

Olerup SSP® HLA-A-B-DR SSP Combi Tray

Product number:	101.701-24/06 – including <i>Taq</i> pol.
Lot number:	23G
Expiry date:	2011-September-01
Number of tests:	24 tests – Product No. 101.701-24 6 tests – Product No. 101.701-06
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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Well 96 contains Negative Control primer pairs, that will amplify more than 95% of the *Olerup SSP®* HLA Class I, DRB, DQB1 and DPB1 amplicons as well as the amplicons generated by control primer pairs.

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

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

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

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

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 be 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 2009¹ will be amplified by the primers in the HLA-A low resolution primer set, **wells 1 to 24**. The HLA-A alleles will be grouped into their corresponding serological specificities².

All the HLA-B alleles, i.e. **B*0702 to B*8301**, recognized by the HLA Nomenclature Committee in July 2009¹ will be amplified by the primers in the HLA-B low resolution primer set, **wells 25 to 72**. The HLA-B alleles will be grouped into their corresponding serological specificities³.

All the HLA-DRB1, -DRB3, -DRB4⁴ and -DRB5 alleles, i.e. **DRB1*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 2009² will be amplified by the primers in the DR low resolution primer set, **wells 73 to 95**. The HLA-DRB alleles will be grouped into their corresponding serological specificities⁵.

¹HLA-A, HLA-B and HLA-DRB alleles listed on the IMGT/HLA web page 2009-July-17, release 2.26.0, www.ebi.ac.uk/imgt/hla.

²The 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.

³The 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.

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

⁵The 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 ¹	Size of control band ²	HLA-A serology ³	Amplified HLA-A alleles ^{4,10,11}
1 ⁵	120, 145 bp	800 bp	A1, A36	*01010101-0104N, 0106-0135, 0137, 3601-3604
2 ⁶	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
3 ¹²	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
4	190 bp	800 bp	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
5	160, 535 bp	800 bp	A3, A23, A24, A31, A32	*0330, 230101-2321, 24020101-240217, 240220-2411N, 241301-2415, 2417-2464, 2466-2488, 2490N-2499, 3108, 3205, 3213
6	165, 200 bp	800 bp	A2, A23, A24, A29, A80	*9222, 230101-2321, 2405, 241302, 2424, 2907, 8001, B*1827
7 ⁷	175, 200 bp	1070 bp	A2, A23, A24, A26, A33, A68	*021701 ^w , 021702 ^w , 2314, 24020101-240217, 240220-2411N, 241301, 241302, 2417-2450, 2454-2456, 2458-2463, 2466-2491, 2493, 2495-2499, 2616, 3319, 6845
8	165, 200 bp	800 bp	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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9⁵	75 bp	800 bp	A25, A32	*250101-2508, 320101-3202, 3204, 3206-3219N
10^{5,7}	85 bp	1070 bp	A2, A26, A33	*9246, 260101-2602, 2604, 260701-2618, 2620, 2622-2629, 2632-2638, 2640, 3313
11^{5,7,8}	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
12	185 bp	800 bp	A11, A25, A26, A31, A34, A43, A66	*1111, 2506, 2609, 3103, 3104, 340101-3408, 4301, 6602, 6603
13	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 ^w , 2603, 2605-2608, 2610-2633, 2635- 2638, 2640, 3408, 4301, 6601, 6604-6610, 7413
14	200, 240 bp	1070 bp	A29, A33	*29010101-2919, 3313
15⁵	90, 135, 205 bp	1070 bp	A1, A3, A30	*0113, 0128, 0343, 300101-3004, 3006-3020, 3022-3028
16	370, 395 bp	1070 bp	A31, A32	*2914, 310102-3125, 3205
17	150, 180 bp	1070 bp	A29, A32	*0343, 2913, 320101-3203, 3205- 3219N
18	200 bp	1070 bp	A33, A68	*330101, 330301-3325, 6829
19	160, 200 bp	800 bp	A29, A74	*2919, 7401-7414N
20	155, 200, 240 bp	800 bp	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
21	240, 375 bp	800 bp	A2, A24, A26, A68, A69	*0255, 2482, 2622, 3322, 6609, 6829, 6901
22^{5,9}	85, 240 bp	800 bp	A2, A30, A36	*0234-023503, 0246, 0248, 025601, 025602, 0262, 0270, 0278, 9203, 9229, 3601-3604

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23^{5,7}	75, 160 bp	800 bp	A2, A26, A68, A80	*0255, 2603, 2605, 2606, 2621, 2630, 3324, 6805, 6815, 6820, 8001
24	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

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

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

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

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

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

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

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

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

In addition, wells 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.

³The 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 web site and the information available at the www.worldmarrow.org web site and have also inferred the serological grouping from the naming of the sequence-defined allele.

⁴For several HLA-A alleles only partial 1st exon nucleotide sequences are available. We assume that unknown sequences are conserved within allelic groups.

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

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

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

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

⁸The primer pairs in vial 11 will in most samples give rise to two to three specific PCR fragments.

⁹Primer mix 22 might faintly amplify most A*11 alleles.

¹⁰The 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.

¹¹Primer mix 6 will amplify the B*1827 allele.

¹²Primer 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 product¹	Size of control band²	HLA-B serol.³	Amplified HLA-B alleles^{4,5}
25⁶	110 bp	800 bp	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, Cw*0223
26	215 bp	1070 bp	8, 15, 44	*080101-0825, 0827-0838, 0840, 9542, 4449
27	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 ^w , 1545, 1555, 1568, 1589 ^w , 9526, 3505, 3516, 3517, 3522, 3530, 3551, 3558, 3572, 3589, 3597, 4005, 4071, 4408 ^w , 4454, 4457 ^w , 4460, 4612, 5164, 5314, 5818, Cw*0305, Cw*0325, Cw*0327
28⁷	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
29⁸	185, 235 bp	800 bp	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 [?] , 3908, 3909, 3911, 3914, 3915, 3918, 391902, 3922, 3924-3944, 3946-3948, 3950, 4704, 4705, 670101
30⁸	185 bp	800 bp	14, 35, 38, 39, 65	*140201-140602, 1409, 3526, 3805, 3904, 3907 [?]
31	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
32	165, 220, 330 bp	1070 bp	8, 15, 35, 37, 40, 41, 42, 44, 45, 51, 56, 57, 70, 71, 72	*080101-0805, 0808N-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, Cw*0746
33^{9,12}	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
34^{9,10}	180, 395 bp	800 bp	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
35⁶	105, 195 bp	1070 bp	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
36	280 bp	1070 bp	7, 8, 13, 15, 18, 27, 35, 39, 40, 42, 44, 46, 48, 49, 51, 53, 54, 55, 56, 57, 58, 62, 63, 70, 71, 72, 75, 76, 77	*0709, 0711, 0717, 0828, 0835, 0837, 1304, 1310, 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
37	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
38⁶	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
39⁶	115 bp	1070 bp	18	*180101-1815, 1817N-1828, 1830- 1833, 1835
40⁶	80 bp	1070 bp	27, 40, 44	*2701-2721, 2723-2746, 2750, 2751, 4046, 4093, 4440, 4444
41	150 bp	800 bp	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
42	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
43	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 ^w , 1577-1599, 9501-9529, 9531-9561, 9563, 9564, 4012, 4410, 8201, 8202
44	210 bp	800 bp	7, 8, 15, 18, 37, 38	*0727, 370101-3714, 3817
45	170 bp	800 bp	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
46⁶	110 bp	1070 bp	38	*380101-3803, 3805, 3808-3819
47	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
48	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 [?] -4011 [?] , 401401 [?] -4015 [?] , 4016, 4018 [?] , 4021 [?] , 4022N [?] , 4023, 4024 [?] -4038 [?] , 4040 [?] , 4042 [?] -4046 [?] , 4048 [?] -4050 [?] , 4051, 4052 [?] -4058 [?] , 4059, 4060, 4061 [?] - 4065 [?] , 4066, 4067 [?] -4069 [?] , 4071 [?] , 407201-4073, 4074 [?] , 4075 [?] , 4077, 4078 [?] , 4079, 4080 [?] -4088 [?] , 4090 [?] - 4093 [?] , 4095 [?] , 4098 [?] , 4101-4108, 4201, 4202, 4204-4212, 4501-4509, 480101-4817, 4819, 5001, 5002, 5004, 670101-6702, 7301, 8102
49¹³	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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50	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
51⁶	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
52	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 ^w , 0714, 0715 ^w , 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 ^w , 4603-4619, 4621, 5401-5419, 550101-5505, 5507-5517, 5519- 5535, 5601-5616, 5618-5622, 5624, 670101, 670102, 6702 ^w , 7301, 8101-8104N, 8201, 8202, 8301
53^{6,14}	115, 195, 225, 260	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
54	215 bp	800 bp	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
55	130, 270	1070 bp	18, 35, 37, 40, 46, 51, 53, 57, 58	*1410, 1557 ^w , 1822, 3521, 3524, 3581, 3704, 4028, 460101-4619, 4621, 5104, 5146, 5156, 5302, 5306, 5714, 5809
56⁶	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
57⁶	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 ^w , 1588, 1589, 9512, 9521, 9539, 9544, 9548, 2724, 3546, 4031, 4045, 4080, 480101, 480102, 4804, 4806, 4807, 4809, 4811, 4815, 4816, 4818, 4819, 5535 ^w , 8101-8104N
58	145, 430 bp	1070 bp	40, 44, 49	*4013, 4019, 4418, 4425, 4450, 490101, 490102, 4904, 4905, 5412, 5621, 5901-5905
59⁶	120, 210 bp	800 bp	13, 15, 45, 49, 50, 51, 52, 55, 56, 58, 62, 63, 78	*1316, 1504 ^w , 1516, 1542, 1567, 1595, 9537 ^w , 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 ^w , 5163, 5165, 520101-5214, 550101-550104, 5503, 5505, 5509, 5511, 5515, 5517, 5521 ^w , 5524, 5525, 5528, 5529, 5531, 5533, 560501-5606, 5621, 5808, 7801-7806
60	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
61	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 [?] , 4106-4108, 4409, 4446, 4501-4509, 4702, 4703 ^w , 5001, 5002, 5004
62	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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	63	160, 215 bp	1070 bp	15, 37, 44, 54	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
					*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	
					64	180, 210 bp
65 ¹⁵	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
66^{6,11}	90, 240 bp	800 bp	55, 57	*5514, 570101-5715, 5717-5719
67⁶	90 bp	1070 bp	13, 15, 39, 40, 56, 58	*1311, 1573, 3917, 4048, 4071, 5162, 5602, 5604, 5610, 580101- 5802, 5804-5821, Cw*0206^w
68^{6,8}	95 bp	1070 bp	7, 8, 18, 35, 37, 38, 39, 44, 51, 52, 53, 78	*0765 ^w , 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 ^w , 3577-3579, 3581-3595, 3597, 3599, 3708, 3806, 3807, 391901, 391902, 4406, 510101- 512402, 5126-5146, 5148-5165, 530101-5316, 5318, 5606 ^w , 7801- 7804
69⁶	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, Cw*0620
70¹⁶	360 bp	1070 bp	Bw4	
71	350 bp	1070 bp	Bw6	
72¹¹	290 bp	800 bp	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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¹Alleles are assigned by the presence of specific PCR product(s). However, the sizes of the specific PCR products may be helpful in the interpretation of HLA-B low resolution SSP typings. When the primers in a primer mix can give rise to specific PCR products of more than one length this is indicated if the size difference is 20 base pairs or more. Size differences shorter than 20 base pairs are not given. For high resolution SSP kits the respective lengths of the specific PCR product(s) of the alleles amplified by these primer mixes are given.

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

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

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

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

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

Well number 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.

³The 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 web site and the information available at the www.worldmarrow.org web site and have also inferred the serological grouping from the naming of the sequence-defined allele.

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

The B*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.

⁵Primer 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.

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

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

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

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

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

¹¹Primer mixes 66 and 72 may give rise to a primer oligomer artifact.

¹²The B*57 and B*58 alleles might be faintly amplified by primer mix 33.

¹³The Cw*1701 to Cw*1704 alleles might be faintly amplified by primer mix 49.

¹⁴Primer mix 53 might generate a false band of about 500 base pairs. This band should be disregarded when interpreting HLA-B low resolution typings.

¹⁵The Cw*0312 allele might be faintly amplified by primer mix 65.

¹⁶The 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 ¹	Size of control band ²	DR serology ³	Amplified HLA-DRB ⁴ alleles
73 ⁷	205 bp	515 bp	1	*010101-010205, 0104-0122
74	200 bp	430 bp	103	*0103
75 ⁶	215, 260 bp	430 bp	15	*15010101-1533
76	210 bp	430 bp	16	*160101-160502, 1607-1613N
77 ^{5,6}	120, 220 bp	430 bp	3, 17, 18, 11	*03010101-0343, 1107, 1153, 1525
78 ^{5,6}	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
79 ^{5,6}	85, 210 bp	430 bp	3, 18, 11, 13, 14	*030201-0303, 0327, 0329, 0338, 111301 ^w , 111302 ^w , 1126, 1134, 1315, 1319, 1326, 1344, 1353, 1357, 1385, 1386, 1402-140302, 1406, 1409, 1412, 1413, 1417-1421, 1424, 1427, 1429, 1430, 143201 ^w , 143202 ^w , 1433, 1440, 1441, 1447-1449, 1451, 1463, 1465 ^w , 1467, 1477, 1478, 1480, 1481, 1483, 1485
80 ^{5,6}	100, 175 bp	430 bp	4	*040101-0478
81 ⁶	205, 230 bp	430 bp	7, 13, 14	*07010101-070103, 0703-0717, 1317,

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82⁶	170, 215, 250 bp	515 bp	8, 11, 12, 14	1450
				*080101-0819, 0821-0836, 1167, 1204, 1216, 1411, 1415, 1468
83^{5,6,8}	85, 135, 180 bp	430 bp	3, 9, 11	*0308, 090102-0908, 1107, 1153
84	205 bp	430 bp	10	*100101-1003
85^{5,6}	100, 170 bp	430 bp	11, 3, 8	*0308, 0831, 110101-1170, 1172, 1173
86^{5,6}	85, 105 bp	430 bp	12, 8	*0832, 120101-120204, 120302-1219
87	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
88⁶	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
89	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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90⁵⁻⁷	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
91^{5-7,9}	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
92⁵⁻⁷	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 ^w , 1604 ^w
93⁶	165, 240 bp	430 bp	52	DRB3*01010201-0113, DRB3*0201-0224, DRB3*030101- 0303
94¹⁰	215 bp	430 bp	53	DRB4*01010101-0107
95	175 bp	430 bp	51	DRB5*010101-0113, DRB5*0202- 0205

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¹ Alleles are assigned by the presence of specific PCR product(s). However, the sizes of the specific PCR products may be helpful in the interpretation of DR low resolution SSP 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 inherit feature of the primer pair(s) of a primer mix. More often it is due to other factors such as too low amount of DNA in the PCR reactions, taking too long time in setting up the PCR reactions, working at elevated room temperature or using thermal cyclers that are not pre-heated.

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

Well number 73 contains the primer pair giving rise to the longer, 515 bp, internal positive control band in 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.

³The 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 web site and the information available at the www.worldmarrow.org web site and have also inferred the serological grouping from the naming of the sequence-defined allele.

⁴For several DRB alleles only partial second exon nucleotide sequences are available. In these instances it is not known whether some of the primers of the SSP set are completely matched with the target sequences or not. We assume that unknown sequences in the first hyperpolymorphic region of the second exon of DRB alleles are conserved within allelic groups and that unknown sequences of codons 87 to 92 are identical with the DRB1*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.

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

⁶Individual alleles can give to rise to multiple differently sized specific PCR fragments in these primer mixes.

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

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

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

¹⁰The DRB4*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 ⁶																								
		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	
Length of spec.		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					225	240	135	395	180		200	200	375	240	160		
		255											500										240			
Length of int.		800																								1070
pos. control ¹		98	78	363	98	144	106	176	102	266	257	302	423	98	98	203	41	180								
5'-primer(s) ²		123	106	363	98	143	176	102	266	257	302	423	98	98	203	41	180									
		144	144	368	413	317	368	102	266	257	302	423	98	98	203	41	180									
		144	144	368	413	317	368	102	266	257	302	423	98	98	203	41	180									
		144	144	368	413	317	368	102	266	257	302	423	98	98	203	41	180									
		144	144	368	413	317	368	102	266	257	302	423	98	98	203	41	180									
		144	144	368	413	317	368	102	266	257	302	423	98	98	203	41	180									
		144	144	368	413	317	368	102	266	257	302	423	98	98	203	41	180									
		144	144	368	413	317	368	102	266	257	302	423	98	98	203	41	180									
		144	144	368	413	317	368	102	266	257	302	423	98	98	203	41	180									
		144	144	368	413	317	368	102	266	257	302	423	98	98	203	41	180									
		144	144	368	413	317	368	102	266	257	302	423	98	98	203	41	180									
		144	144	368	413	317	368	102	266	257	302	423	98	98	203	41	180									
		144	144	368	413	317	368	102	266	257	302	423	98	98	203	41	180									
		144	144	368	413	317	368	102	266	257	302	423	98	98	203	41	180									
		144	144	368	413	317	368	102	266	257	302	423	98	98	203	41	180									
		144	144	368	413	317	368	102	266	257	302	423	98	98	203	41	180									
		144	144	368	413	317	368	102	266	257	302	423	98	98	203	41	180									
		144	144	368	413	317	368	102	266	257	302	423	98	98	203	41	180									
		144	144	368	413	317	368	102	266	257	302	423	98	98	203	41	180									
		144	144	368	413	317	368	102	266	257	302	423	98	98	203	41	180									
		144	144	368	413	317	368	102	266	257	302	423	98	98	203	41	180									
		144	144	368	413	317	368	102	266	257	302	423	98	98	203	41	180									
		144	144	368	413	317	368	102	266	257	302	423	98	98	203	41	180									
		144	144	368	413	317	368	102	266	257	302	423	98	98	203	41	180									
		144	144	368	413	317	368	102	266	257	302	423	98	98	203	41	180									
		144	144	368	413	317	368	102	266	257	302	423	98	98	203	41	180									
		144	144	368	413	317	368	102	266	257	302	423	98	98	203	41	180									
		144	144	368	413	317	368	102	266	257	302	423	98	98	203	41	180									
		144	144	368	413	317	368	102	266	257	302	423	98	98	203	41	180									
		144	144	368	413	317	368	102	266	257	302	423	98	98	203	41	180									
		144	144	368	413	317	368	102	266	257	302	423	98	98	203	41	180									
		144	144	368	413	317	368	102	266	257	302	423	98	98	203	41	180									
		144	144	368	413	317	368	102	266	257	302	423	98	98	203	41	180									
		144	144	368	413	317	368	102	266	257	302	423	98	98	203	41	180									
		144	144	368	413	317	368	102	266	257	302	423	98	98	203	41	180									
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		144	144	368	413	317	368	102	266	257	302	423	98	98	203	41	180									
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		144	144	368	413	317	368	102	266	257	302	423	98	98	203	41	180									
		144	144	368	413	317	368	102	266	257	302	423	98	98	203	41	180									
		144	144	368	413	317	368	102	266	257	302	423	98	98	203	41	180									
		144	144	368	413	317	368	102	266	257	302	423	98	98	203	41	180									
		144	144	368	413	317	368	102	266	257	302	423	98	98	203	41	180									
		144	144	368	413	317	368	102	266	257	302	423	98	98	203	41	180									
		144	144	368	413	317	368	102	266	257	302	423	98	98	203	41	180									
		144	144	368	413	317	368	102	266	257	302	423	98	98	203	41	180									
		144	144	368	413	317	368	102	266	257	302	423	98	98	203	41	180									
		144	144	368	413	317	368	102	266	257	302	423	98	98	203	41	180									
		144	144	368	413	317	368	102	266	257	302	423	98	98	203	41	180									
		144	144	368	413	317	368	102	266	257	302	423	98	98	203	41	180									
		144	144	368	413	317	368	102	266	257	302</															

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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 ⁷	-				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 ⁸	-					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				
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
*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 ⁴	ser ⁵																								
Well No.		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24
B*1827								6																	
Well No.		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24

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

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

In addition, wells number 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.

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

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

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

⁵The 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 web site and the information available at the www.worldmarrow.org web site and have also inferred the serological grouping from the naming of the sequence-defined allele.

⁶The primer pairs in vials 2 and 11 will in most samples give rise to multiple specific PCR fragments.

³The 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.

⁷The 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.

⁸The 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 alleles⁶

		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 ¹																											
5'-primer(s) ²																											
		5' -gAC 3'	527	5' -TgA 3'	800																						
		5' -Tgg 3'	540	5' -TCg 3'	97	1070																					
		5' -AgC 3'	309	5' -AgC 3'	363	209	1070																				
		5' -Agt 3'	193	5' -Cgt 3'	361	103	5' -CCg 3'	103																			
		5' -AAT 3'	363	5' -AAAT 3'	363	5' -CCT 3'	103	800																			
		5' -Tgg 3'	272	5' -ATA 3'	412	5' -Tgg 3'	357	5' -ggA 3'	45	1070																	
		5' -CAG 3'	559	5' -TCC 3'	266	435	5' -AAA 3'	420	5' -ggA 3'	45	1070																
		5' -CTC 3'	559	5' -Tgc 3'	272	5' -TTA 3'	420	5' -ggA 3'	45	800																	
		5' -TAT 3'	246	5' -TAT 3'	246	5' -TAT 3'	206	5' -ggA 3'	206	1070																	
		5' -Tgg 3'	538	5' -CCT 3'	538	5' -ATA 3'	266	5' -ggA 3'	419	142																	
		5' -gTC 3'	559	5' -TCC 3'	559	5' -TCC 3'	272	5' -ggA 3'	540	45	1070																
		5' -gCg 3'	583	5' -Ctg 3'	572	5' -Tgg 3'	272	5' -ggA 3'	420	161	167	1070															
		5' -CTC 3'	559	5' -TAT 3'	570	5' -ATC 3'	301	5' -ggA 3'	419	5' -TCT 3'	305	167	1070														
		5' -CCg 3'	572	5' -gTC 3'	570	5' -ATC 3'	605	5' -ggA 3'	540	5' -ggA 3'	420	167	1070														
		5' -gCg 3'	572	5' -gTC 3'	572	5' -ATC 3'	309	5' -ggA 3'	420	5' -ggA 3'	420	167	1070														
		5' -ggC 3'	572	5' -gTC 3'	572	5' -ATC 3'	234	5' -ggA 3'	420	5' -ggA 3'	420	167	1070														
		5' -ggC 3'	572	5' -gTC 3'	572	5' -ATC 3'	204	5' -ggA 3'	420	5' -ggA 3'	420	167	1070														
		5' -ggC 3'	572	5' -gTC 3'	572	5' -ATC 3'	463	5' -ggA 3'	420	5' -ggA 3'	420	167	1070														
		5' -ggC 3'	572	5' -gTC 3'	572	5' -ATC 3'	302	5' -ggA 3'	420	5' -ggA 3'	420	167	1070														
		5' -ggC 3'	572	5' -gTC 3'	572	5' -ATC 3'	266	5' -ggA 3'	420	5' -ggA 3'	420	167	1070														
		5' -ggC 3'	572	5' -gTC 3'	572	5' -ATC 3'	272	5' -ggA 3'	420	5' -ggA 3'	420	167	1070														
		5' -ggC 3'	572	5' -gTC 3'	572	5' -ATC 3'	292	5' -ggA 3'	420	5' -ggA 3'	420	167	1070														
		5' -ggC 3'	572	5' -gTC 3'	572	5' -ATC 3'	311	5' -ggA 3'	420	5' -ggA 3'	420	167	1070														
		5' -ggC 3'	572	5' -gTC 3'	572	5' -ATC 3'	311	5' -ggA 3'	420	5' -ggA 3'	420	167	1070														
		5' -ggC 3'	572	5' -gTC 3'	572	5' -ATC 3'	311	5' -ggA 3'	420	5' -ggA 3'	420	167	1070														
		5' -ggC 3'	572	5' -gTC 3'	572	5' -ATC 3'	311	5' -ggA 3'	420	5' -ggA 3'	420	167	1070														
		5' -ggC 3'	572	5' -gTC 3'	572	5' -ATC 3'	311	5' -ggA 3'	420	5' -ggA 3'	420	167	1070														
		5' -ggC 3'	572	5' -gTC 3'	572	5' -ATC 3'	311	5' -ggA 3'	420	5' -ggA 3'	420	167	1070														
		5' -ggC 3'	572	5' -gTC 3'	572	5' -ATC 3'	311	5' -ggA 3'	420	5' -ggA 3'	420	167	1070														
		5' -ggC 3'	572	5' -gTC 3'	572	5' -ATC 3'	311	5' -ggA 3'	420	5' -ggA 3'	420	167	1070														
		5' -ggC 3'	572	5' -gTC 3'	572	5' -ATC 3'	311	5' -ggA 3'	420	5' -ggA 3'	420	167	1070														
		5' -ggC 3'	572	5' -gTC 3'	572	5' -ATC 3'	311	5' -ggA 3'	420	5' -ggA 3'	420	167	1070														
		5' -ggC 3'	572	5' -gTC 3'	572	5' -ATC 3'	311	5' -ggA 3'	420	5' -ggA 3'	420	167	1070														
		5' -ggC 3'	572	5' -gTC 3'	572	5' -ATC 3'	311	5' -ggA 3'	420	5' -ggA 3'	420	167	1070														
		5' -ggC 3'	572	5' -gTC 3'	572	5' -ATC 3'	311	5' -ggA 3'	420	5' -ggA 3'	420	167	1070														
		5' -ggC 3'	572	5' -gTC 3'	572	5' -ATC 3'	311	5' -ggA 3'	420	5' -ggA 3'	420	167	1070														
		5' -ggC 3'	572	5' -gTC 3'	572	5' -ATC 3'	311	5' -ggA 3'	420	5' -ggA 3'	420	167	1070														
		5' -ggC 3'	572	5' -gTC 3'	572	5' -ATC 3'	311	5' -ggA 3'	420	5' -ggA 3'	420	167	1070														
		5' -ggC 3'	572	5' -gTC 3'	572	5' -ATC 3'	311	5' -ggA 3'	420	5' -ggA 3'	420	167	1070														
		5' -ggC 3'	572	5' -gTC 3'	572	5' -ATC 3'	311	5' -ggA 3'	420	5' -ggA 3'	420	167	1070														
		5' -ggC 3'	572	5' -gTC 3'	572	5' -ATC 3'	311	5' -ggA 3'	420	5' -ggA 3'	420	167	1070														
		5' -ggC 3'	572	5' -gTC 3'	572	5' -ATC 3'	311	5' -ggA 3'	420	5' -ggA 3'	420	167	1070														
		5' -ggC 3'	572	5' -gTC 3'	572	5' -ATC 3'	311	5' -ggA 3'	420	5' -ggA 3'	420	167	1070														
		5' -ggC 3'	572	5' -gTC 3'	572	5' -ATC 3'	311	5' -ggA 3'	420	5' -ggA 3'	420	167	1070														
		5' -ggC 3'	572	5' -gTC 3'	572	5' -ATC 3'	311	5' -ggA 3'	420	5' -ggA 3'	420	167	1070														
		5' -ggC 3'	572	5' -gTC 3'	572	5' -ATC 3'	311	5' -ggA 3'	420	5' -ggA 3'	420	167	1070														
		5' -ggC 3'	572	5' -gTC 3'	572	5' -ATC 3'	311	5' -ggA 3'	420	5' -ggA 3'	420	167	1070														
		5' -ggC 3'	572	5' -gTC 3'	572	5' -ATC 3'	311	5' -ggA 3'	420	5' -ggA 3'	420	167	1070														
		5' -ggC 3'	572	5' -gTC 3'	572	5' -ATC 3'	311	5' -ggA 3'	420	5' -ggA 3'	420	167	1070														
		5' -ggC 3'	572	5' -gTC 3'	572	5' -ATC 3'	311	5' -ggA 3'	420	5' -ggA 3'	420	167	1070														
		5' -ggC 3'	572	5' -gTC 3'	572	5' -ATC 3'	311	5' -ggA 3'	420																		

INTERPRETATION TABLE																									
HLA-B low resolution SSP																									
Amplification patterns of the B*0702 to B*8301 alleles⁶																									
Well																									
49	50	51	52	53	54	55	56	57	58	59	60	61	62	63	64	65	66	67	68	69	70	71	72		
175	130	105	325	115	215	130	90	90	145	120	430	145	300	160	180	180	90	90	95	115	360	350	290		
																									Length of spec. PCR product(s)
																									Length of int. pos. control¹
																									5'-primer(s)²
																									3'-primer(s)³
																									Well No.

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Well No.		25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48
HLA-B allele ⁴	ser. ⁵																								
*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																							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																						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
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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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					*130101, 130102, 1317, 1320, 132201-1323, 1325	
																					62					*130201-130205, 1308Q, 1315, 1318, 1319	
																					62					*1303	
																					65					*1304, 1310	
																					62					*1306	
																					64					Null	*1307N
																					62					-	*1309
																					62					-	*1310
																					67					-	*1311
																					62					-	*1312, 1313
																					62					-	*1314
																					59					-	*1316
																					62					-	*1321
																					62					-	*1326
																										B64	*1401, 1407N
																										B65	*140201-1404, 1409
																										-	*1405-140602
																										-	*1408, 3925N, 3930, 3932-3934, 3947, 3950
																										-	*1410
																					55						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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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	
*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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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.		
																				70		-			*1523		
																				69	70		B62		*1524, 1587, 9557		
																				69	71		B15		*1528, 9520, 9549N		
																					71		B15			*1529	
																				69	71		B62,		*1530, 1558, 1563		
																					71		B75			*1531	
																						-				*1536	
																				70		71				*1542	
																				69	70					*1543	
																				69	71		B62		*1545		
																				69	71		B72		*1546		
																					71		B62			*1548, 9550	
																				69	71					*1553	
																				69	71					*1554	
																					71						*1555
																				69	71					*1557	
																				62						*1562	
																				62						*1564	
																				62						*1566	
																				62						*1568	
																				62						*1569	
																				62						*1573	
																				62						*1574	
52																				62						*1576	
																				62						*1577	
																				62						*1580	
																				62						*1583	
																				62						*1585, 9554	
																				62						*1586	
																				62						*1589	
																				62						*1591, 9531	
52																				62						*9501	
																				61	62					*9506	
																				62						*9515	
49																				62						*9516	
49																				62						*9524	
																				62						*9537	
																				62						*9538	
																				62						*9542	
																				61						*9543	
																				57						*9544	
																				69	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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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.	
																									*180101-1803, 1805-1808, 1810, 1811, 1813-1815, 1817N, 1818, 1820, 1821, 1823N-1825, 1827, 1828, 1830-1833, 1835	
																									-	*1804
																									-	*1809
																									-	*1812
																									-	*1819
																									-	*1822
																									-	*1826
																									-	*1829, 3532, 3537, 3553N, 3564, 356801, 356802, 3599
	52																								B27	*2701
	52			56				60	62															B27	*2702	
	52			56																						*2703-2706, 2709, 2710, 2713, 2717, 2720, 2727, 2731, 2735-2737, 2745, 2746, 2751
	52			56																					B27	
	52			56																						*2707, 2711, 2714, 2715, 2721, 2728, 2732, 2734, 2738, 2743
	52			56																					B2708	*2708, 2726, 2740, 2742, 2744
	52			56																					-	*2712
	52			56																					-	*2716, 2739
	52			56																					-	*2718
	52			56																					-	*2719
	52			56	57																				-	*2723
	52			56																					-	*2724
	52			56																					-	*2725
	52			56																					-	*2729
	52			56				60	62															-	*2730	
	52			56																					-	*2733
	52			56																					-	*2741
	52			56																					-	*2750
	52			56																					-	*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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*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						
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.	
																			68		71					*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					*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			71				-	*3521, 3524
																			68		71					-	*3522
																										-	*3525, 3549
																										-	*3526
																			68		71					B35	*3527
																			68		71					-	*3535
																			68		71					-	*3538
																										B35	*3543, 3567, 3579, 3586
																			68	69	71					-	*3544
																			68		71					-	*3545, 3571
																			53			71				-	*3546
																			57			71				-	*3547
																			61			71				-	*3556
																			64		68					-	*3560
																			61	62	68					-	*3563
																										-	*3566
																			52	56	w					-	*3576
																											Well No.

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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																				45	47	48		
*390201, 3908	B3902, B39					29									35						45		48		
*390202, 391301, 391302, 3923, 3949	B3902, B39														35						45	47	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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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.	
								55											68		71			-		*3581	
																				68		71	72		-		*3587
																								B37, Null	*370101-370103, 370105, 3703N, 3706, 3713		
																								-		*370104	
																								-		*3702	
																								-		*3704	
																								-		*3705	
																								-		*3707	
																								-		*3708	
																								-		*3709	
																								-		*3710	
																								-		*3711	
																								-		*3712	
																								-		*3714	
																								B38	*380101-380202, 3808, 3809, 3811-3816, 3818, 3819		
																								B16		*3803	
																								-		*3804	
																								-		*3805	
																								-		*3806	
																								-		*3807	
																								-		*3810	
																								-		*3817	
																								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		
																								B3902, B39		*390201, 3908	
																								B3902, B39		*390202, 391301, 391302, 3923, 3949	
																								B39		*3904	
																								-		*3907	
																								B39		*3910, 3916, 3920	
																								-		*3912, 3945	
																								-		*3917	
																								-		*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								36												?	
*4046	-									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				71		-			*3922		
																		69	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																				?	
*4058	-				28																				?	
*4059	-				28																				48	
*4060	-				28																				48	
*4068	-																								?	
*4071	-				27																				?	
*407201, 407202, 4077	-				28																				48	
*4074	-																								?	
*4076	-				28																					
*4083	-																								?	
*4093	-																								?	
*4094	-																									
*4095	-																								?	
*4096	-																									
*4098	-				25																				?	
*4101, 4106, 4107	B41				28																				48	
*410201	B41				28																				48	
*410301, 410302	B41				28																				48	
*4104	-				28																				48	
*4105	-				28																				48	
*4108	-				25	28																			48	
*4201, 4202, 4206, 4210, 4212	B42																									48
*4204	-																									48
*420501, 420502	-				25																				48	
*4208	-																									48
*4209	-																									48
*4211	-																									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	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.	
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	
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						68	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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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.
				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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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	
*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	-											35													48	
*4810, 4812, 4817	-											35													48	
*4813	-											35													48	
*4814	-											35	36												48	
*4815	-	25										35													48	
*4816	-											35													48	
*4818	-											35														
*490101	B49		28																							
*490102	-		28																							
*4902	-		28																							
*4903	-																									
*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														
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.
49								57				62									71	72	B48		*480101, 480102, 4807, 4809, 4811, 4819	
												62									71		-		*4802	
												62									71		B48		*480301, 480302	
								57				62									71		B48		*4804	
												62									71	72	B48		*4805, 4808	
								57				62									71	72	-		*4806	
												62									71	72	-		*4810, 4812, 4817	
												62									71		-		*4813	
												62									71	72	-		*4814	
								57				62									71	72	-		*4815	
								57												71	72	-		*4816		
								57				62								70	72	-		*4818		
									58	59		62		65			70				B49				*490101	
									58			62		65			70				-				*490102	
									59			62		65			70				-				*4902	
									59			62		65			70				-				*4903	
									58	59		62					70				-				*4904, 4905	
										59		61	62	65				71		B50					*5001, 5004	
										59		61	62	65				71		B45					*5002	
																									*510101, 510103, 510105-510108, 510201, 510203, 5103, 5107, 510901, 5111N, B51, 5112, 511302, 5114, B5102, 5117-5119, 5122, B5103, 5123, 5126-5130, Null 5132, 5133, 5138- 5141N, 5143, 5148, 5149, 5151-5153, 5155, 5157, 5158, 5160, 5165	
																									*510102, 510109, 510202, 5105, 510902	
																									*510104, 510204, B51, 511301, 5116, 5121, B52 512401, 512402, 5131, 5134, 5135	
																									*5104, 5146, 5156	
																									*5106, 5159	
																									*5108, 5120, 5144N	
																									*5110	
																									*5115	
																									*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		
									60							65	67	68	70		-					*5162		
					54				60							68		70			-					*5164		
																										*520101, 520103,		
									59	60	62								70		B52					5204, 5205, 5207,		
									59	60	62								70		B52					5210-5213		
					54				59	60	62								70							*520102, 520104-5203,		
									59	60	62								70							520601, 520602, 5209		
																										*5208, 5214		
												60					68		70			B53					*530101-530104, 5305,	
																	68		70						5308, 5310, 5316,			
																	68		70			B53				5318		
					55					60						68		70								*5302		
																	68		70								*5303, 5309, 5311-	
																	68		70							5313		
																	68		70								*5304, 5307	
																	54	55	60			B53					*5306	
																	68		70								*5314	
																	68		70	72							*5315	
																	60	62										*5317
				</td																								

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*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		
			52			56											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									66			70			-		*5714		
									60									66			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		
									59	60							67			70			-		*5808		
									55		60						67			70			-		*5809		
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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*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 ⁴	ser. ⁵																								
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																									
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.
																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. ⁵					HLA-B allele ⁴	
49	50	51	52	53	54	55	56	57	58	59	60	61	62	63	64	65	66	67	68	69	70	71	72			Well No.
																										Cw*0206
																										Cw*0223
																										Cw*0305, 0325, 0327
																										Cw*0620
																										Cw*0746
																										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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¹The internal positive control primer pairs amplify segments of the human growth hormone gene. The two different control primer pairs give rise to either an internal positive control band of 1070 base pairs, for most wells, or a band of 800 base pairs, for some wells. Well number 1 contains the primer pair giving rise to the shorter, 800 bp, internal positive control band in order to help in the correct orientation of the HLA-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.

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

³The nucleotide position, in the 2nd, or 3rd exon or the 1st or 3rd 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 web site. The sequence of the 3 terminal nucleotides of the primer is given.

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

The sequence of the B*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.

⁵The 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 web site and the information available at the 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)																									
Length of int. pos control ¹																									
5'-primer(s) ²																									
3'-primer(s) ³																									
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	
DRB1 allele ⁴	ser ⁵																								
*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	

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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																								
*110201-1103, 111101, 111102, 111401, 111402, 1116, 1120, 1121, 1136, 1140, 1141, 1148, 1159, 1163, 116501, 116502, 1168, 1170	11						78																		
*1105	11																								
*1107, 1153	-					77						83	85												
*110801, 110802, 1118-111902, 1142, 1157	11																								
*111301, 111302	11							w															91	92	
*1117, 1152	-																						91	92	
*1122	11																								
*1123, 1125	-																							92	
*1126, 1134	11						79																		
*1131, 1145, 1164	11																							92	
*1155	-																							92	
*1169	-																						90		
*1173	-						78																		
*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	

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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									

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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	
*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 ⁴	ser ⁵																								
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 ⁵	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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Lot-specific information

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¹The internal positive control primer pairs amplify segments of the human growth hormone gene. The two different control primer pairs give rise to either an internal positive control band of 430 base pairs, for most wells, or a band of 515 base pairs, for some wells.

Well number 73 contains the primer pair giving rise to the longer, 515 bp, internal positive control band in order to help in the correct orientation of the DR low resolution typing.

In addition, well number 82 contains the primer pair giving rise to the longer, 515 bp, internal positive control band in order to allow kit identification.

²The codon, and in parenthesis the nucleotide, in the 2nd exon, matching the specificity-determining 3'-end of the primer is given. Codon and nucleotide numbering as on the www.ebi.ac.uk/imgt/hla web site. The sequence of the 3 terminal nucleotides of the primer is given. Empty spaces indicate codon boundaries.

³The codon, and in parenthesis the nucleotide, in the 2nd exon, matching the specificity-determining 3'-end of the primer is given in the anti-sense direction. Codon and nucleotide numbering as on the www.ebi.ac.uk/imgt/hla web site. The sequence of the 3 terminal nucleotides of the primer is given. Empty spaces indicate codon boundaries.

⁴The 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.

⁵The 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 web site and the information available at the 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.

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Lot-specific information

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CELL LINE VALIDATION SHEET																		
HLA-A low resolution primer set																		
	IHWC cell line	A*	A*	Well														
				1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
1	9001 SA	*2402		-	-	-	-	+	-	+	-	-	-	-	-	-	-	-
2	9280 LK707	*0201		-	+	-	-	-	-	-	-	-	-	-	-	-	-	-
3	9011 E4181324	*0101		+	-	-	+	-	-	-	-	-	-	-	-	-	-	-
4	9275 GU373	*3001		-	-	-	-	-	-	-	-	-	-	-	-	-	+	+
5	9009 KAS011	*0101		+	-	-	+	-	-	-	-	-	-	-	-	-	-	-
6	9353 SM	*0201	*2603	-	+	-	-	-	-	+	-	-	+	-	+	-	-	-
7	9020 QBL	*2601		-	-	-	-	-	-	+	-	+	-	-	+	-	-	-
8	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

www.olerup-ssp.com

CELL LINE VALIDATION SHEET									
HLA-A low resolution primer set									
		Well							
		17	18	19	20	21	22	23	24
		200855017	200855018	200855019	200959320	200855021	200855022	200855023	200855024
	IHWC cell line	A*	A*						
1	9001 SA	*2402		-	-	-	-	-	-
2	9280 LK707	*0201		-	-	-	-	-	-
3	9011 E4181324	*0101		-	-	-	-	-	+
4	9275 GU373	*3001		-	-	-	-	-	-
5	9009 KAS011	*0101		-	-	-	-	-	+
6	9353 SM	*0201	*2603	-	-	-	-	+	-
7	9020 QBL	*2601		-	-	-	-	-	-
8	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

www.olerup-ssp.com

IFU-01 Rev. No. 02 can be downloaded from

www.olerun-ssp.com

Est Nov. 2000

Get specific information

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Lot No.: 23G

Lot-specific information

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CELL LINE VALIDATION SHEET																																
HLA-B low resolution SSP kit																																
														Well																		
														41	42	43	44	45	46	47	48	49	50	51	52	53	54	55	56			
														200963317	200959418	200959419	200963320	200959421	200959422	200959423	200959424	200959425	200963326	200963327	200959428	200963329	200959430	200959431	200963332			
IHWC cell line	B*																															
1	9001 SA	*0702												-	-	-	+	-	-	-	-	-	-	-	-	-	-	-	-			
2	9280 LK707	*5201	*7301											-	-	-	-	-	-	+	-	-	-	-	-	-	-	-				
3	9011 E4181324	*52011												-	-	-	-	-	-	-	-	-	-	-	-	-	-	-				
4	9275 GU373	*1510	*5301											+	-	+	-	-	-	-	-	-	-	-	-	-	-	-	-			
5	9009 KAS011	*3701												+	-	-	+	-	-	-	-	-	-	-	-	-	-	-	-			
6	9353 SM	*3901	*5101											-	-	-	-	+	-	+	+	-	-	-	-	-	-	-	-			
7	9020 QBL	*1801												-	+	-	-	-	-	-	-	-	-	-	-	-	-	-	-			
8	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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CELL LINE VALIDATION SHEET																	
HLA-B low resolution SSP kit																	
	Prod. No.:	Well															
		57	58	59	60	61	62	63	64	65	66	67	68	69	70	71	72
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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CELL LINE VALIDATION SHEET			Well							
			DR low resolution primer set							
			Prod. No.:	Well						
				89	90	91	92	93	94	95
IHWG cell line			DRB1							
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		-	-	-	-	-	-

CERTIFICATE OF ANALYSIS

Olerup SSP® HLA-A-B-DR SSP Combi Tray

Product number: 101.701-24/06 – including *Taq* pol.
Lot number: 23G
Expiry date: 2011-September-01
Number of tests: 24 tests – Product No. 101.701-24
6 tests – Product No. 101.701-06
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.

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

Declaration of Conformity

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

Product number: 101.701-24/06

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

**HLA-A-B-DR SSP Combi Tray
101.701-24/06 – including *Taq* polymerase**

Product Insert

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IFU-01 Rev. No. 02 can be downloaded from**

Lot No.: 23G

Lot-specific information

www.olerup-ssp.com

February 2011
Rev. No.: 02



For *In Vitro* Diagnostic Use.

**HLA-A-B-DR SSP Combi Tray
101.701-24/06 – including *Taq* polymerase**

Product Insert

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General “Instructions for Use”
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