b>	110 bp	<b>800 bp</b>	7, 15, 37, 40, 41, 42, 48	*070201-070207, 070209-071802, 0720-0732, 0734-0739, 0741-0747, 0749N, 0750, 0752, 0754-0759, 0761-0772, 0775-0777, 9538, 3707, 4015, 4016, 4023, 4032, 4098, 4108, 420501, 420502, 4805, 4808, 4815, <b>Cw*0223</b>
<b>26</b>	215 bp	1070 bp	8, 15, 44	*080101-0825, 0827-0838, 0840, 9542, 4449
<b>27</b>	140, 235 bp	1070 bp	7, 8, 13, 15, 35, 40, 4005, 44, 46, 53, 57, 58	*0720, 0724, 0760, 0821, 0825, 130101-1304, 1306-1308Q, 1310-1323, 1325, 1326, 1507, 1536 <sup>w</sup> , 1545, 1555, 1568, 1589 <sup>w</sup> , 9526, 3505, 3516, 3517, 3522, 3530, 3551, 3558, 3572, 3589, 3597, 4005, 4071, 4408 <sup>w</sup> , 4454, 4457 <sup>w</sup> , 4460, 4612, 5164, 5314, 5818, <b>Cw*0305, Cw*0325, Cw*0327</b>
<b>28<sup>7</sup></b>	130, 265 bp	1070 bp	13, 14, 15, 35, 40, 41, 44, 45, 47, 49, 50	*130101-1304, 1306-1313, 1315-1323, 1325, 1326, 1401-1404, 1407N, 1409, 1546, 1553, 9506, 3546, 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, 44020101-440205, 440208-4405, 4409-4439, 4441-4443, 4445-4456N, 4458N-4467, 4469, 4501-4509, 47010101-4705, 490101-4902, 4904, 4905, 5001, 5002, 5004
<b>29<sup>8</sup></b>	185, 235 bp	<b>800 bp</b>	14, 16, 27, 37, 38, 39,	*1401, 1407N, 1408, 1410, 2701-2706, 2708-2710, 2712, 2713,

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			47, 64, 67	2716-2718, 2720, 2723, 2726, 2727, 2729, 2731, 2735-2737, 2739-2742, 2744-2746, 2750-2752, 3702, 380101-3803, 3807-3819, 39010101, 39010102L, 390103-390201, 3903, 3905-390602, 3907 <sup>?</sup> , 3908, 3909, 3911, 3914, 3915, 3918, 391902, 3922, 3924-3944, 3946-3948, 3950, 4704, 4705, 670101
<b>30<sup>8</sup></b>	185 bp	<b>800 bp</b>	14, 35, 38, 39, 65	*140201-140602, 1409, 3526, 3805, 3904, 3907 <sup>?</sup>
<b>31</b>	290 bp	1070 bp	15, 62, 63, 75, 76, 77, 46	*15010101-150103, 150106-1502, 1504-1508, 151101-1515, 15170101-151702, 1519-1521, 1524-1528, 1530-1536, 1538-1540, 1542-1546, 1548, 1550, 1555-1558, 1560, 1563, 1565, 1566, 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, 9552, 9554, 9555, 9557, 9559, 9560, 9563, 9564, 460101-4619, 4621
<b>32</b>	165, 220, 330 bp	1070 bp	8, 15, 35, 37, 40, 41, 42, 44, 45, 51, 56, 57, 70, 71, 72	*080101-0805, 0808N-081201, 0815-0819N, 0821-0824, 0826, 0827, 0829-0836, 0838, 150301, 1509, 1510, 1518, 1523, 1529, 1537, 1546, 1547, 1549, 1551-1554, 1561, 1562, 1564, 1569, 1572, 1574, 1580, 1583, 1590, 1591, 1593, 1598, 1599, 9503, 9506, 9508, 9514, 9515, 9519, 9523, 9524, 9527, 9531-9534, 9543, 9551, 9553, 9556, 9558, 9561, 3587, 3712, 4012, 4101-410302, 4105-4108, 4201, 4202, 4204-4208, 4210-4212, 4414, 4415, 4418, 4420, 4462, 4501-4509, 5108, 5120, 5136, 5144N, 5520, 5613, 5709, 8201, 8202, <b>Cw*0746</b>
<b>33<sup>9,12</sup></b>	165, 390 bp	1070 bp	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,

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				511302, 5114, 5117-5120, 5122, 5123, 5126-5130, 5132, 5133, 5137-5141N, 5143, 5144N, 5146, 5148-5161, 5163-5165, 520101-5207, 5209-5213, 560501-5606, 5621, 5808, 7801-7806
<b>34<sup>9,10</sup></b>	180, 395 bp	<b>800 bp</b>	13, 15, 40, 55, 62, 70, 71, 72, 75	*130101-130205, 1307N-1309, 1311, 1314-1320, 132201-1323, 1325, 1509, 1510, 1518, 1521, 1523, 1537, 1544, 1551, 1552, 1566, 1572, 1580, 1590, 1593, 1599, 9508, 9514, 9515, 9519, 9524, 9533, 9534, 9553, 9561, 4048, 5509, 5522, 5524
<b>35<sup>6</sup></b>	105, 195 bp	<b>1070 bp</b>	7, 8, 15, 27, 38, 39, 40, 44, 45, 48, 55, 72	*0727, 0750, 0804, 0817, 150301, 1547, 1549, 1554, 1561, 1562, 1564, 1568, 1569, 1591, 1598, 9503, 9523, 9527, 9531, 9532, 9551, 9556, 9558, 9561, 2718, 2729, 2750, 3803, 390201, 390202, 3908, 391301, 391302, 3923, 3939, 3949, 4012, 4046, 4093, 4211, 4410, 4415, 4418, 4440, 4444, 4501, 4505-4507, 480101-4805, 4807-4819, 5002, 5518, 8201, 8202
<b>36</b>	280 bp	<b>1070 bp</b>	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, 1326, 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, 157801-1582, 1584, 1585, 1587-1589, 1591-1598, 9501-9529, 9531, 9532, 9534-9536, 9538-9549N, 9551-9561, 9563, 9564, 180101-1815, 1817N-1825, 1827-1833, 1835, 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, 3597, 3599, 3907, 3943, 4003, 4020, 4038, 4052, 4059, 4060, 4209, 4417, 4443, 4509, 460101-4610, 4612-4617, 4619, 4621, 4802, 4814, 4904, 4905,

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				5137, 5145, 5163, 530101-5303, 5305, 5306, 5308-5318, 5406, 5409, 5414, 5514, 5523, 5532, 5603, 5609, 5618, 570101-570103, 5706, 5708, 5710, 5711, 5713-5716, 5718, 5719, 580101-5802, 5804-5807, 5809-5819, 5821
<b>37</b>	195 bp	1070 bp	15, 35, 37, 38, 44, 45, 58, 76	*1512, 1514, 1519, 1591, 9531, 9561, 3545, 3571, 370101-3709, 3712, 3713, 3817, 4417, 4443, 4509, 4617, 5807
<b>38<sup>6</sup></b>	105, 435 bp	1070 bp	7, 15, 41, 42, 59, 62, 63, 77	*0704, 0725, 1513, 1516-151702, 1523, 1524, 1567, 1587, 1595, 9557, 4108, 420501, 420502
<b>39<sup>6</sup></b>	115 bp	1070 bp	18	*180101-1815, 1817N-1828, 1830-1833, 1835
<b>40<sup>6</sup></b>	80 bp	1070 bp	27, 40, 44	*2701-2721, 2723-2746, 2750, 2751, 4046, 4093, 4440, 4444
<b>41</b>	150 bp	<b>800 bp</b>	13, 15, 18, 27, 35, 37, 39, 40, 44, 48, 51, 53, 55, 56, 57, 58, 62, 75, 77	*130101, 130102, 1306, 1307N, 1312, 1313, 1317, 1320, 132201-1323, 1325, 1326, 1410, 1502, 1513, 1520, 1521, 152501, 1536, 1544, 1562, 1577, 1580, 1585, 1588, 1589, 9506, 9512, 9521, 9539, 9544, 9554, 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, 3590-3595, 370101-370105, 3703N-3706, 3708, 3710, 3711, 3713, 3714, 3942, 4028, 44020101-440205, 440208-4414, 4416, 4417, 4419N, 4421-4430, 4432-4440, 4442-4446, 4448-4452N, 4455-446402, 4466, 4467, 4469, 4802, 5104, 5142, 5146, 5156, 530101-5313, 5315-5318, 5514, 5609, 5611, 5612, 570101-5710, 5712, 5714-5719, 580101, 580102, 5804, 5805, 5809-5815, 5817N, 5819, 5821, 8301
<b>42</b>	135 bp	1070 bp	7, 8, 18, 35, 37, 39, 56, 78	*0765, 0832, 180101-1808, 1810-1815, 1817N-1833, 1835, 350101-3518, 352001-3524, 3528-3545, 3548, 3550-3555, 3557-3562, 3564-

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				3572, 3574-3595, 3597, 3599, 3711, 391901, 391902, 5606, 7801-7805
<b>43</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, 1560-1567, 1569-1575, 1576 <sup>w</sup> , 1577-1599, 9501-9529, 9531-9561, 9563, 9564, 4012, 4410, 8201, 8202
<b>44</b>	210 bp	<b>800 bp</b>	7, 8, 15, 18, 37, 38	*0727, 370101-3714, 3817
<b>45</b>	170 bp	<b>800 bp</b>	15, 35, 38, 39, 67	*1569, 3535, 380101-3809, 3811-3819, 39010101, 39010102L, 390103-3920, 3922-3924, 3926-3929, 3931, 3935, 3937-3942, 3944-3946, 3948, 3949, 5820, 670101-6702
<b>46<sup>6</sup></b>	110 bp	1070 bp	38	*380101-3803, 3805, 3808-3819
<b>47</b>	395 bp	1070 bp	14, 38, 39, 64, 65	*0769, 1401-1410, 380101-380202, 3804, 3805, 3808-3819, 39010101, 39010102L, 390103-390106, 3903-3907, 3909, 3911, 3912, 3914, 3915, 3918-391902, 3922, 3924-3938Q, 3940N-3948, 3950
<b>48</b>	425 bp	1070 bp	7, 8, 14, 39, 40, 41, 42, 45, 48, 50, 60, 64, 65, 67, 73	*070201-070207, 070209-0726, 0728-0735, 0737, 0739-0764, 0766-0772, 0775-0777, 080101-080106, 0804-0835, 0837, 0838, 0840, 1401-1410, 39010101, 39010102L, 390103-3920, 3922-3950, 400101-400106, 4007, 4009 <sup>?</sup> -4011 <sup>?</sup> , 401401 <sup>?</sup> -4015 <sup>?</sup> , 4016, 4018 <sup>?</sup> , 4021 <sup>?</sup> , 4022N <sup>?</sup> , 4023, 4024 <sup>?</sup> -4038 <sup>?</sup> , 4040 <sup>?</sup> , 4042 <sup>?</sup> -4046 <sup>?</sup> , 4048 <sup>?</sup> -4050 <sup>?</sup> , 4051, 4052 <sup>?</sup> -4058 <sup>?</sup> , 4059, 4060, 4061 <sup>?</sup> -4065 <sup>?</sup> , 4066, 4067 <sup>?</sup> -4069 <sup>?</sup> , 4071 <sup>?</sup> , 407201-4073, 4074 <sup>?</sup> , 4075 <sup>?</sup> , 4077, 4078 <sup>?</sup> , 4079, 4080 <sup>?</sup> -4088 <sup>?</sup> , 4090 <sup>?</sup> -4093 <sup>?</sup> , 4095 <sup>?</sup> , 4098 <sup>?</sup> , 4101-4108, 4201, 4202, 4204-4212, 4501-4509, 480101-4817, 4819, 5001, 5002, 5004, 670101-6702, 7301, 8102
<b>49<sup>13</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,

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<b>50</b>	130 bp	1070 bp	40, 61	4092, 4431, 4606, 480301, 480302 *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, 4094-4098
<b>51<sup>6</sup></b>	105 bp	1070 bp	7, 8, 35, 41, 42, 55	*0704, 0725, 080101-0805, 0807-081201, 0814-0819N, 0821-0824, 0826-0838, 3587, 4101-4108, 4201, 4202, 4204-4207, 4209-4212, 5520
<b>52</b>	325 bp	1070 bp	7, 15, 27, 35, 42, 45, 46, 54, 55, 56, 67, 73, 81	*070201-070207, 070209, 0704-0707, 0709-0712, 0713 <sup>w</sup> , 0714, 0715 <sup>w</sup> , 0717-0726, 0728-0731, 0733-0736, 0739-0749N, 0751-0768, 0770-0772, 0775-0777, 1576, 9501, 2701-2711, 2713-2715, 2717, 2719-2721, 2724-2728, 2730-2738, 2740-2746, 2750-2752, 3576, 4201, 4202, 4204-4206, 4208-4210, 4212, 4506, 460101, 460102, 4602 <sup>w</sup> , 4603-4619, 4621, 5401-5419, 550101-5505, 5507-5517, 5519-5535, 5601-5616, 5618-5622, 5624, 670101, 670102, 6702 <sup>w</sup> , 7301, 8101-8104N, 8201, 8202, 8301
<b>53<sup>6,14</sup></b>	115, 195, 225, 260 bp	1070 bp	35, 37, 44, 47, 51, 57	*3538, 3545, 3571, 370101-370105, 3703N-3706, 3708, 3710-3714, 44020101-440205, 440208-4414, 4416, 4417, 4419N-4436, 4438-4463, 4465-4467, 4469, 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, 5155-5165, 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	*1410, 1557 <sup>w</sup> , 1822, 3521, 3524, 3581, 3704, 4028, 460101-4619, 4621, 5104, 5146, 5156, 5302, 5306, 5714, 5809
<b>56<sup>6</sup></b>	90, 410 bp	1070 bp	7, 27, 35, 47, 54, 55,	*0765, 2702-2711, 2713-2715, 2717, 2719-2721, 2724-2728, 2730-

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			56, 81	2738, 2740-2746, 2750-2752, 3576, 47010101-4703, 5401-5419, 550101-5505, 5507-5517, 5519-5535, 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, 1576 <sup>w</sup> , 1588, 1589, 9512, 9521, 9539, 9544, 9548, 2724, 3546, 4031, 4045, 4080, 480101, 480102, 4804, 4806, 4807, 4809, 4811, 4815, 4816, 4818, 4819, 5535 <sup>w</sup> , 8101-8104N
<b>58</b>	145, 430 bp	1070 bp	40, 44, 49	*4013, 4019, 4418, 4425, 4450, 490101, 490102, 4904, 4905, 5412, 5621, 5901-5905
<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>w</sup> , 1516, 1542, 1567, 1595, 9537 <sup>w</sup> , 4095, 490101, 4902-4905, 5001, 5002, 5004, 510101-5103, 5105, 5107-510902, 5111N-5114, 5116-512402, 5126-5141N, 5143, 5144N, 5148-5155, 5157, 5158, 5160, 5161 <sup>w</sup> , 5163, 5165, 520101-5214, 550101-550104, 5503, 5505, 5509, 5511, 5515, 5517, 5521 <sup>w</sup> , 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, 5155-5165, 520101-5214, 530101-5302, 5304-5308, 5310, 5314-5318, 570101-5711, 5713-5719, 580101-5802, 5804-5816, 5818-5821
<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, 4095, 4097, 4098, 4101-4104, 4105 <sup>?</sup> , 4106-4108, 4409, 4446, 4501-4509, 4702, 4703 <sup>w</sup> , 5001, 5002, 5004
<b>62</b>	300 bp	1070 bp	7, 8, 13, 15, 18, 27, 35, 37, 38, 39, 40, 41,	*0754, 0817, 0838, 130101-1304, 1306, 1308Q-1323, 1325, 1326, 15010101-150104, 150106-150108, 150301-1507, 1512, 1514, 1519,

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			44, 45, 46, 47, 48, 49, 50, 52, 55, 57, 58, 62, 72, 76, 78	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, 9501-9507, 9509-9511N, 9513, 9516-9518, 9522, 9523, 9525-9529, 9531, 9532, 9535-9538, 9540-9542, 9545-9547, 9550-9552, 9554-9560, 9563, 9564, 1812, 2701- 2721, 2724-2746, 2750-2752, 3510, 3513, 3516, 3528, 3563, 3569, 3580, 370101-3707, 3709-3714, 3803, 3804, 390201, 390202, 3908, 391301, 391302, 3922, 3923, 3949, 400101-4007, 4009-4016, 4018- 4024, 4026-4040, 4042-4067, 4070- 4098, 4101-4108, 4211, 44020101- 440205, 440208-4405, 4407-4411, 4413-4467, 4469, 4501-4509, 47010101-4705, 480101-4805, 4807-4815, 4817-4819, 490101- 4905, 5001, 5002, 5004, 520101- 5214, 5317, 5518, 5534, 7805, 7806
<b>63</b>	160, 215 bp	1070 bp	15, 37, 44, 54	*150104, 370104, 4094, 44020101- 440205, 440208, 4406, 4408, 4409, 4411, 4412, 4416, 4419N-4424, 4427, 4433, 4434, 4441, 4444, 4448, 4449, 4452N, 4453, 4455, 4459, 4463, 4466, 4467, 5401-5419, 8301
<b>64</b>	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, 5416-5419, 550101-5503, 5505, 5507, 5510- 5512, 5515, 5516, 5518, 5519, 5521, 5525, 5526, 5529-5531, 5533-5535, 560501, 5606, 5610, 5623, 5901, 5905, 7801, 780202, 7803, <b>Cw*150204</b>
<b>65<sup>15</sup></b>	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,



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				5604, 5607, 5608, 5613, 5614, 5616, 5617, 5620, 5624, 5904, 8201, 8202
<b>66<sup>6,11</sup></b>	90, 240 bp	<b>800 bp</b>	55, 57	*5514, 570101-5715, 5717-5719
<b>67<sup>6</sup></b>	90 bp	1070 bp	13, 15, 39, 40, 56, 58	*1311, 1573, 3917, 4048, 4071, 5162, 5602, 5604, 5610, 580101-5802, 5804-5821, <b>Cw*0206<sup>w</sup></b>
<b>68<sup>6,8</sup></b>	95 bp	1070 bp	7, 8, 18, 35, 37, 38, 39, 44, 51, 52, 53, 78	*0765 <sup>w</sup> , 0832, 180101-1811, 1813-1815, 1817N-1833, 1835, 350101-350902, 3511, 3512, 351401-3515, 3517, 3518, 352001-3524, 3527, 3529-3545, 3548, 3550-3562, 3564-356802, 3570-3572, 3574, 3575, 3576 <sup>w</sup> , 3577-3579, 3581-3595, 3597, 3599, 3708, 3806, 3807, 391901, 391902, 4406, 510101-512402, 5126-5146, 5148-5165, 530101-5316, 5318, 5606 <sup>w</sup> , 7801-7804
<b>69<sup>6</sup></b>	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, 9552, 9554, 9557, 9559, 9560, 9563, 9564, 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, <b>Cw*0620</b>
<b>70<sup>16</sup></b>	360 bp	1070 bp	Bw4	
<b>71</b>	350 bp	1070 bp	Bw6	
<b>72<sup>11</sup></b>	290 bp	<b>800 bp</b>	7, 8, 35, 37, 40, 41,	*070201-070207, 070209-0706, 0708-071802, 0720-0732, 0734-

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42, 48, 53, 81	0739, 0741-0752, 0754-0759, 0761-0772, 0775, 0776, 080101-0808N, 0810, 0811, 0813-0815, 0817-0838, 0840, 3566, 3587, 3707, 4015, 4016, 4030-4032, 4034, 4045, 4059, 4080, 4098, 410201, 4104, 4201, 4202, 420501-4207, 4209-4212, 480101, 480102, 4805-4812, 4814-4819, 5315, 8101-8104N
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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-B low resolution SSP typings. When the primers in a primer mix can give rise to specific PCR products of more than one length this is indicated if the size difference is 20 base pairs or more. Size differences shorter than 20 base pairs are not given. For high resolution SSP kits the respective lengths of the specific PCR product(s) of the alleles amplified by these primer mixes are given.

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

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

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

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

<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 29, 30, 34, 41, 44, 45, 54, 59, 66 and 72 contain the primer pair giving rise to the shorter, 800 bp, internal positive control band in order to allow kit identification.

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, B\*3932 to 3934, 3947 and 3950 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\*3532, B\*3537, B\*3553N, B\*3564, B\*356801-356802 and 3599 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.

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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>Primer mix 25 will amplify the Cw\*0223 allele, primer mix 27 will amplify the Cw\*0305, Cw\*0325 and Cw\*0327 alleles, primer mix 32 will amplify the Cw\*0746 allele, primer mix 64 will amplify the Cw\*150204 allele, primer mix 67 will weakly amplify the Cw\*0206 allele and primer mix 69 will amplify the Cw\*0620 allele.

<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 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>8</sup>Primer mixes 29, 30, and 68 may yield less specific PCR product than the other HLA-B low resolution primer mixes.

<sup>9</sup>Primer mixes 33 and 34 have a higher tendency than other primer mixes to give rise to nonspecific amplifications.

<sup>10</sup>In primer mix 34, the positive control band may be weaker than for other HLA-B low primer mixes.

<sup>11</sup>Primer mixes 66 and 72 may give rise to a primer oligomer artifact.

<sup>12</sup>The B\*57 and B\*58 alleles might be faintly amplified by primer mix 33.

<sup>13</sup>The Cw\*1701 to Cw\*1704 alleles might be faintly amplified by primer mix 49.

<sup>14</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>15</sup>The Cw\*0312 allele might be faintly amplified by primer mix 65.

<sup>16</sup>The Bw4-associated HLA-A specificities A23, A24, A2403, A25 and A32 are not amplified by the primer pair in primer mix 70.

‘w’, might be weakly amplified.

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

## 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
<b>73</b> <sup>7</sup>	205 bp	<b>515 bp</b>	1	*010101-010205, 0104-0122
<b>74</b>	200 bp	430 bp	103	*0103
<b>75</b> <sup>6</sup>	215, 260 bp	430 bp	15	*15010101-1533
<b>76</b>	210 bp	430 bp	16	*160101-160502, 1607-1613N
<b>77</b> <sup>5,6</sup>	120, 220 bp	430 bp	3, 17, 18, 11	*03010101-0343, 1107, 1153, 1525
<b>78</b> <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, 0343, 110201-1103, 111101, 111102, 111401, 111402, 1116, 1120, 1121, 1136, 1140, 1141, 1148, 1159, 1163, 116501, 116502, 1168, 1170, 1173, 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, 1388, 1416, 1419, 1421, 1482
<b>79</b> <sup>5,6</sup>	85, 210 bp	430 bp	3, 18, 11, 13, 14	*030201-0303, 0327, 0329, 0338, 111301 <sup>w</sup> , 111302 <sup>w</sup> , 1126, 1134, 1315, 1319, 1326, 1344, 1353, 1357, 1385, 1386, 1402-140302, 1406, 1409, 1412, 1413, 1417-1421, 1424, 1427, 1429, 1430, 143201 <sup>w</sup> , 143202 <sup>w</sup> , 1433, 1440, 1441, 1447-1449, 1451, 1463, 1465 <sup>w</sup> , 1467, 1477, 1478, 1480, 1481, 1483, 1485
<b>80</b> <sup>5,6</sup>	100, 175 bp	430 bp	4	*040101-0478
<b>81</b> <sup>6</sup>	205, 230 bp	430 bp	7, 13, 14	*07010101-070103, 0703-0717, 1317,

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<b>82<sup>6</sup></b>	170, 215, 250 bp	<b>515 bp</b>	8, 11, 12, 14	1450 *080101-0819, 0821-0836, 1167, 1204, 1216, 1411, 1415, 1468
<b>83<sup>5,6,8</sup></b>	85, 135, 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>5,6</sup></b>	100, 170 bp	430 bp	11, 3, 8	*0308, 0831, 110101-1170, 1172, 1173
<b>86<sup>5,6</sup></b>	85, 105 bp	430 bp	12, 8	*0832, 120101-120204, 120302-1219
<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, 1172, 1173, 130101-1308, 1310-1316, 1318- 1343, 1345-1385, 1387, 1388, 140301, 140302, 1412, 1416, 1419, 1421, 1422, 1425, 1427, 1440, 1453, 1463, 1467, 1469, 1474, 1477, 1478, 1484, 1485
<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, 1172, 120201-120204, 1213, 1215, 1216, 1218, 1219, 130101-130201, 130203, 1304- 130502, 130701-1309, 131101, 131102, 131401-1324, 1326-1329, 1331, 1332, 1334-1336, 1338-1343, 1345-1355, 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, 0311-0341, 0343, 0820, 130101-1316, 1318-1342, 1344, 1346-1366, 1368-1388,

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<b>90</b> <sup>5-7</sup>	100, 140 bp	430 bp	14, 4, 8,13	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, 1483-1485 *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, 1486
<b>91</b> <sup>5-7,9</sup>	110, 135, 170 bp	430 bp	14, 3, 9, 11, 12, 13, 15	*0310, 090102-090202, 0904-0908, 111301, 111302, 1117, 1152, 1343, 140101-1402, 1404-1411, 1413, 1414, 1416-1418, 1420, 1422- 142302, 1426, 1428-1436, 1438, 1439, 1441, 1443-1452, 1454-1457, 1459-1462, 1464, 1465, 1468, 1470-1476, 1479-1483, 1486, 1527
<b>92</b> <sup>5-7</sup>	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, 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, 1484-1486, 1521 <sup>w</sup> , 1604 <sup>w</sup>
<b>93</b> <sup>6</sup>	165, 240 bp	430 bp	52	DRB3*01010201-0113, DRB3*0201-0224, DRB3*030101- 0303
<b>94</b> <sup>10</sup>	215 bp	430 bp	53	DRB4*01010101-0107
<b>95</b>	175 bp	430 bp	51	DRB5*010101-0113, DRB5*0202- 0205

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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 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 lengths of the specific PCR product(s) of the alleles amplified by these primer mixes are given.

Nonspecific amplifications, i.e. a ladder or a smear of bands, may sometimes be seen. GC-rich primers have a higher tendency of giving rise to nonspecific amplifications than other primers, e.g. the primers in wells 75, 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 inherent feature of the primer pair(s) of a primer mix. More often it is due to other factors such as too low amount of DNA in the PCR reactions, taking too long time in setting up the PCR reactions, working at elevated room temperature or using thermal cyclers that are not pre-heated.

<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, well number 82 contains 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 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 multiple differently sized specific PCR fragments in these primer mixes.

<sup>7</sup>Primer mixes 73, 90, 91 and 92 may give rise to primer oligomer formation.

<sup>8</sup>Primer mix 83 may have a higher tendency than other primer mixes to give rise to nonspecific amplifications.

<sup>9</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>10</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.

‘w’, might be weakly amplified.

INTERPRETATION TABLE																									
HLA-A low resolution SSP typing																									
Amplification patterns of the A*0101 to A*8001 alleles																									
		Well <sup>6</sup>																							
		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24
Length of spec.		120	135	205	190	160	165	175	165	75	85	80	185	175	200	90	370	150	200	160	155	240	85	75	360
PCR product(s)		145	200	235		535	200	200	200			175		225	240	135	395	180		200	200	375	240	160	
			255									500				205					240				
Length of int.		800	1070	1070	800	800	800	1070	800	800	1070	1070	800	1070	1070	1070	1070	1070	1070	800	800	800	800	800	1070
pos. control <sup>1</sup>																									
5'-primer(s) <sup>2</sup>		98	78	363	98	144	106	98	98	266	257	302	103	98	98	203	41	180	98	180	78	28	78	176	341
		5'-CTT <sup>3'</sup>	5'-TCT <sup>3'</sup>	5'-ATA <sup>3'</sup>	5'-CTA <sup>3'</sup>	5'-GCC <sup>3'</sup>	5'-CCA <sup>3'</sup>	5'-CTC <sup>3'</sup>	5'-CTA <sup>3'</sup>	5'-ACg <sup>3'</sup>	5'-Cgg <sup>3'</sup>	5'-ggA <sup>3'</sup>	5'-CCT <sup>3'</sup>	5'-CTT <sup>3'</sup>	5'-CAC <sup>3'</sup>	5'-gAA <sup>3'</sup>	5'-CTT <sup>3'</sup>	5'-TTT <sup>3'</sup>	5'-CAC <sup>3'</sup>	5'-TTT <sup>3'</sup>	5'-TCT <sup>3'</sup>	5'-TCg <sup>3'</sup>	5'-TCT <sup>3'</sup>	5'-gCA <sup>3'</sup>	5'-ggA <sup>3'</sup>
		123	106		413	317	176	368	102	266	261	385	423	423		362		418			106	261	527	261	
		5'-AgT <sup>3'</sup>	5'-CCA <sup>3'</sup>		5'-CCg <sup>3'</sup>	5'-gCT <sup>3'</sup>	5'-gCA <sup>3'</sup>	5'-gTT <sup>3'</sup>	5'-ACA <sup>3'</sup>	5'-ACg <sup>3'</sup>	5'-AAC <sup>3'</sup>	5'-ggC <sup>3'</sup>	5'-gCT <sup>3'</sup>	5'-gCT <sup>3'</sup>		5'-ggT <sup>3'</sup>		5'-AgC <sup>3'</sup>			5'-CCA <sup>3'</sup>	5'-AAC <sup>3'</sup>	5'-TgC <sup>3'</sup>	5'-AAC <sup>3'</sup>	
			144				368		413							363					391				
			5'-gCA <sup>3'</sup>				5'-gTT <sup>3'</sup>		5'-CCg <sup>3'</sup>							5'-ATA <sup>3'</sup>					5'-ACg <sup>3'</sup>				
			144																		391				
			5'-TCA <sup>3'</sup>																		5'-ACg <sup>3'</sup>				
3'-primer(s) <sup>3</sup>		203	240	527	256	265	256	259	259	302	299	341	257	282	257	299	238	317	256	299	265	97	265	292	418
		5'-TCT <sup>3'</sup>	5'-ggA <sup>3'</sup>	5'-CCA <sup>3'</sup>	5'-CTg <sup>3'</sup>	5'-CCC <sup>3'</sup>	5'-CCC <sup>3'</sup>	5'-gTT <sup>3'</sup>	5'-gTT <sup>3'</sup>	5'-ggC <sup>3'</sup>	5'-TCg <sup>3'</sup>	5'-CgT <sup>3'</sup>	5'-gCA <sup>3'</sup>	5'-gAC <sup>3'</sup>	5'-gCA <sup>3'</sup>	5'-CCA <sup>3'</sup>	5'-CCT <sup>3'</sup>	5'-ggA <sup>3'</sup>	5'-CCC <sup>3'</sup>	5'-CCA <sup>3'</sup>	5'-CCC <sup>3'</sup>	5'-ggT <sup>3'</sup>	5'-CCC <sup>3'</sup>	5'-gTg <sup>3'</sup>	5'-gTC <sup>3'</sup>
			292	527	559	570	292	502	538			521	559	282	299	411	265	527	256	299	282	355	282	292	
			5'-gTg <sup>3'</sup>	5'-CCT <sup>3'</sup>	5'-CCg <sup>3'</sup>	5'-CCg <sup>3'</sup>	5'-gTT <sup>3'</sup>	5'-CTT <sup>3'</sup>	5'-CCA <sup>3'</sup>			5'-ggg <sup>3'</sup>	5'-CTC <sup>3'</sup>	5'-gAC <sup>3'</sup>	5'-TCg <sup>3'</sup>	5'-TCA <sup>3'</sup>	5'-CCC <sup>3'</sup>	5'-CCT <sup>3'</sup>	5'-CTC <sup>3'</sup>	5'-CCA <sup>3'</sup>	5'-gAC <sup>3'</sup>	5'-gAC <sup>3'</sup>	5'-gAC <sup>3'</sup>	5'-gTT <sup>3'</sup>	
				555			502	539				559	559	559	526				259	341	282		282	299	
				5'-gCA <sup>3'</sup>			5'-CTg <sup>3'</sup>	5'-TCT <sup>3'</sup>				5'-CgT <sup>3'</sup>	5'-CCg <sup>3'</sup>	5'-CCA <sup>3'</sup>		5'-CCA <sup>3'</sup>			5'-gTT <sup>3'</sup>	5'-CgT <sup>3'</sup>	5'-gAC <sup>3'</sup>		5'-gAC <sup>3'</sup>	5'-TCT <sup>3'</sup>	
				555			538														506		570		
				5'-CCA <sup>3'</sup>			5'-CAG <sup>3'</sup>														5'-TgT <sup>3'</sup>		5'-CAC <sup>3'</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
HLA-A allele <sup>4</sup>	ser <sup>5</sup>																								
*01010101-0104N, 0106, 0109-0111N, 0116N-0118N, 0120, 0122N-0127N, 0129, 0131N-0135, 0137	A1, null	1			4																				24
*0107	-	1			4																				
*0108, 0114, 0115N	1	1																							24
*0112, 0119	-	1		3																					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

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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
*0113	-	1			4							11		13		15									24
*0121	-	1		3	4																				24
*0128	-	1			4							11				15									24
*0130	-	1																							
*02010101-020115, 020117-020119, 020121- 0209, 0211-0216, 0218- 022202, 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, 9257, 9270, 9271, 9277-9279	A2, A203, null		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														
*9269	-		2		4																				
*03010101-0307, 0309- 0311N, 0313-0317, 0319-0323, 0325-0329, 0331, 0333-0335, 0337- 0340, 0342, 0344-0347, 0351, 0355	A3				3									13											
*0308, 0332, 0336N	-				3																				
Well No.		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24

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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
*0312	-			3	4																				
*0318, 2619 <sup>7</sup>	-				4									13											
*0324, 0350	-			3					8					13											
*0330	-			3		5								13											
*0341	-			3																					24
*0343	-			3										13		15		17							
*110101-1109, 1113-1117, 1119-112402, 1126, 1127, 1129-1140, 1142-1144	A11				4							11													24
*1110	-				4				8			11													24
*1111	-				4							11	12												24
*1112, 1118, 1141	-				4							11													
*1125	-			3	4							11													24
*230101-2313, 2315-2321	A23					5	6																		
*2314, 2405, 241302, 2424 <sup>8</sup>	-					5	6	7																	
*24020101-240217, 240220-2404, 2406-2411N, 241301, 2417, 2418, 2420-2423, 2425-2443, 2445N-2450, 2454-2456, 2458-2463, 2466-2481, 2483N-2488, 2490N, 2491, 2493, 2495-2499	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												
*260101-260108, 2608, 2610-2615, 2617, 2618, 2620, 2623-2629, 2632, 2633, 2635-2638, 2640	A26, null								8			10		13											
*2602	A26								8			10		w											
*2603, 2606, 2621	A26								8			11		13											23
Well No.		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24

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Well No.		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24
*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						
*300101-3004, 3006, 3007, 3009-3020, 3022-3028	A30															15									
*3008	-				4											15									
*310102-3102, 3105-3107, 3109-3125	A31																16								
*3103	-											11	12				16								
*3104	A31												12				16								
*3108	-					5											16								
*320101-3202, 3206-3212, 3214, 3216-3219N	A32									9								17							
*3203	-																	17							
*3204	A3			3						9															
*3205	-					5										16		17							
*3213	-					5				9								17							
*3215	-								8	9								17							
*330101, 330301-3312, 3314-3318, 3320, 3321, 3323, 3325	A33																	18							
*3313	-										10				14			18							24
*3319	-							7										18							
*3322	-																	18			21				
*3324	-																	18						23	
*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	

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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
*4301	A43												12	13											
*6601, 6604-6608, 6610	A66							8				11	13												
*6602, 6603	A66							8				12													
*6609	-							8				11	13									21			
*680101-6804, 6806-6814, 6816-6819, 6821-6828, 6830-6844, 6846-6848	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, 7414N	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
<i>B*1827</i>						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, 12 and 19 to 23 contain the primer pair giving rise to the shorter, 800 bp, internal positive control band in order to allow kit identification.

<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 multiple specific PCR fragments.

<sup>3</sup>The A\*36 alleles will give rise to identical amplification patterns as some A\*01 alleles. These alleles can be separated by the A\*01 and A\*36 high resolution SSP primer sets.

The A\*0308, 0332, 0336N, 0341 and A\*2492 alleles will give rise to identical amplification patterns. These alleles can be separated by the respective high resolution SSP primer sets.

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>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\*241302 and A\*2424 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.

INTERPRETATION TABLE																																															
HLA-B low resolution SSP																																															
Amplification patterns of the B*0702 to B*8301 alleles <sup>6</sup>																																															
		Well																																													
		25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48																						
Length of spec.		110	215	140	130	185	185	290	165	165	180	105	280	195	105	115	80	150	135	245	210	170	110	395	425																						
PCR product(s)				235	265	235			220	390	395	195			435					400																											
									330																																						
Length of int. pos. control <sup>1</sup>		800	1070	1070	1070	800	800	1070	1070	1070	800	1070	1070	1070	1070	1070	1070	800	1070	1070	800	800	1070	1070	1070																						
5'-primer(s) <sup>2</sup>		527	97	209	103	103	103	45	45	45	45	206	419	142	45	161	167	355	206	45	142	409	246	44	44																						
		5'-TgA <sup>3'</sup>	5'-TCg <sup>3'</sup>	5'-ggC <sup>3'</sup>	5'-CCg <sup>3'</sup>	5'-CCT <sup>3'</sup>	5'-CCg <sup>3'</sup>	5'-ggA <sup>3'</sup>	5'-ggA <sup>3'</sup>	5'-ggA <sup>3'</sup>	5'-ggA <sup>3'</sup>	5'-AgA <sup>3'</sup>	5'-gTC <sup>3'</sup>	5'-TCT <sup>3'</sup>	5'-ggA <sup>3'</sup>	5'-Cgg <sup>3'</sup>	5'-gCT <sup>3'</sup>	5'-TCA <sup>3'</sup>	5'-gAC <sup>3'</sup>	5'-ggA <sup>3'</sup>	5'-TCT <sup>3'</sup>	5'-ggC <sup>3'</sup>	5'-gAA <sup>3'</sup>	5'-ggC <sup>3'</sup>	5'-ggC <sup>3'</sup>																						
		540		363	103	363			357	435	420	420		419	540					368	368	420																									
		5'-gAC <sup>3'</sup>		5'-AgC <sup>3'</sup>	5'-CCg <sup>3'</sup>	5'-AAT <sup>3'</sup>			5'-Tgg <sup>3'</sup>	5'-AAA <sup>3'</sup>	5'-TTA <sup>3'</sup>	5'-TTA <sup>3'</sup>		5'-gTC <sup>3'</sup>	5'-gAC <sup>3'</sup>					5'-gTT <sup>3'</sup>	5'-gTC <sup>3'</sup>	5'-TTA <sup>3'</sup>																									
				363	361				412																																						
				5'-AgT <sup>3'</sup>	5'-AgT <sup>3'</sup>				5'-ATA <sup>3'</sup>																																						
3'-primer(s) <sup>3</sup>		605	272	309	193	246	246	165	206	266	272	272	512	301	309	234	204	463	302	259	311	544	317	272	302																						
		5'-gCT <sup>3'</sup>	5'-Tgg <sup>3'</sup>	5'-gTg <sup>3'</sup>	5'-CgT <sup>3'</sup>	5'-TAT <sup>3'</sup>	5'-TAT <sup>3'</sup>	5'-Tgg <sup>3'</sup>	5'-CCT <sup>3'</sup>	5'-TCC <sup>3'</sup>	5'-TgC <sup>3'</sup>	5'-Tgg <sup>3'</sup>	5'-TAT <sup>3'</sup>	5'-gTC <sup>3'</sup>	5'-ATC <sup>3'</sup>	5'-TCT <sup>3'</sup>	5'-TCT <sup>3'</sup>	5'-gCT <sup>3'</sup>	5'-ggC <sup>3'</sup>	5'-gTT <sup>3'</sup>	5'-ggg <sup>3'</sup>	5'-ggt <sup>3'</sup>	5'-ggA <sup>3'</sup>	5'-TgC <sup>3'</sup>	5'-ggt <sup>3'</sup>																						
			272	559	193	246			538	559	559	572		301	605					266	311				302																						
			5'-TgA <sup>3'</sup>	5'-CAG <sup>3'</sup>	5'-CgT <sup>3'</sup>	5'-TAT <sup>3'</sup>			5'-gTC <sup>3'</sup>	5'-CAG <sup>3'</sup>	5'-CTC <sup>3'</sup>	5'-gCg <sup>3'</sup>		5'-gTC <sup>3'</sup>	5'-gCT <sup>3'</sup>					5'-TCC <sup>3'</sup>	5'-ggg <sup>3'</sup>				302																						
					583	559								570						272	538																										
					5'-gTg <sup>3'</sup>	5'-CTC <sup>3'</sup>								5'-CCg <sup>3'</sup>						5'-Tgg <sup>3'</sup>	5'-gTC <sup>3'</sup>																										
														572						292																											
														5'-gCg <sup>3'</sup>						5'-gTA <sup>3'</sup>																											
																				572																											
Well No.		25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48																						



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<b>HLA-B allele<sup>4</sup></b>	<b>ser.<sup>5</sup></b>																								
*070201-070207, 070209, 070501-0706, 0710, 0712, 0714, 071801, 071802, 0721- 0723, 0726, 0728- 0731, 0734, 0735, 0739, 0741-0747, 0749N, 0752, 0755- 0759, 0761-0764, 0766- 0768, 0770-0772, 0775, 0776	B7	25																							48
*0703, 0708, 0716, 0732, 0737	B7, B703	25																							48
*0704, 0725	B7	25													38										48
*0707, 0777	B7	25																							48
*0709, 0711, 0717	B7	25											36												48
*0713, 0715	-	25																							48
*0719, 0733, 0740, 0753	-																								48
*0720, 0724	-	25		27																					48
*0727	-	25											35								44				
*0736	-	25																							
*0738	-	25																							
*0748, 0751	-																								48
*0750	-	25											35												48
*0754	-	25																							48
*0760	-			27																					48
*0765	-	25																	42						
*0769	-	25																						47	48
*080101-080106, 0805, 0808N, 0810, 0811, 0815, 0818, 0819N, 0822-0824, 0827, 0829- 0831, 0833, 0834	B8, Null		26						32																48
*0802, 0803	B8		26						32																
*0804	-		26						32			35													48
*0806, 0813, 0820, 0840	B8		26																						48
*0807, 0814			26																						48
*0809	-		26						32																48
*081201, 0816	-		26						32																48
*0817	-		26						32			35													48
*0821			26	27					32																48
<b>Well No.</b>		<b>25</b>	<b>26</b>	<b>27</b>	<b>28</b>	<b>29</b>	<b>30</b>	<b>31</b>	<b>32</b>	<b>33</b>	<b>34</b>	<b>35</b>	<b>36</b>	<b>37</b>	<b>38</b>	<b>39</b>	<b>40</b>	<b>41</b>	<b>42</b>	<b>43</b>	<b>44</b>	<b>45</b>	<b>46</b>	<b>47</b>	<b>48</b>



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49	50	51	52	53	54	55	56	57	58	59	60	61	62	63	64	65	66	67	68	69	70	71	72	ser. <sup>5</sup>	Well No.
																									HLA-B allele <sup>4</sup>
			52																			71	72	B7	*070201-070207, 070209, 070501-0706, 0710, 0712, 0714, 071801, 071802, 0721- 0723, 0726, 0728- 0731, 0734, 0735, 0739, 0741-0747, 0749N, 0752, 0755- 0759, 0761-0764, 0766 0768, 0770-0772, 0775, 0776
																						71	72	B7, B703	*0703, 0708, 0716, 0732, 0737
		51	52																			71	72	B7	*0704, 0725
			52																			71		B7	*0707, 0777
			52																			71	72	B7	*0709, 0711, 0717
			w																			71	72	-	*0713, 0715
			52																			71		-	*0719, 0733, 0740, 0753
			52																			71	72	-	*0720, 0724
																						70	72	-	*0727
			52																			70	72	-	*0736
																						70	72	-	*0738
			52																			71	72	-	*0748, 0751
																						71	72	-	*0750
			52										62									71	72	-	*0754
			52																			71		-	*0760
			52				56							64					w			71	72	-	*0765
																						71	72	-	*0769
		51																				71	72	B8, Null	*080101-080106, 0805, 0808N, 0810, 0811, 0815, 0818, 0819N, 0822-0824, 0827, 0829 0831, 0833, 0834
		51																				70	72	B8	*0802, 0803
		51																				71	72	-	*0804
																						71	72	B8	*0806, 0813, 0820, 0840
		51																				71	72		*0807, 0814
		51			54																	71		-	*0809
		51																				71		-	*081201, 0816
		51											62									71	72	-	*0817
		51																				71	72		*0821
49	50	51	52	53	54	55	56	57	58	59	60	61	62	63	64	65	66	67	68	69	70	71	72		Well No.

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Well No.		25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48		
*0825	-		26	27																					48		
*0826, 4207	-								32																	48	
*0828, 0837	-		26										36													48	
*0832	-		26						32										42							48	
*0835	-		26						32				36													48	
*0836	-		26						32																	48	
*0838	-		26						32																	48	
*130101, 130102, 1317, 1320, 132201- 1323, 1325	B13			27	28						34							41									
*130201-130205, 1308Q, 1315, 1318, 1319	B13			27	28						34																
*1303	-			27	28																						
*1304, 1310	-			27	28								36														
*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																						
*1326	-			27	28								36					41									
*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, 3947, 3950	-					29																				47	48
*1410	-					29												41								47	48
Well No.		25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48		

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49	50	51	52	53	54	55	56	57	58	59	60	61	62	63	64	65	66	67	68	69	70	71	72		Well No.
																						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	*130101, 130102, 1317, 1320, 132201- 1323, 1325
													62									70		B13	*130201-130205, 1308Q, 1315, 1318, 1319
													62			65						70		-	*1303
													62									70		-	*1304, 1310
													62	64								70		-	*1306
																						70		Null	*1307N
													62									71		-	*1309
													62					67				70		-	*1311
													62									70		-	*1312, 1313
													62									70		-	*1314
										59			62									70		-	*1316
													62									70		-	*1321
													62									70		-	*1326
																						71		B64	*1401, 1407N
																						71		B65	*140201-1404, 1409
																						71		-	*1405-140602
																						71		-	*1408, 3925N, 3930, 3932-3934, 3947, 3950
						55																71		-	*1410
49	50	51	52	53	54	55	56	57	58	59	60	61	62	63	64	65	66	67	68	69	70	71	72		Well No.

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Well No.		25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48
*15010101, 15010102N, 150103, 150106-150108, 1526N- 152703, 1532, 1534, 1535, 1538, 1550, 1556, 1560, 1570, 1571, 1575, 1579N, 1581, 1582, 1592, 1594N, 1596, 1597, 9502, 9504, 9505, 9509-9511N, 9513, 9517, 9518, 9522, 9525, 9528, 9529, 9535, 9540, 9545- 9547, 9552, 9559, 9560, 9563, 9564	B62, Null, B15							31				36							43						
*150102	B62							31		33		36								43					
*150104	B62											36								43					
*1502, 1588, 9512, 9521, 9539	B75							31				36						41		43					
*150301, 1547, 1549, 1561, 1598, 9503, 9523, 9527, 9532, 9551, 9556, 9558	B72								32			35	36							43					
*1504								31				36								43					
*1505, 1506, 1533, 1539, 1540, 1565, 157801, 1584, 9507, 9536, 9541, 9555	B62, B15							31				36								43					
*1507, 9526	B62			27				31				36								43					
*1508, 151101-151103, 1515, 9548	B75							31				36								43					
*1509	B70								32	33	34									43					
*1510, 1537, 1590, 1599, 9533	B71								32		34									43					
*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, 9553	B71								32		34	36								43					
*1520, 152501	B62							31				36						41		43					
*1521, 1544	B75							31			34	36						41		43					
Well No.		25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48



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49	50	51	52	53	54	55	56	57	58	59	60	61	62	63	64	65	66	67	68	69	70	71	72	Well No.	
													62							69		71		B62, Null, B15	*15010101, 15010102N, 150103, 150106-150108, 1526N, 152703, 1532, 1534, 1535, 1538, 1550, 1556, 1560, 1570, 1571, 1575, 1579N, 1581, 1582, 1592, 1594N, 1596, 1597, 9502, 9504, 9505, 9509-9511N, 9513, 9517, 9518, 9522, 9525, 9528, 9529, 9535, 9540, 9545-9547, 9552, 9559, 9560, 9563, 9564
													62							69		71		B62	*150102
													62	63						69		71		B62	*150104
								57															71	B75	*1502, 1588, 9512, 9521, 9539
													62										71	B72	*150301, 1547, 1549, 1561, 1598, 9503, 9523, 9527, 9532, 9551, 9556, 9558
									w				62							69		71			*1504
													62										71	B62, B15	*1505, 1506, 1533, 1539, 1540, 1565, 157801, 1584, 9507, 9536, 9541, 9555
													62							69		71		B62	*1507, 9526
								57												69		71		B75	*1508, 151101-151103, 1515, 9548
																							71	B70	*1509
																							71	B71	*1510, 1537, 1590, 1599, 9533
													62							69		71		B76	*1512, 1514, 1519
								57														70		B77	*1513
									59													70		B63	*1516, 1567, 1595
																						70		B63	*15170101-151702
																							71	B71	*1518, 1551, 1552, 1572, 1593, 9508, 9514, 9519, 9534, 9553
													62										71	B62	*1520, 152501
								57															71	B75	*1521, 1544
49	50	51	52	53	54	55	56	57	58	59	60	61	62	63	64	65	66	67	68	69	70	71	72	Well No.	

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*1523	-								32		34		36		38					43					
*1524, 1587, 9557	B62							31					36		38					43					
*1528, 9520, 9549N	B15							31					36							43					
*1529	B15								32				36							43					
*1530, 1558, 1563	B62,							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, 9550	B62							31												43					
*1553					28				32				36							43					
*1554	-								32			35	36							43					
*1555	-			27				31					36							43					
*1557	-							31					36							43					
*1562	-								32			35	36					41		43					
*1564	-								32			35	36							43					
*1566	-							31			34		36							43					
*1568	-			27								35	36												
*1569	-								32			35	36							43		45			
*1573	-							31												43					
*1574	-								32				36							43					
*1576	-							31					36							w					
*1577	-							31										41		43					
*1580	-								32		34		36					41		43					
*1583	-							31	32											43					
*1585, 9554	-							31					36					41		43					
*1586	-							31												43					
*1589	-			w				31					36					41		43					
*1591, 9531	-								32			35	36	37						43					
*9501	-							31					36							43					
*9506	-				28			31	32				36					41		43					
*9515	-								32		34		36							43					
*9516	-							31					36							43					
*9524	-								32		34		36							43					
*9537	-							31												43					
*9538	-	25						31					36							43					
*9542	-		26					31					36							43					
*9543	-							31	32				36							43					
*9544	-							31					36					41		43					
*9561	-								32		34	35	36	37						43					
Well No.		25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48

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																					70			-	*1523
													62								69	70		B62	*1524, 1587, 9557
																					69	71		B15	*1528, 9520, 9549N
																						71		B15	*1529
													62								69	71		B62,	*1530, 1558, 1563
								57														71		B75	*1531
													62									70		-	*1536
									59				62	64								71		-	*1542
													62								69	70		-	*1543
													62								69	71		B62	*1545
												61	62								69	71		B72	*1546
													62									71		B62	*1548, 9550
												61	62								69	71			*1553
													62								69	71		-	*1554
								57														71		-	*1555
						w							62								69	71		-	*1557
													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					w													69	71		-	*1576
													62								69	71		-	*1577
																						71		-	*1580
				54									62									71		-	*1583
													62								69	71		-	*1585, 9554
													62	64								71		-	*1586
								57														70		-	*1589
													62									71		-	*1591, 9531
			52										62								69	71		-	*9501
												61	62									71		-	*9506
																						70		-	*9515
49													62									71		-	*9516
49																						71		-	*9524
									w				62								69	71		-	*9537
													62									71		-	*9538
													62								69	71		-	*9542
												61									69	71		-	*9543
								57													69	71		-	*9544
																						71		-	*9561
49	50	51	52	53	54	55	56	57	58	59	60	61	62	63	64	65	66	67	68	69	70	71	72		Well No.

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*180101-1803, 1805-1808, 1810, 1811, 1813-1815, 1817N, 1818, 1820, 1821, 1823N-1825, 1827, 1828, 1830-1833, 1835	B18												36			39			42							
*1804	-												36			39			42							
*1809	-												36			39										
*1812	-												36			39			42							
*1819	-												36			39			42							
*1822	-												36			39		41	42							
*1826	-															39			42							
*1829, 3532, 3537, 3553N, 3564, 356801, 356802, 3599	-												36						42							
*2701	B27					29											40									
*2702	B27					29											40									
*2703-2706, 2709, 2710, 2713, 2717, 2720, 2727, 2731, 2735-2737, 2745, 2746, 2751	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								
*2733	-																40									
*2741	-					29							36				40									
*2750	-					29						35					40									
*2752	-					29																				
Well No.		25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48	



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																			68			71		B18	*180101-1803, 1805-1808, 1810, 1811, 1813-1815, 1817N, 1818, 1820, 1821, 1823N-1825, 1827, 1828, 1830-1833, 1835
													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, 3599
			52										62									70		B27	*2701
			52				56				60		62									70		B27	*2702
			52				56						62									70		B27	*2703-2706, 2709, 2710, 2713, 2717, 2720, 2727, 2731, 2735-2737, 2745, 2746, 2751
			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
																						70		-	*2723
			52				56	57					62									70		-	*2724
			52				56						62								69	70		-	*2725
													62									70		-	*2729
			52				56				60		62									70		-	*2730
			52				56						62									71		-	*2733
			52				56						62									70		-	*2741
			52				56						62									70		-	*2750
			52				56						62									70		-	*2752
49	50	51	52	53	54	55	56	57	58	59	60	61	62	63	64	65	66	67	68	69	70	71	72		Well No.

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Well No.		25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48
*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, 3595	B35																	41	42						
*350402	-									33								41	42						
*3505, 3551, 3558, 3572, 3589, 3597	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	-				28								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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49	50	51	52	53	54	55	56	57	58	59	60	61	62	63	64	65	66	67	68	69	70	71	72	Well No.	
																			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, 3595
																			68			71		-	*350402
																			68			71		B35	*3505, 3551, 3558, 3572, 3589, 3597
																			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													w			71		-	*3576



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*3581	-																	41	42						
*3587	-								32										42						
*370101-370103, 370105, 3703N, 3706, 3713	B37, Null													37				41			44				
*370104	-													37				41			44				
*3702	-					29								37							44				
*3704	-													37				41			44				
*3705	-													37				41			44				
*3707	-	25												37							44				
*3708	-													37				41			44				
*3709	-													37							44				
*3710	-																	41			44				
*3711	-																	41	42		44				
*3712	-								32					37							44				
*3714	-																	41			44				
*380101-380202, 3808, 3809, 3811-3816, 3818, 3819	B38					29																45	46	47	
*3803	B16					29						35										45	46		
*3804	-																					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, 3948	B3901, B39					29																45		47	48
*390201, 3908	B3902, B39					29						35										45			48
*390202, 391301, 391302, 3923, 3949	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
Well No.		25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48



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						55													68			71		-	*3581
		51																	68			71	72	-	*3587
				53									62									70		B37, Null	*370101-370103, 370105, 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
				53									62									70	w	-	*3714
																						70		B38	*380101-380202, 3808, 3809, 3811-3816, 3818, 3819
													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, 3948
													62										71	B3902, B39	*390201, 3908
													62										71	B3902, B39	*390202, 391301, 391302, 3923, 3949
																							71	B39	*3904
																							71	-	*3907
																							71	B39	*3910, 3916, 3920
																							71	-	*3912, 3945
													64						67				71	-	*3917
																						69	71	-	*3918
49	50	51	52	53	54	55	56	57	58	59	60	61	62	63	64	65	66	67	68	69	70	71	72		Well No.

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*391901	-																		42				45		47	48
*391902	-					29													42				45		47	48
*3922	-					29																	45		47	48
*3936	-					29																			47	48
*3939	-					29						35											45			48
*3942	-					29												41					45		47	48
*3943	-					29							36												47	48
*400101-400106, 4007, 4051, 4066, 4073, 4079	B60, B40				28																					48
*400201-400205, 4004, 40060101-400602, 4039, 4070, 4089, 4097	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, 4081, 4084, 4087, 4088, 4092	Null, B40, B60				28																					?
*4012	-								32			35								43						
*4013, 4019	-																									
*401401-401403, 4053	-				28																					?
*4015, 4032	B61	25			28																					?
*4016	-	25			28																					48
*4021	-																									?
*4023	-	25			28																					48
*4025, 4069	-				28																					?
*4026	B21										33															?
*4028	-										33									41						?
*4030, 4034	-				28																					?
*4031, 4045, 4080	-				28																					?
*4038, 4052	-				28																					?
*4046	-												36													?
												35												40		?
Well No.		25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48	

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																			68			71		-	*391901
																			68			71		-	*391902
												62									69	71		-	*3922
																						71		-	*3936
																						71		-	*3939
																						71		-	*3942
																						71		-	*3943
49												61	62									71		B60, B40	*400101-400106, 4007, 4051, 4066, 4073, 4079
	50											61	62									71		B61, B40	*400201-400205, 4004, 40060101-400602, 4039, 4070, 4089, 4097
	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, 4081, 4084, 4087, 4088, 4092
49													62									71		-	*4012
	50							58	60				62									70		-	*4013, 4019
												61	62									71		-	*401401-401403, 4053
												61	62									71	72	B61	*4015, 4032
												61	62									71	72	-	*4016
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	50	51	52	53	54	55	56	57	58	59	60	61	62	63	64	65	66	67	68	69	70	71	72		Well No.

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*4047	-				28																				
*4048	-				28						34														?
*4058	-				28																				?
*4059	-				28								36												48
*4060	-				28								36												48
*4068	-																								?
*4071	-			27																					?
*407201, 407202, 4077	-				28																				48
*4074	-																								?
*4076	-				28																				
*4083	-																								?
*4093	-											35					40								?
*4094	-																								
*4095	-																								?
*4096	-																								
*4098	-	25																							?
*4101, 4106, 4107	B41				28				32																48
*410201	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, 4210, 4212	B42								32																48
*4204	-								32																48
*420501, 420502	-	25							32						38										48
*4208	-								32																48
*4209	-												36												48
*4211	-								32			35													48
*44020101-440205, 440208, 4411, 4416, 4419N, 4421-4424, 4427, 4433, 4434, 4448, 4452N, 4455, 4459, 4463, 4466, 4467	B44, B47, Null				28													41							
*440301-4405, 4413, 4426, 442801-4430, 4432, 4435, 4436, 4438, 4439, 4442, 4445, 4451, 4456N, 4458N, 4461N, 4469	B44				28													41							
*4406	B44																	41							
*4407																		41							
*4408	B44			w														41							
Well No.		25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48



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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
	50											61	62			65	67					71		-	*4071
												61	62									71		-	*407201, 407202, 4077
49	50											61	62									71		-	*4074
49												62												-	*4076
												61	62									71		-	*4083
												62										71		-	*4093
	50											61	62	63								71		-	*4094
	50								59			61	62									71		-	*4095
	50											62									70		-	*4096	
	50											61	62									71	72	-	*4098
	51			54								61	62									71		B41	*4101, 4106, 4107
	51											61	62									71	72	B41	*410201
	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, 4210, 4212
	51	52		54																		71		-	*4204
	51	52																				71	72	-	*420501, 420502
		52																				71		-	*4208
	51	52																				71	72	-	*4209
	51											62										71	72	-	*4211
				53								62	63									70		B44, B47, Null	*44020101-440205, 440208, 4411, 4416, 4419N, 4421-4424, 4427, 4433, 4434, 4448, 4452N, 4455, 4459, 4463, 4466, 4467
				53								62										70		B44	*440301-4405, 4413, 4426, 442801-4430, 4432, 4435, 4436, 4438, 4439, 4442, 4445, 4451, 4456N, 4458N, 4461N, 4469
				53	54					60		63										70		B44	*4406
				53								62										70			*4407
				53								62	63									70		B44	*4408
49	50	51	52	53	54	55	56	57	58	59	60	61	62	63	64	65	66	67	68	69	70	71	72		Well No.



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*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																				
*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, 4610, 4614-4616	B46								31				36												
*4602	-								31				36												
*4603, 4608, 461301, 461302, 4619, 4621	-								31				36												
*4606	-								31				36												
*4611	-								31																
*4612	-				27				31				36												
*4617	-								31				36	37											
*4618	-								31																
*47010101, 47010102	B47				28																				
*4702	-				28																				
*4703	-				28																				
*4704, 4705	-				28	29																			
Well No.		25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48

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				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
				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	62			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, 4610, 4614-4616
				w			55														69	71		-	*4602
				52			55															71		-	*4603, 4608, 461301, 461302, 4619, 4621
49				52			55															71		-	*4606
				52			55									65						71		-	*4611
				52			55														69	71		-	*4612
				52			55														69	71		-	*4617
				52			55								64							71		-	*4618
							56						62									70		B47	*47010101, 47010102
							56					61	62									71		-	*4702
							56					w	62									70	w	-	*4703
													62									70		-	*4704, 4705
49	50	51	52	53	54	55	56	57	58	59	60	61	62	63	64	65	66	67	68	69	70	71	72		Well No.

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*480101, 480102, 4807, 4809, 4811, 4819	B48											35													48
*4802	-											35	36					41							48
*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													48
*490101	B49				28																				
*490102	-				28																				
*4902	-				28																				
*4903	-																								
*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, 5157, 5158, 5160, 5165	B51, B5102, B5103, Null										33														
*510102, 510109, 510202, 5105, 510902	B51										33														
*510104, 510204, 511301, 5116, 5121, 512401, 512402, 5131, 5134, 5135	B51, B52																								
*5104, 5146, 5156	B51										33							41							
*5106, 5159	B51										33														
*5108, 5120, 5144N	B51								32	33															
*5110	-																								
*5115	-																								
*5136	-								32																

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49	50	51	52	53	54	55	56	57	58	59	60	61	62	63	64	65	66	67	68	69	70	71	72		Well No.
								57					62									71	72	B48	*480101, 480102, 4807, 4809, 4811, 4819
													62									71		-	*4802
49													62									71		B48	*480301, 480302
								57					62									71		B48	*4804
													62									71	72	B48	*4805, 4808
								57														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
									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, 5157, 5158, 5160, 5165
										59	60											68	70	B51	*510102, 510109, 510202, 5105, 510902
					54					59	60											68	70	B51, B52	*510104, 510204, 511301, 5116, 5121, 512401, 512402, 5131, 5134, 5135
					54	55					60											68	70	B51	*5104, 5146, 5156
					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
49	50	51	52	53	54	55	56	57	58	59	60	61	62	63	64	65	66	67	68	69	70	71	72		Well No.



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*5137, 5163	-									33			36													
*5142	-																		41							
*5145	-												36													
*5150, 5154	-									33																
*5161	-									33																
*5162	-																									
*5164	-			27						33																
*520101, 520103, 5204, 5205, 5207, 5210-5213	B52									33																
*520102, 520104-5203, 520601, 520602, 5209	B52									33																
*5208, 5214	-																									
*530101-530104, 5305, 5308, 5310, 5316, 5318	B53												36						41							
*5302	B53												36						41							
*5303, 5309, 5311- 5313	-												36						41							
*5304, 5307	-																		41							
*5306	B53												36						41							
*5314	-			27									36													
*5315	-												36						41							
*5317													36						41							
*5401, 5402, 5405N, 5407, 5408N, 5410, 5413, 5416-5419	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																									
Well No.		25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48	

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49	50	51	52	53	54	55	56	57	58	59	60	61	62	63	64	65	66	67	68	69	70	71	72		Well No.
					54					59	60								68		70			-	*5137, 5163
					53	54					60								68		70			-	*5142
					54						60								68		70			-	*5145
										59									68		70			-	*5150, 5154
					54					w	60								68	69	70			-	*5161
					54						60					65		67	68		70			-	*5162
					54						60								68		70			-	*5164
										59	60			62								70		B52	*520101, 520103, 5204, 5205, 5207, 5210-5213
					54					59	60			62								70		B52	*520102, 520104-5203, 520601, 520602, 5209
										59	60			62								70		-	*5208, 5214
											60									68		70		B53	*530101-530104, 5305, 5308, 5310, 5316, 5318
					55						60									68		70		B53	*5302
																				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
											60			62								70		-	*5317
			52				56							63	64							71		B54	*5401, 5402, 5405N, 5407, 5408N, 5410, 5413, 5416-5419
			52				56							63	65							71		-	*5403
			52				56							63								69	71	-	*5404, 5411, 5415
			52				56							63								71		-	*5406
			52				56							63								71		-	*5409, 5414
			52				56		58					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
49	50	51	52	53	54	55	56	57	58	59	60	61	62	63	64	65	66	67	68	69	70	71	72		Well No.

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Well No.		25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48
*5504, 5508, 5513, 5527, 5615, 5619N, 5622	B55																								
*5509, 5524	-										34														
*5514	-												36					41							
*5517, 5528	-																								
*5518	-											35													
*5520	-									32															
*5521	-																								
*5522	-										34														
*5523, 5532, 5618	-												36												
*5534	-																								
*5535	-																								
*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												
*5623	-																								
*570101-570103, 5706, 5708, 5710, 5715, 5718, 5719	B57												36					41							
*5702-5705, 5717	B57																	41							
*5707	-																	41							
*5709	-									32								41							
*5711, 5713	-												36												
*5712	-																	41							
*5714	-												36					41							
*5716	-												36					41							
*580101, 580102, 5804, 5805, 5810N- 5815, 5819, 5821	B58												36					41							
*5802, 5806, 5816	-												36												
*5807	B58												36	37											
*5808	-										33														
*5809	-												36					41							
Well No.		25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48



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49	50	51	52	53	54	55	56	57	58	59	60	61	62	63	64	65	66	67	68	69	70	71	72		Well No.
			52				56															71		B55	*5504, 5508, 5513, 5527, 5615, 5619N, 5622
			52				56			59												71		-	*5509, 5524
			52				56									66						71		-	*5514
			52				56			59												71		-	*5517, 5528
												62	64									71		-	*5518
		51	52		54		56															71		-	*5520
			52				56			w					64					69		71		-	*5521
			52				56															71		-	*5522
			52				56															71		-	*5523, 5532, 5618
			52				56					62	64									71		-	*5534
			52				56	w							64							71		-	*5535
			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					w			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			58	59											70		-	*5621
															64							71		-	*5623
											60						66					70		B57	*570101-570103, 5706, 5708, 5710, 5715, 5718, 5719
											60						66					70		B57	*5702-5705, 5717
					53						60						66					70		-	*5707
					53						60						66					70		-	*5709
											60						66					70		-	*5711, 5713
																	66					71		-	*5712
							55				60						66					70		-	*5714
											60											70		-	*5716
											60							67				70		B58	*580101, 580102, 5804, 5805, 5810N-5815, 5819, 5821
											60							67				70		-	*5802, 5806, 5816
											60							67				70		B58	*5807
					54					59	60							67				70		-	*5808
					55					60								67				70		-	*5809



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Well No.		25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48
*5817N	-												36					41							
*5818				27									36												
*5820																						45			
*5901, 5905	B59																								
*5902, 5903	-																								
*5904	-																								
*670101	B67					29																45		48	
*670102	-																					45		48	
*6702																						45		48	
*7301	B73																								48
*7801, 780202, 7803	B78									33								42							
*780201, 7804	B78									33								42							
*7805	-									33								42							
*7806	-									33															
*8101	B81																								
*8102	-																								48
*8103, 8104N	-																								
*8201, 8202	-								32			35							43						
*8301	-																	41							
HLA-B allele <sup>4</sup>	ser. <sup>5</sup>																								
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
Cw*0206																									
Cw*0223		25																							
Cw*0305, 0325, 0327				27																					
Cw*0620																									
Cw*0746									32																
Cw*150204																									

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49	50	51	52	53	54	55	56	57	58	59	60	61	62	63	64	65	66	67	68	69	70	71	72		Well No.	
																		67			70			-	*5817N	
											60							67			70				*5818	
											60							67			70				*5820	
								58							64						70			B59	*5901, 5905	
								58													70			-	*5902, 5903	
								58								65					70			-	*5904	
			52																			71		B67	*670101	
			52																			71		-	*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
																								ser. <sup>5</sup>	HLA-B allele <sup>4</sup>	
49	50	51	52	53	54	55	56	57	58	59	60	61	62	63	64	65	66	67	68	69	70	71	72		Well No.	
																		w							Cw*0206	
																									Cw*0223	
																									Cw*0305, 0325, 0327	
																					69				Cw*0620	
																									Cw*0746	
															64										Cw*150204	
49	50	51	52	53	54	55	56	57	58	59	60	61	62	63	64	65	66	67	68	69	70	71	72		Well No.	

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<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 29, 30, 34, 41, 44, 45, 54, 59, 66 and 72 contain the primer pair giving rise to the shorter, 800 bp, internal positive control band in order to allow kit identification.

<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\*1324 allele has been renamed B\*132202

The B\*150105 allele has been corrected and renamed B\*9520

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.

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, B\*3932 to 3934, 3947 and 3950 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\*3532, B\*3537, B\*3553N, B\*3564, B\*356801-356802 and 3599 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.

INTERPRETATION TABLE																									
DR low resolution SSP typing																									
Amplification patterns of the DRB1*0101 to DRB1*1003 alleles																									
		Well																							
		73	74	75	76	77	78	79	80	81	82	83	84	85	86	87	88	89	90	91	92	93	94	95	
Length of spec.		205	200	215	210	120	80	85	100	205	170	85	205	100	85	210	195	175	100	110	110	165	215	175	
PCR product(s)				260		220	210	210	175	230	215	135		170	105		210		140	135	175	240			
											250	180								170	225				
Length of int. pos control <sup>1</sup>		515	430	430	430	430	430	430	430	430	515	430	430	430	430	430	430	430	430	430	430	430	430	430	
5'-primer(s) <sup>2</sup>		5'-gAA <sup>3</sup> 14(129)	5'-gAA <sup>3</sup> 14(129)	5'-Agg <sup>3</sup> 13(126)	5'-Agg <sup>3</sup> 13(126)	5'-gTC <sup>3</sup> 13(125)	5'-gTC <sup>3</sup> 13(125)	5'-gTC <sup>3</sup> 13(125)	5'-ACA <sup>3</sup> 13(125)	5'-ATA <sup>3</sup> 14(127)	5'-gTT <sup>3</sup> 16(133)	5'-TAT <sup>3</sup> 26(165)	5'-gCg <sup>3</sup> 31(178)	5'-gTC <sup>3</sup> 13(125)	5'-gTT <sup>3</sup> 16(133)	5'-gCT <sup>3</sup> 10(116)	5'-gCT <sup>3</sup> 10(116)	5'-gTC <sup>3</sup> 13(125)	5'-gTA <sup>3</sup> 37(197)	5'-gTA <sup>3</sup> 26(164)	5'-gTC <sup>3</sup> 13(125)	5'-gCT <sup>3</sup> 10(116)	5'-gCT <sup>3</sup> 10(116)	5'-gTA <sup>3</sup> 28(170)	5'-gTA <sup>3</sup> 13(125)
				5'-AAg <sup>3</sup> 13(126)	5'-AAg <sup>3</sup> 13(126)	5'-gTT <sup>3</sup> 47(227)	5'-gTT <sup>3</sup> 16(133)	5'-gTT <sup>3</sup> 16(133)	5'-ACC <sup>3</sup> 13(125)	5'-ATA <sup>3</sup> 14(127)	5'-gTT <sup>3</sup> 16(133)	5'-gAg <sup>3</sup> 58(261)	5'-gCg <sup>3</sup> 31(178)	5'-gTC <sup>3</sup> 16(133)	5'-gTC <sup>3</sup> 13(125)	5'-gTC <sup>3</sup> 13(125)	5'-gTC <sup>3</sup> 13(125)	5'-gTC <sup>3</sup> 13(125)	5'-gTT <sup>3</sup> 37(197)	5'-CAG <sup>3</sup> 34(189)	5'-CAG <sup>3</sup> 34(189)	5'-gCT <sup>3</sup> 10(116)	5'-gCT <sup>3</sup> 10(116)	5'-gTA <sup>3</sup> 28(170)	5'-gTA <sup>3</sup> 13(125)
									5'-gTC <sup>3</sup> 13(125)	5'-gTT <sup>3</sup> 16(133)				5'-CgT <sup>3</sup> 38(200)											
									5'-gTC <sup>3</sup> 13(125)	5'-gTT <sup>3</sup> 16(133)							5'-gTC <sup>3</sup> 16(133)								
3'-primer(s) <sup>3</sup>		5'-gCg <sup>3</sup> 71(299)	5'-gAg <sup>3</sup> 67(286)	5'-CgC <sup>3</sup> 71(298)	5'-gAg <sup>3</sup> 67(286)	5'-ggC <sup>3</sup> 73(305)	5'-gCT <sup>3</sup> 71(299)	5'-CTg <sup>3</sup> 70(295)	5'-gTg <sup>3</sup> 58(260)	5'-CTC <sup>3</sup> 73(305)	5'-CCT <sup>3</sup> 74(307)	5'-CgA <sup>3</sup> 73(305)	5'-CAC <sup>3</sup> 86(344)	5'-CCT <sup>3</sup> 58(260)	5'-gTg <sup>3</sup> 38(199)	5'-gTC <sup>3</sup> 70(295)	5'-gAA <sup>3</sup> 67(286)	5'-CgC <sup>3</sup> 58(260)	5'-CgC <sup>3</sup> 71(298)	5'-CTg <sup>3</sup> 70(295)	5'-gTg <sup>3</sup> 60(265)	5'-AAg <sup>3</sup> 77(317)	5'-CTC <sup>3</sup> 87(346)	5'-gCg <sup>3</sup> 57(258)	
Well No.	DR	73	74	75	76	77	78	79	80	81	82	83	84	85	86	87	88	89	90	91	92	93	94	95	

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Well No.	DR	73	74	75	76	77	78	79	80	81	82	83	84	85	86	87	88	89	90	91	92	93	94	95
<b>DRB1 allele<sup>4</sup></b>	<b>ser<sup>5</sup></b>																							
*010101-010205, 0104-0122	1	73																						
*0103	103	74																						
*03010101-030106, 0304-0306, 0309, 0311-0316, 0318-0320, 0322, 0323, 0325, 0326, 0328, 0330, 0331, 0333, 0334, 0336, 0337, 0343	17					77	78											89						
*030201-0303, 0327, 0329, 0338	18					77		79										89						
*0307, 0317, 0321, 0324, 0332, 0335, 0339-0341	-					77												89						
*0308	-					77	78					83		85										
*0310	-					77	78													91	92			
*0342	-					77																		
*040101-0461, 0463-0468, 0470-0472, 0474-0478	4								80															
*0462, 0469, 0473	-								80										90					
*07010101-070103, 0703-0717	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											
Well No.	DR	73	74	75	76	77	78	79	80	81	82	83	84	85	86	87	88	89	90	91	92	93	94	95

Lot No.: **23G**

Lot-specific information

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Well No.	DR	73	74	75	76	77	78	79	80	81	82	83	84	85	86	87	88	89	90	91	92	93	94	95
*110101-110108, 110401-110404, 110601, 110602, 1109-111002, 111201, 111202, 1115, 1124, 112701-1130, 1132, 1133, 1135, 1137-1139, 1143, 1144, 1146, 1147, 1149-1151, 115401, 115402, 1156, 1158, 1160-1162, 1166, 1172	11													85		87	88							
*110201-1103, 111101, 111102, 111401, 111402, 1116, 1120, 1121, 1136, 1140, 1141, 1148, 1159, 1163, 116501, 116502, 1168, 1170	11						78							85		87	88							
*1105	11													85			88							
*1107, 1153	-					77					83			85										
*110801, 110802, 1118-111902, 1142, 1157	11													85		87								
*111301, 111302	11							w						85						91	92			
*1117, 1152	-													85						91	92			
*1122	11													85										
*1123, 1125	-													85		87	88					92		
*1126, 1134	11						79							85										
*1131, 1145, 1164	11													85		87						92		
*1155	-													85			88					92		
*1169	-													85			88			90				
*1173	-						78							85		87								
*120101, 120102, 120302, 1205-1212, 1214, 1217	12														86									
*120201-120204, 1213, 1215, 1218, 1219	12														86		88							
*1204	-										82				86									
*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						
Well No.	DR	73	74	75	76	77	78	79	80	81	82	83	84	85	86	87	88	89	90	91	92	93	94	95

Lot No.: **23G**

Lot-specific information

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Well No.	DR	73	74	75	76	77	78	79	80	81	82	83	84	85	86	87	88	89	90	91	92	93	94	95
*130202, 130301, 130302, 1310, 133301, 1337, 1366, 1381, 1388	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, 1484	-															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			
*1344, 1386	-							79										89						
*1345	-						78									87	88		90	92				
*1367	-															87	88							
*1385, 1419, 1421							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, 1486	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, 1485	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			
*1422	-															87	88		90	91	92			
Well No.	DR	73	74	75	76	77	78	79	80	81	82	83	84	85	86	87	88	89	90	91	92	93	94	95



Lot No.: **23G**

Lot-specific information

www.olerup-ssp.com

Well No.	DR	73	74	75	76	77	78	79	80	81	82	83	84	85	86	87	88	89	90	91	92	93	94	95
*1424	-							79									88	89						
*1425, 1453	-															87	88		90		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		92			
*1465	-							w										89		91	92			
*1468	-									82									90	91	92			
*1469	-															87			90		92			
*1473	-																88		90	91	92			
*1474	-															87			90	91	92			
*1482	-						78												90	91	92			
*15010101-1520, 1522-1524, 1526, 1528-1533	15			75																				
*1521	-			75																	w			
*1525	-			75		77																		
*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, DRB3*0201-0224, DRB3*030101-0303	52																					93		
DRB4*01010101-0107	53																						94	
DRB5*010101-0113, DRB5*0202-0205	51																							95
Well No.	ser <sup>5</sup>	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.: **23G**

Lot-specific information

[www.olerup-ssp.com](http://www.olerup-ssp.com)

<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, well number 82 contains 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, and in parenthesis the nucleotide, in the 2<sup>nd</sup> exon, matching the specificity-determining 3'-end of the primer is given. Codon and nucleotide numbering as on the [www.ebi.ac.uk/imgt/hla](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, and in parenthesis the nucleotide, in the 2<sup>nd</sup> exon, matching the specificity-determining 3'-end of the primer is given in the anti-sense direction. Codon and nucleotide numbering as on the [www.ebi.ac.uk/imgt/hla](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.: **23G**

Lot-specific information

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CELL LINE VALIDATION SHEET																						
HLA-A low resolution primer set																						
					Well																	
						1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	
				Lot No.:		200855001	200855002	200855003	200855004	200855005	200855006	200855007	200855008	200855009	200855010	200855011	200855012	200959313	200855014	200855015	200855016	
	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	9025 DEU	*3101			-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	+
9	9026 YAR	*2601			-	-	-	-	-	-	-	-	+	-	+	-	-	+	-	-	-	-
10	9107 LKT3	*2402			-	-	-	-	+	-	+	-	-	-	-	-	-	-	-	-	-	-
11	9051 PITOUT	*2902			-	-	-	-	-	-	-	-	-	-	-	-	-	-	+	-	-	-
12	9052 DBB	*0201			-	+	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
13	9004 JESTHOM	*0201			-	+	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
14	9071 OLGA	*3101			-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
15	9075 DKB	*2402			-	-	-	-	+	-	+	-	-	-	-	-	-	-	-	-	-	-
16	9037 SWEIG007	*2902			-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	+	-	-
17	9282 CTM3953540	*0301	*8001		-	-	+	-	-	+	-	-	-	-	-	-	-	+	-	-	-	-
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.: **23G**

Lot-specific information

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<b>CELL LINE VALIDATION SHEET</b>											
<b>HLA-A low resolution primer set</b>											
				<b>Well</b>							
				17	18	19	20	21	22	23	24
				Lot No.:							
				200855017	200855018	200855019	200959320	200855021	200855022	200855023	200855024
	<b>IHC cell line</b>	<b>A*</b>	<b>A*</b>								
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	9025 DEU	*3101		-	-	-	-	-	-	-	-
9	9026 YAR	*2601		-	-	-	-	-	-	-	-
10	9107 LKT3	*2402		-	-	-	-	-	-	-	-
11	9051 PITOUT	*2902		-	-	-	-	-	-	-	-
12	9052 DBB	*0201		-	-	-	-	-	-	-	-
13	9004 JESTHOM	*0201		-	-	-	-	-	-	-	-
14	9071 OLGA	*3101		-	-	-	-	-	-	-	-
15	9075 DKB	*2402		-	-	-	-	-	-	-	-
16	9037 SWEIG007	*2902		-	-	-	-	-	-	-	-
17	9282 CTM3953540	*0301	*8001	-	+	-	-	-	-	+	+
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.: **23G**

Lot-specific information

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<b>CELL LINE VALIDATION SHEET</b>																			
<b>HLA-B low resolution SSP kit</b>																			
			Prod. No.:	Well															
				25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40
	IHWC cell line	B*		200959401	200959402	200963303	200963304	200963305	200963306	200959407	200959408	200963309	200959410	200959411	200959412	200963313	200959414	200959415	200959416
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	9025 DEU	*3501		-	-	-	-	-	-	-	-	-	-	-	+	-	-	-	-
9	9026 YAR	*3801		-	-	-	-	+	-	-	-	-	-	-	-	-	-	-	-
10	9107 LKT3	*5401		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
11	9051 PITOUT	*4403		-	-	-	+	-	-	-	-	-	-	-	-	-	-	-	-
12	9052 DBB	*5701		-	-	-	-	-	-	-	-	-	-	-	+	-	-	-	-
13	9004 JESTHOM	*2705		-	-	-	-	+	-	-	-	-	-	-	-	-	-	-	+
14	9071 OLGA	*1501	*1520	-	-	-	-	-	-	+	-	-	-	-	+	-	-	-	-
15	9075 DKB	*4001		-	-	-	+	-	-	-	-	-	-	-	-	-	-	-	-
16	9037 SWEIG007	*4002		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
17	9282 CTM3953540	*0801	*5501	-	+	-	-	-	-	-	-	-	-	-	-	+	-	-	-
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.: **23G**

Lot-specific information

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<b>CELL LINE VALIDATION SHEET</b>																			
<b>HLA-B low resolution SSP kit</b>																			
			Prod. No.:	Well															
				41	42	43	44	45	46	47	48	49	50	51	52	53	54	55	56
	IHWC cell line	B*		200963317	200959418	200959419	200963320	200959421	200959422	200959423	200959424	200959425	200963326	200963327	200959428	200963329	200959430	200959431	200963332
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	9025 DEU	*3501		+	+	-	-	-	-	-	-	-	-	-	-	-	-	-	-
9	9026 YAR	*3801		-	-	-	-	-	+	+	-	-	-	-	-	-	-	-	-
10	9107 LKT3	*5401		-	-	-	-	-	-	-	-	-	-	-	+	-	-	-	+
11	9051 PITOUT	*4403		+	-	-	-	-	-	-	-	-	-	-	-	+	-	-	-
12	9052 DBB	*5701		+	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
13	9004 JESTHOM	*2705		-	-	-	-	-	-	-	-	-	-	-	+	-	-	-	+
14	9071 OLGA	*1501	*1520	+	-	+	-	-	-	-	-	-	-	-	-	-	-	-	-
15	9075 DKB	*4001		-	-	-	-	-	-	-	+	+	-	-	-	-	-	-	-
16	9037 SWEIG007	*4002		-	-	-	-	-	-	-	-	-	+	-	-	-	-	-	-
17	9282 CTM3953540	*0801	*5501	-	-	-	-	-	-	-	+	-	-	+	+	-	-	-	+
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.: **23G**

Lot-specific information

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<b>CELL LINE VALIDATION SHEET</b>																				
<b>HLA-B low resolution SSP kit</b>																				
			Prod. No.:	Well																
				57	58	59	60	61	62	63	64	65	66	67	68	69	70	71	72	
	IHWC cell line	B*		200959433	200959434	200959435	200959436	200959437	200959438	200963339	200963340	200959441	200959442	200963343	200959444	200959445	200959446	200959447	200963348	
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	9025 DEU	*3501		-	-	-	-	-	-	-	-	-	-	-	+	-	-	+	-	
9	9026 YAR	*3801		-	-	-	-	-	-	-	-	-	-	-	-	-	+	-	-	
10	9107 LKT3	*5401		-	-	-	-	-	-	-	+	+	-	-	-	-	-	+	-	
11	9051 PITOUT	*4403		-	-	-	-	-	+	-	-	-	-	-	-	-	+	-	-	
12	9052 DBB	*5701		-	-	-	+	-	-	-	-	-	+	-	-	-	+	-	-	
13	9004 JESTHOM	*2705		-	-	-	-	-	+	-	-	-	-	-	-	-	+	-	-	
14	9071 OLGA	*1501	*1520	-	-	-	-	-	+	-	-	-	-	-	-	+	-	+	-	
15	9075 DKB	*4001		-	-	-	-	+	+	-	-	-	-	-	-	-	-	+	-	
16	9037 SWEIG007	*4002		-	-	-	-	+	+	-	-	-	-	-	-	-	-	+	-	
17	9282 CTM3953540	*0801	*5501	-	-	+	-	-	-	-	+	-	-	-	-	-	-	+	+	
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.: **23G**

Lot-specific information

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<b>CELL LINE VALIDATION SHEET</b>												
<b>DR low resolution primer set</b>												
				Prod. No.:	Well							
					89	90	91	92	93	94	95	
					200960317	200960318	200963419	200960320	200963421	200960322	200960323	
	<b>IHWC cell line</b>	<b>DRB1</b>										
1	9001 SA	*0101			-	-	-	-	-	-	-	
2	9280 LK707	*1502	*0405		-	-	-	-	-	+	+	
3	9011 E4181324	*1502			-	-	-	-	-	-	+	
4	9275 GU373	*0301			+	-	-	-	+	-	-	
5	9009 KAS011	*1601			-	-	-	-	-	-	+	
6	9353 SM	*0407	*0803		-	-	-	-	-	+	-	
7	9020 QBL	*0301			+	-	-	-	+	-	-	
8	9025 DEU	*0401			-	-	-	-	-	-	-	
9	9026 YAR	*0402			-	-	-	-	-	+	-	
10	9107 LKT3	*0405			-	-	-	-	-	+	-	
11	9051 PITOUT	*0701			-	-	-	-	-	+	-	
12	9052 DBB	*0701			-	-	-	-	-	+	-	
13	9004 JESTHOM	*0101			-	-	-	-	-	-	-	
14	9071 OLGA	*0802			-	-	-	-	-	-	-	
15	9075 DKB	*0901			-	-	+	-	-	+	-	
16	9037 SWEIG007	*1101			-	-	-	-	+	-	-	
17	9282 CTM3953540	*0301	*1301		+	-	-	-	-	-	-	
18	9257 32367	*0901	*1101		-	-	+	-	+	+	-	
19	9038 BM16	*1201			-	-	-	-	+	-	-	
20	9059 SLE005	*1302			+	-	-	-	+	-	-	
21	9064 AMALA	*1402			+	-	+	-	+	-	-	
22	9056 KOSE	*1302	*1401		+	+	+	+	+	-	-	
23	9124 IHL	*0803	*1414		+	-	+	+	+	-	-	
24	9035 JBUSH	*1101			-	-	-	-	+	-	-	
25	9049 IBW9	*0701			-	-	-	-	-	+	-	
26	9285 WT49	*0301			+	-	-	-	+	-	-	
27	9191 CH1007	*0405	*1001		-	-	-	-	-	+	-	
28	9320 BEL5GB	*0416	*0701		-	-	-	-	-	+	-	
29	9050 MOU	*0701			-	-	-	-	-	+	-	
30	9021 RSH	*0302			+	-	-	-	+	-	-	
31	9019 DUCAF	*0301			+	-	-	-	+	-	-	
32	9297 HAG	*1303			+	-	-	-	+	-	-	
33	9098 MT14B	*0404			-	-	-	-	-	+	-	
34	9104 DHIF	*1101			-	-	-	-	+	-	-	
35	9302 SSTO	*0403			-	-	-	-	-	+	-	
36	9024 KT17	*0403	*0406		-	-	-	-	-	+	-	
37	9065 HHKB	*1301			+	-	-	-	+	-	-	
38	9099 LZL	*1402			+	-	+	-	+	-	-	
39	9315 CML	*0301	*0401		+	-	-	-	+	+	-	
40	9134 WHONP199	*0701	*0901		-	-	+	-	-	+	-	
41	9055 H0301	*1302			+	-	-	-	+	-	-	
42	9066 TAB089	*0803			-	-	-	-	-	-	-	
43	9076 T7526	*0901			-	-	+	-	-	+	-	
44	9057 TEM	*1401			-	+	+	+	+	-	-	
45	9239 SHJO	*0701			-	-	-	-	+	-	-	
46	9013 SCHU	*1501			-	-	-	-	-	-	+	
47	9045 TUBO	*1104	*1201		-	-	-	-	+	-	-	
48	9303 TER-ND	*0103			-	-	-	-	-	-	-	



Lot No.: **23G**

Lot-specific information

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## CERTIFICATE OF ANALYSIS

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

**Product number:** 101.701-24u/06u – without *Taq* pol.  
**Lot number:** 23G  
**Expiry date:** 2011-September-01  
**Number of tests:** 24 tests – Product No. 101.701-24u  
6 tests – Product No. 101.701-06u  
**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	2009-593-20
5	2008-550-05	13	2009-593-13	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'- and 3'-primers in primer solutions 4, 5, 6 to 8, 12, 15, 17 and 20 to 22 were tested by separately adding one 3'-primer, respectively one 5'-primer. One additional 5'-primer in primer solution 10 was tested by separately adding one 3'-primer. Additional 3'-primers in primer solutions 3, 14, 16, 18, 19 and 23 were tested by separately adding one 5'-primer.

Well No.	Production No.	Well No.	Production No.	Well No.	Production No.
25	2009-594-01	41	2009-633-17	57	2009-594-33
26	2009-594-02	42	2009-594-18	58	2009-594-34
27	2009-633-03	43	2009-594-19	59	2009-594-35
28	2009-633-04	44	2009-633-20	60	2009-594-36
29	2009-633-05	45	2009-594-21	61	2009-594-37
30	2009-633-06	46	2009-594-22	62	2009-594-38
31	2009-594-07	47	2009-594-23	63	2009-633-39
32	2009-594-08	48	2009-594-24	64	2009-633-40
33	2009-633-09	49	2009-594-25	65	2009-594-41
34	2009-594-10	50	2009-633-26	66	2009-594-42
35	2009-594-11	51	2009-633-27	67	2009-633-43
36	2009-594-12	52	2009-594-28	68	2009-594-44
37	2009-633-13	53	2009-633-29	69	2009-594-45
38	2009-594-14	54	2009-594-30	70	2009-594-46
39	2009-594-15	55	2009-594-31	71	2009-594-47
40	2009-594-16	56	2009-633-32	72	2009-633-48

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

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

Well No.	Production No.	Well No.	Production No.	Well No.	Production No.
73	2009-634-01	81	2009-603-09	89	2009-603-17
74	2009-603-02	82	2009-603-10	90	2009-603-41
75	2009-634-03	83	2009-603-11	91	2009-634-19
76	2009-603-04	84	2009-603-12	92	2009-603-20
77	2009-634-05	85	2009-603-13	93	2009-634-21
78	2009-603-06	86	2009-603-14	94	2009-603-22
79	2009-603-07	87	2009-603-15	95	2008-603-23
80	2009-634-08	88	2009-603-16		

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

Additional 5'- and 3'-primers in primer solutions 81, 83 and 90 were tested by separately adding one 3'-primer, respectively one 5'-primer. Additional 5'-primer in primer solutions 78 and 87 were tested by separately adding one 3'-primer. Additional 3'-primers in primer solutions 73, 75, 84 and 92 were tested by separately adding one 5'-primer. One of the 5'-primers in primer solution 75, 76 81, 82 and 88, and three of the 5'-primers in primer solution 80 were not possible to test. In primer solution 85, one 5'-primer and one 3'-primer were not possible to test.

Lot No.: **23G**

Lot-specific information

[www.olerup-ssp.com](http://www.olerup-ssp.com)

The negative control primer pairs, **Production No. 2009-614-01**, can detect contamination with PCR products diluted  $10^{-7}$ .

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

**Date of approval:** 2009-September-24

**Approved by:**

**Quality Control, Supervisor**

Lot No.: **23G**

Lot-specific information

[www.olerup-ssp.com](http://www.olerup-ssp.com)

## Declaration of Conformity

**Product name:** *Olerup* SSP® HLA-A-B-DR SSP Combi Tray  
**Product number:** 101.701-24u/06u  
**Lot number:** 23G

**Intended use:** HLA-A, HLA-B and HLA-DR 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-September-24

Olle Olerup  
Managing Director



Lot No.: **23G**

Lot-specific information

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