

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

Product number:	101.708-24 – including <i>Taq</i> pol.
Lot number:	30G
Expiry date:	2011-September-01
Number of tests:	24 tests
Number of wells per test:	95 +1
Storage - pre-aliquoted primers:	dark at -20°C
- PCR Master Mix:	-20°C
- Adhesive PCR seals	RT
- Product Insert	RT

This Product Description is only valid for Lot No. 30G.

CHANGES COMPARED TO THE PREVIOUS OLERUP SSP® HLA-A-B-DR-DQ 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-DQ SSP Combi Tray lot was made (**Lot No. 10F**).

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

Well	5'-primer	3'-primer	rationale
14	Added	Added	Primer pair for the the A*3026 and 3028 alleles.
15	Modified	-	To decrease unspecific amplifications.
16	Added	Added	Primer pair for the the A*0343 allele.
17	.	Added	Primer for the the A*3321 allele.
19	Added	-	Primer for the 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-DQ SSP Combi Tray lot was made (**Lot No. 10F**).

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

Well	5'-primer	3'-primer	rationale
22	-	Exchanged	To decrease primer dimer formation.
26	-	-	Exchanged positive control primer pair.
30	-	-	Exchanged positive control primer pair.
37	-	-	Exchanged positive control primer pair.
40	Exchanged	Exchanged	To decrease primer dimer formation.
46	-	Modified	To decrease primer dimer formation.
52	Added	-	Primer added for the the B*59xx alleles.

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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-DQ SSP Combi Tray lot was made (**Lot No. 10F**).

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

Well	5'-primer	3'-primer	rationale
83	-	-	Exchanged positive control primer pair.
85	-	Exchanged	Improved resolution of the DRB3 alleles.
87	-	Exchanged	Improved resolution of DRB5 alleles.

The **DQ low resolution** specificity and interpretation tables have been updated for the HLA-DQB1 alleles described since the previous *Olerup* SSP® HLA-A-B-DR-DQ SSP Combi Tray lot was made (**Lot No. 10F**).

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

Well	5'-primer	3'-primer	rationale
94	Added	-	Primers added for the DQB1*0323 and 0325 alleles.

Change in revision R01 compared to R00:

1. The HLA-Cw*0312 and 0319 alleles are amplified in primer mix 59.

Changes in revision R02 compared to R01:

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

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Lot-specific Information

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

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

Length of PCR product	105	200	105	80	75	80
5'-primer¹	164	340	440	45	45	43
	5'-CAC ^{3'}	5'-Agg ^{3'}	5'-TTA ^{3'}	5'-Tg g ^{3'}	5'-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 codon numbering as on the www.ebi.ac.uk/imgt/hla web site. The sequence of the 3 terminal nucleotides of the primer is given.

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

PRODUCT DESCRIPTION

HLA-A-B-DR-DQ 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.

The primer set contains 5'- and 3'-primers for grouping the DQB1 alleles into the serological groups DQ2 to DQ9.

Please note that DQB1 amplifications usually are somewhat less pronounced than e.g. DRB and DQA1 amplifications even when using the same DNA preparation and exactly the same experimental procedures.

PLATE LAYOUT

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

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

Wells 1 to 21 – HLA-A low resolution primers.

Wells 22 to 64 – HLA-B low resolution primers.

Wells 65 to 87 – HLA-DR low resolution primers.

Wells 88 to 95 – HLA-DQ low resolution primers.

Well 96 – Negative Control.

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

Well No. 1 is marked with the Lot No. '30G'.

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

INTERPRETATION

Only HLA-A alleles will be amplified by the 21 wells of the HLA-A low resolution primer set, **wells 1 to 21**, except that primer mix 5 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 43 wells of the HLA-B low resolution, primer set, **wells 22 to 64**, except that the HLA-Cw*0305, 0325 and 0327 alleles will be amplified by primer mix 24, the Cw*0746 allele will be amplified by primer mix 29, the Cw*0206 allele will be weakly amplified by primer mix 31, the Cw*150204 allele will be amplified by primer mix 58 and the Cw*0620 allele will be amplified by primer mix 62. Thus, the interpretation of HLA-B low resolution typings is only influenced by these six 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 65 to 87**. Thus, the interpretation of DR low resolution typings is not influenced by other HLA class II genes.

Only the DQB1 alleles will be amplified by the 8 wells the DQ low resolution primer set, **wells 88 to 95**. Thus, the interpretation of DQ low resolution typings is not influenced the DQB2 and DQB3 genes.

UNIQUELY IDENTIFIED ALLELES

All the HLA-A alleles, i.e. **A*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 21**. The HLA-A alleles will be grouped into their corresponding serological specificities².

All the HLA-B alleles², 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 22 to 64**. The HLA-B alleles will be grouped into their corresponding serological specificities³.

All the HLA-DRB1, -DRB3, -DRB4⁴ and -DRB5 alleles, i.e. **DRB1*010101 to 1003, DRB3*010101 to DRB3*0303, DRB4*010101 to DRB4*0107, DRB5*010101 to DRB5*0205**, recognized by the HLA Nomenclature Committee in July 2009¹ will be amplified by the primers in the DR low resolution primer set, **wells 65 to 87**. The HLA-DRB alleles will be grouped into their corresponding serological specificities⁵.

All the DQB1 alleles, i.e. **DQB1*050101 to 0505, DQB1*060101 to 0634, DQB1*020101 to 0205, DQB1*030101 to 0321 and DQB1*0401 to 0403**, recognized by the HLA Nomenclature Committee in July 2009¹ will be amplified by the primers in the DQ low resolution primer set. The DQB1 alleles will be grouped into their corresponding serological specificities, i.e.:

DQ5(1) = DQB1*050101-0505⁶
DQ6(1) = DQB1*060101-0635⁶
DQ2 = DQB1*020101-0205
DQ3 = DQB1*030101-0325⁶
DQ7(3) = DQB1*030101-030103, DQB1*0304
DQ8(3) = DQB1*030201, DQB1*030501, DQB1*0310
DQ9(3) = DQB1*030302
DQ4 = DQB1*0401-0403⁶

¹HLA-A, HLA-B, HLA-DRB and HLA-DQB1 alleles listed on the IMGT/HLA web page 2009-July-17, release 2.26.0, www.ebi.ac.uk/imgt/hla.

²The A*36 alleles will give rise to identical amplification patterns as some A*01 alleles. These alleles can be separated by the A*01 and A*36 high resolution SSP primer sets.

The A*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.

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, 3943, 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*350901-350902, 3518, 3531, 3532, 3537, 3553N, 3564, 356801-356802, 3575, 3588 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*550201-550203, 5507, 5510, 5512, 5516, 5519, 5526, 5530 and B*5610 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*5523, B*5527, B*5532 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*5716, B*580101-580102, 5804, 5805, 5810N-5815, 5819 and 5821 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.

⁶The serological split of the DQB1*0505, DQB1*0606 to 0608 alleles, the DQB1*0610 to 0635, the DQB1*030202-030204, DQB1*030303, DQB1*030502 to 0325 and the DQB1*0403 alleles is not known. In this table we have inferred the serological grouping from the naming of the sequence-defined allele.

SPECIFICITY TABLE

HLA-A low resolution primer set

Specificities and sizes of the PCR products of the 21 primer mixes used for HLA-A low resolution SSP typing

Primer Mix	Size of spec. PCR product ¹	Size of control band ²	HLA-A serology ³	Amplified HLA-A alleles ^{4,9,10}
1⁵	120, 145 bp	800 bp	A1, A36	*01010101-0104N, 0106-0135, 0137, 3601-3604
2⁶	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
3¹¹	205, 235 bp	1070 bp	A1, A3, A11, 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	165, 200 bp	800 bp	A2, A23, A24, A29, A80	*9222, 230101-2321, 2405, 241302, 2424, 2907, 8001, B*1827
6⁷	175, 205 bp	1070 bp	A2, A23, A24, A26, A33	*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
7	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
8⁵	75 bp	800 bp	A25, A32	*250101-2508, 320101-3202, 3204, 3206-3219N
9^{5,7,9}	85 bp	1070 bp	A2, A26,	*9246, 260101-2602, 2604,

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			A33	260701-2618, 2620, 2622-2629, 2632-2638, 2640, 3313
10^{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
11	185 bp	800 bp	A11, A25, A26, A31, A34, A43, A66	*1111, 2506, 2609, 3103, 3104, 340101-3408, 4301, 6602, 6603
12	175, 225 bp	1070 bp	A1, A2, A3, A25, A26, A34, A43, A66	*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
13	200, 240 bp	1070 bp	A29, A33	*29010101-2919, 3313
14⁵	90, 135, 205 bp	1070 bp	A1, A30	*0113, 0128, 0343, 300101-3004, 3006-3020, 3022-3028
15	370, 395 bp	1070 bp	A31, A32	*2914, 310102-3125, 3205
16	150, 180 bp	1070 bp	A29, A32	*0343, 2913, 320101-3203, 3205-3219N
17	200 bp	1070 bp	A33, A68	*330101, 330301-3325, 6829
18	160, 200 bp	800 bp	A74	*2919, 7401-7414N
19	155, 200, 240 bp	800 bp	A2, A210, 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
20	240, 375 bp	800 bp	A2, A24, A26, A68, A69	*0255, 2482, 2622, 3322, 6609, 6829, 6901
21^{5,7}	75, 160 bp	800 bp	A2, A26, A68, A80	*0255, 2603, 2605, 2606, 2621, 2630, 3324, 6805, 6815, 6820, 8001

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Lot-specific Information

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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 HLA-A low resolution SSP typings.

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

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

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

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

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

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

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

In addition, wells number 4, 5, 7, 8, 11, 18 to 21 contain the primer pair giving rise to the shorter, 800 bp, internal positive control band in order to allow kit identification.

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

³ The serological reactivity of all HLA-A alleles is not known. 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.

⁴ For 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.

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

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

⁷ Primer mixes 6, 9, 10 and 21 may yield less specific PCR product than the other primer mixes.

⁸ The primer pairs in vial 10 will in most samples give rise to two to three specific PCR fragments.

⁹ The A*36 alleles will give rise to identical amplification patterns as a number of A*01 alleles. These alleles can be separated by the A*01 and A*36 high resolution SSP primer sets.

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.

¹⁰ Primer mix 5 will amplify the B*1827 allele.

¹¹ Primer mix 3 may faintly amplify the A*30:04, 30:06, 30:17 and 30:29 alleles.

'w', might be weakly amplified.

SPECIFICITY TABLE

HLA-B low resolution primer set

Specificities and sizes of the PCR products of the 43 primer mixes used for HLA-B low resolution SSP typing

Primer Mix	Size of spec. PCR product ¹	Size of control band ²	HLA-B serol. ³	Amplified HLA-B alleles ^{4,5}
22¹¹	290 bp	800 bp	7, 15, 37, 40, 41, 42, 48	*070201-070207, 070209-0706, 0708-071802, 0720-0732, 0734-0739, 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
23	215 bp	1070 bp	8, 15, 44	*080101-0825, 0827-0838, 0840, 9542, 4449
24	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, 0325, 0327
25⁷	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
26⁸	185, 235 bp	800 bp	14, 16, 27, 37, 38, 39,	*1401, 1407N, 1408, 1410, 2701-2706, 2708-2710, 2712, 2713, 2716-2718, 2720, 2723, 2726, 2727, 2729, 2731,

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			47, 64, 67	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
27⁸	185 bp	800 bp	14, 35, 38, 39, 65	*140201-140602, 1409, 3526, 3805, 3904, 3907 [?]
28	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
29	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
30^{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, 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
31^{9,10}	180, 395	800 bp	13, 15, 40,	*130101-130205, 1307N-1309, 1311,

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	bp		55, 62, 70, 71, 72, 75	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
32⁶	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
33	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
34⁶	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
35⁶	115 bp	1070 bp	18	*180101-1815, 1817N-1828, 1830-1833, 1835
36⁶	80 bp	1070 bp	27, 40, 44	*2701-2721, 2723-2746, 2750, 2751, 4046, 4093, 4440, 4444
37	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

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38	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, 3564-3572, 3574- 3595, 3597, 3599, 3711, 391901, 391902, 5606, 7801-7805
39	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
40	210 bp	800 bp	7, 8, 15, 18, 37, 38	*0727, 370101-3714, 3817
41	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
42⁶	110 bp	1070 bp	38	*380101-3803, 3805, 3808-3819
43	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
44	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
45¹³	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,

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				4079, 4081, 4084, 4087, 4088, 4092, 4431, 4606, 480301, 480302
46⁶	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
47	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
48^{6,14}	115, 195, 225, 260 bp	1070 bp	35, 37, 44, 47, 51, 57	*3538, 3545, 3571, 370101-370105, 3703N-3706, 3708, 3710-3714, 44020101-440205, 440208-4414, 4416, 4417, 4419N-4436, 4438-4463, 4465-4467, 4469, 5142, 5707, 5709, 8301
49	130, 270 bp	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
50⁶	90, 410 bp	1070 bp	7, 27, 35, 47, 54, 55, 56, 81	*0765, 2702-2711, 2713-2715, 2717, 2719-2721, 2724-2728, 2730-2738, 2740-2746, 2750-2752, 3576, 47010101-4703, 5401-5419, 550101-5505, 5507-5517, 5519-5535, 5601-5616, 5618-5622, 5624, 8101, 8201, 8202, 8301
51⁶	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
52	145, 430 bp	1070 bp	40, 44, 49	*4013, 4019, 4418, 4425, 4450, 490101, 490102, 4904, 4905, 5412, 5621, 5901-5905
53⁶	120, 210 bp	800 bp	13, 15, 45, 49, 50, 51,	*1316, 1504 ^w , 1516, 1542, 1567, 1595, 9537 ^w , 4095, 490101, 4902-4905, 5001,

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			52, 55, 56, 58, 62, 63, 78	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
54	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
55	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
56	300 bp	1070 bp	7, 8, 13, 15, 18, 27, 35, 37, 38, 39, 40, 41, 44, 45, 46, 47, 48, 49, 50, 52, 55, 57, 58, 62, 72, 76, 78	*0754, 0817, 0838, 130101-1304, 1306, 1308Q-1323, 1325, 1326, 15010101- 150104, 150106-150108, 150301-1507, 1512, 1514, 1519, 1520, 1524-152703, 1530, 1532-1536, 1538-1540, 1542, 1543, 1545-1550, 1553, 1554, 1556- 1558, 1560-1563, 1565, 1566, 1568- 1571, 1573-1575, 1577-1579N, 1581- 1587, 1591, 1592, 1594N, 1596-1598, 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,

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57	160, 215 bp	1070 bp	15, 37, 44, 54	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
58	180, 210 bp	1070 bp	7, 13, 15, 18, 35, 39, 40, 45, 54, 55, 56, 59, 78	*0765, 1306, 1542, 1586, 1804, 3560, 3917, 4058, 4508, 4618, 5401, 5402, 5405N, 5407, 5408N, 5410, 5412, 5413, 5416-5419, 550101-5503, 5505, 5507, 5510-5512, 5515, 5516, 5518, 5519, 5521, 5525, 5526, 5529-5531, 5533-5535, 560501, 5606, 5610, 5623, 5901, 5905, 7801, 780202, 7803, Cw*150204
59	180 bp	1070 bp	13, 15, 40, 44, 45, 46, 49, 50, 51, 54, 56	*1303, 1573, 4071, 4410, 4415, 4418, 4501, 4504-4507, 4611, 490101-4903, 5001, 5002, 5004, 5115, 5162, 5403, 5601, 5602, 5604, 5607, 5608, 5613, 5614, 5616, 5617, 5620, 5624, 5904, 8201, 8202, Cw*0312, Cw*0319
60^{6,11}	90, 240 bp	800 bp	55, 57	*5514, 570101-5715, 5717-5719
61^{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
62⁶	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
63	360 bp	1070 bp	Bw4 ¹⁵	
64	350 bp	1070 bp	Bw6	

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

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

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

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

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

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

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

Well number 22 contains the primer pair giving rise to the shorter, 800 bp, internal positive control band in order to help in the correct orientation of the HLA-B low resolution typing.

In addition, wells number 26, 27, 31, 37, 40, 41, 53 and 60 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, 3943, 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*350901-350902, 3518, 3531, 3532, 3537, 3553N, 3564, 356801-356802, 3575, 3588 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*550201-550203, 5507, 5510, 5512, 5516, 5519, 5526, 5530 and B*5610 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*5523, B*5527, B*5532 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*5716, B*580101-580102, 5804, 5805, 5810N-5815, 5819 and 5821 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 24 will amplify the Cw*0305, Cw*0325 and Cw*0327 alleles, primer mix 29 will amplify the Cw*0746 allele, primer mix 58 will amplify the Cw*150204 allele, primer mix 59 will amplify the Cw*0312 and Cw*0319 alleles and primer mix 62 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 25 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 26, 27 and 61 may yield less specific PCR product than the other HLA-B low resolution primer mixes.

⁹Primer mixes 30 and 31 have a higher tendency than other primer mixes to give rise to nonspecific amplifications.

¹⁰In primer mix 31, the positive control band may be weaker than for other HLA-B low primer mixes.

¹¹Primer mixes 22 and 60 may give rise to a primer oligomer artifact.

¹²The B*57 and B*58 alleles might be faintly amplified by primer mix 30.

¹³The Cw*1701 to Cw*1704 alleles might be faintly amplified by primer mix 45.

¹⁴Primer mix 48 might generate a false band of about 500 base pairs. This band should be disregarded when interpreting HLA-B low resolution typings.

¹⁵The Bw4-associated HLA-A specificities A23, A24, A2403, A25 and A32 are not amplified by the primer pair in primer mix 63.

'w', might be weakly amplified.

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

SPECIFICITY TABLE

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

Primer Mix	Size of spec. PCR product ¹	Size of control band ²	DR serology ³	Amplified HLA-DRB alleles ⁴
65 ⁷	205 bp	515 bp	1	*010101-010205, 0104-0122
66	200 bp	430 bp	103	*0103
67 ⁶	215, 260 bp	430 bp	15	*15010101-1533
68	210 bp	430 bp	16	*160101-160502, 1607-1613N
69 ⁵	120, 220 bp	430 bp	3, 17, 18, 11	*03010101-0343, 1107, 1153, 1525
70 ^{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
71 ^{5,6}	85, 210 bp	430 bp	3, 18, 11, 13, 14	*030201-0303, 0327, 0329, 0338, 1113 ^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
72 ^{5,6}	100, 175 bp	430 bp	4	*040101-0478
73 ⁶	205, 230 bp	430 bp	7, 13, 14	*07010101-070103, 0703-0717, 1317, 1450
74 ⁶	170, 215, 250 bp	515 bp	8, 12, 14	*080101-0819, 0821-0836, 1167, 1204, 1216, 1411, 1415,

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				1468
75^{5,6}	85, 135, 180 bp	430 bp	3, 9, 11	*0308, 090102-0908, 1107, 1153
76	205 bp	430 bp	10	*100101-1003
77⁵	100, 170 bp	430 bp	11, 3, 8	*0308, 0831, 110101-1170, 1172, 1173
78⁵	85, 105 bp	430 bp	12, 8	*0832, 120101-1219
79	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
80⁶	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
81	175 bp	430 bp	3, 13, 14, 8	*03010101-0307, 0309, 0311- 0341, 0343, 0820, 130101- 1316, 1318-1342, 1344, 1346- 1366, 1368-1388, 1402- 140302, 140501-1406, 1409,

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				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
82⁵⁻⁷	100, 140 bp	430 bp	14, 4, 8,13	*0462, 0469, 0473, 0808, 1169, 1345, 140101, 140102, 1404, 140701, 140702, 1410, 1416, 1422, 1425, 1426, 1428, 1431-143202, 1435, 1437-1439, 1449, 1450, 1453-1455, 1457, 1458, 1460-1462, 1468-1471, 1473-1476, 1479, 1482, 1486
83^{5,6,8}	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
84⁵⁻⁷	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
85	165, 240 bp	430 bp	52	DRB3*01010201-0113, DRB3*0201-0224, DRB3*030101-0303
86⁹	215 bp	430 bp	53	DRB4*01010101-0107
87	175 bp	430 bp	51	DRB5*010101-0113, DRB5*0202-0205

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Lot-specific Information

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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 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 67, 72, 82, 83 and 84.

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

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

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

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

Well number 65 contains the primer pair giving rise to the longer, 515 bp, internal positive control band in order to help in the correct orientation of the DR low resolution typing.

In addition, well number 74 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 rise to two differently sized specific PCR fragments in these primer mixes.

⁷Primer mixes 65, 82 and 84 may give rise to primer oligomer formation.

⁸Primer mix 83 has a tendency of primer oligomer formation and also has an intense primer cloud due to the high number of primers present in the primer mix.

⁹The DRB4*01030102N allele is amplified by the primer pair in well No. 86, whereas the DRB4*0201N and DRB4*0301N null alleles are not amplified by this primer pair.

‘w’, might be weakly amplified.

SPECIFICITY TABLE

DQ low resolution SSP typing

Specificities and sizes of the PCR products of the 8 primer mixes used for DQ low resolution SSP typing

Primer Mix	Size of spec. PCR product ¹	Size of control band ²	DQ serology ³	Amplified DQB1 alleles ⁴
88	225 bp	515 bp	5	*050101-0505
89	220, 270 bp	430 bp	6	*060101-0635
90	210 bp	430 bp	2	*020101-0205
91	135, 150 bp	515 bp	2, 3, 6, 8	*020101-0202, 0204, 0205, 030201-030204, 030501, 030503, 0307, 0308, 0311, 0318, 0629
92	220 bp	515 bp	3, 7, 8	*030101-030104, 0304, 0309, 0310, 0313, 0314, 0316, 0319, 0321, 0322, 0324
93⁵	220 bp	515 bp	2, 3, 4, 8, 9	*020101-0205, 030201-030303, 0306-0308, 0311, 0312, 0315, 0318, 0320, 0323, 0325, 0403
94^{5,6}	145, 185 bp	515 bp	3, 7, 8, 9	*030101-0325
95	210 bp	430 bp	4	*040101-0403

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

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

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

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

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

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.

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Well number 88 contains the primer pair giving rise to the longer, 515 bp, internal positive control band in order to help in the correct orientation of the DQ low resolution typing.

In addition, wells number 91, 92, 93 and 94 contain the primer pair giving rise to the longer, 515 bp, internal positive control band in order to allow kit identification.

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

³The serological reactivity of the DQB1*0505, DQB1*0606 to 0608 alleles, the DQB1*0610 to 0633, the DQB1*030202-030204, DQB1*030303, DQB1*030502 to 0321 and the DQB1*0403 alleles is not known. In this table we have inferred the serological grouping from the naming of the sequence-defined allele.

⁴For several DQB1 alleles only partial second exon nucleotide sequences are available. In these instances it is not known whether some of the primers of the SSP sets are completely matched with the target sequences or not. We assume that unknown sequences in the 5'- and 3'-ends of the second exon of the DQB1 gene are conserved within allelic groups.

⁵This primer mix may give rise to primer dimer formation

⁶This primer mix may yield somewhat less intense specific PCR fragments than the other DQ low resolution primer mixes.

INTERPRETATION TABLE																							
HLA-A low resolution SSP typing																							
Amplification patterns of the A*0101 to A*8001 alleles																							
		Well⁶																					
		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	
Length of spec. PCR product(s)		120	135	205	190	165	175	165	75	85	80	185	175	200	90	370	150	200	160	155	240	75	
		145	200	235		200	200	200			175		225	240	135	395	180		200	200	375	160	
			255								500				205					240			
Length of int.		800	1070	1070	800	800	1070	800	800	1070	1070	800	1070	1070	1070	1070	1070	1070	800	800	800	800	
pos. control¹																							
5'-primer(s)²		98	78	363	98	106	98	98	266	257	302	103	98	98	203	41	180	98	180	78	28	176	
		5'-CTT	5'-TCT	5'-ATP	5'-CTP	5'-CCP	5'-CTC	5'-CTP	5'-ACg	5'-Cgg	5'-ggA	5'-CCT	5'-CTT	5'-CAC	5'-gAA	5'-CTT	5'-TTT	5'-CAC	5'-TTT	5'-TCT	5'-TCg	5'-gCA	
		123	106		413	176	368	102	266	261	385	423	423		362		418			106	261	261	
		5'-AgT	5'-CCA		5'-CCg	5'-gCA	5'-gTT	5'-ACA	5'-ACg	5'-AAC	5'-ggC	5'-gCT	5'-gCT		5'-ggT		5'-AgC			5'-CCA	5'-AAC	5'-AAC	
			144			368		413							363					391			
			5'-gCA			5'-gTT		5'-CCg							5'-ATP					5'-ACg			
			144																	391			
			5'-TCP																	5'-ACg			
3'-primer(s)³		203	240	527	256	256	259	259	302	299	341	257	282	257	299	238	317	256	299	265	97	292	
		5'-TCT	5'-ggA	5'-CCP	5'-CTg	5'-CCC	5'-gTT	5'-gTT	5'-ggC	5'-TCg	5'-CgT	5'-gCA	5'-gAC	5'-gCA	5'-CCP	5'-CCT	5'-ggA	5'-CCC	5'-CCP	5'-CCC	5'-ggT	5'-gTg	
			292	527	559	292	502	538			521	559	282	299	411	265	527	256	299	282	355	292	
			5'-gTg	5'-CCT	5'-CCg	5'-gTT	5'-CTT	5'-CCP			5'-ggg	5'-CTC	5'-gAC	5'-TCg	5'-TCP	5'-CCC	5'-CCT	5'-CTC	5'-CCP	5'-gAC	5'-gAC	5'-gTT	
				555		502	539				559	559			526			259	341	282		299	
			5'-gCA			5'-CTg	5'-TCT				5'-CgT	5'-CCg			5'-CCP			5'-gTT	5'-CgT	5'-gAC		5'-TCT	
			555			538														506			
			5'-CCA			5'-CAg														5'-TgT			
Well No.		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	
HLA-A allele⁴	ser⁵																						
*01010101-0104N, 0106, 0107, 0109-0111N, 0116N-0118N, 0120, 0122N-0127N, 0129, 0131N-0135,	A1, null	1			4																		
*0108, 0114, 0115N, 0130	1	1																					
*0112, 0119	-	1		3																			
*0113	-	1			4						10	12			14								
Well No.		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	

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Well No.		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21
*0121		1		3	4																	
*0128		1			4						10				14							
*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	A2, A203, null			2																		
*0210, 0239, 0246, 0250, 0252, 0270, 0273, 0293, 0295, 9210, 9214, 9217, 9256	A210		2																		19	
*021701, 021702	A2		2				w															
*0234, 023501, 023503, 025601, 025602, 0262, 9203	-		2										12								19	
*023502	-												12								19	
*0248, 2494, 9229	-																				19	
*0255	-		2					7													20	21
*0278	-		2		4																19	
*9222	-					5															19	
*9235	-		2										12									
*9246	-		2								9											
*9269	-		2		4																	
*03010101-0307, 0309-0311N, 0313-0317, 0319-0323, 0325-0331, 0333-0335, 0337-0340, 0342, 0344-0347, 0351, 0355	A3			3									12									
*0308, 0332, 0336N, 0341, 2492 ⁷	-			3																		
*0312	-			3	4																	
*0318, 2619 ⁸	-				4								12									
*0324, 0350	-			3				7					12									
*0343	-			3									12		14		16					
*110101-1109, 1112-112402, 1126, 1127, 1129-	A11				4								10									
*1110					4			7					10									
Well No.		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21

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Well No.		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21
*1111					4						10	11										
*1125	-			3	4						10											
*230101-2313, 2315-2321, B*1827	A23					5																
*2314, 2405, 241302, 2424 ⁹	-					5	6															
*24020101-240217, 240220- 2404, 2406-2411N, 241301, 2417, 2418, 2420-2423, 2425-2443, 2445N-2450, 2454-2456, 2458-2463, 2466-2481, 2483N-2491, 2493, 2495-2499	A24						6															
*2419, 2444	A24						6				10											
*2482	-						6														20	
*250101-2504, 2507, 2508	A25							7	8				12									
*2505	-							7	8				12								19	
*2506	-							7	8			11										
*260101-260108, 2608, 2610-2615, 2617, 2618, 2620, 2623-2629, 2632, 2633, 2635-2638, 2640	A26, null							7		9			12									
*2602	A26							7		9			w									
*2603, 2606, 2621	A26							7			10		12									21
*2604, 2634	A26							7		9												
*2605, 2630	A26							7					12									21
*260701, 260702	A26									9			12									
*2609	A26							7		9	11											
*2616	-						6			9			12									
*2622	-							7		9			12									20
*2631	-							7					12									
*29010101-2906, 2908N- 2912, 2915-2918	A29													13								
*2907	-					5								13								
*2913	-													13			16					
*2914	-													13		15						
*2919														13						18		
*300101-3004, 3006, 3007, 3009-3020, 3022-3028	A30														14							
*3008	-				4										14							
*310102-3102, 3105-3125	A31															15						
*3103	-										10	11				15						
*3104	A31											11				15						
*320101-3202, 3206-3214, 3216-3219N	A32								8								16					
*3203	-																16					
*3204	A3			3					8													
Well No.		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21

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Well No.		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21
*3205	-															15	16					
*3215	-							7	8								16					
*330101, 330301-3312, 3314-3318, 3320, 3321, 3323, 3325	A33																	17				
*3313	-									9				13				17				
*3319	-					6												17				
*3322																		17			20	
*3324																		17				21
*340101, 340102, 3405, *3402-3404, 3407	A34							7			10	11										
*3408	-			3				7			10	11										
*3408	-			3				7			10	11	12									
*3601, 3603 ¹⁰	A36	1																				
*3602	-	1		3																		
*3604	-	1			4																	
*4301	A43											11	12									
*6601, 6604-6608, 6610	A66							7			10		12									
*6602, 6603	A66							7				11										
*6609	-							7			10		12									20
*680101-6804, 6806-6814, 6816-6819, 6821-6828, 6830-6844, 6846-6848	A68							7													19	
*6805, 6815, 6820	-							7													19	21
*6829	-							7										17			19	20
*6845	-						6	7													19	
*6901	A69							7														20
*7401-7412N, 7414N	A74																				18	
*7413	-												12								18	
*8001	A80					5																21
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

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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 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, 7, 8, 11, 18 to 21 contain the primer pair giving rise to the shorter, 800 bp, internal positive control band in order to allow kit identification.

²The nucleotide position, in the 1st, 2nd or 3rd exon, 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 10 will in most samples give rise to two specific PCR fragments.

⁷The 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.

⁸The 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.

⁹The 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.

¹⁰The A*36 alleles will give rise to identical amplification patterns as a number of A*01 alleles. These alleles can be separated by the A*01 and A*36 high resolution SSP primer sets.

'w', may be weakly amplified.

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INTERPRETATION TABLE																					
HLA-B low resolution SSP																					
Amplification patterns of the B*0702 to B*8301 alleles ⁶																					
		Well																			
		22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41
Length of spec. PCR product(s)		290	215	140	130	185	185	290	165	165	180	105	195	105	115	80	150	135	245	210	170
				235	265	235			220	390	395	195		435					400		
									330												
Length of int. pos. control¹		800	1070	1070	1070	800	800	1070	1070	1070	800	1070	1070	1070	1070	1070	800	1070	1070	800	800
5'-primer(s)²		355	97	209	103	103	103	45	45	45	45	206	142	45	161	167	355	206	45	142	409
		5'-TCA	5'-TCg	5'-ggC	5'-CCg	5'-CCT	5'-CCg	5'-ggA	5'-ggA	5'-ggA	5'-ggA	5'-AgA	5'-TCT	5'-ggA	5'-Cgg	5'-gCT	5'-TCf	5'-gAC	5'-ggA	5'-TCT	5'-ggC
		363		363	103	363			357	435	420	420	419	540					368	368	420
		5'-AgC		5'-AgC	5'-CCg	5'-AAT			5'-Tgg	5'-AAf	5'-TTA	5'-TTA	5'-gTC	5'-gAC					5'-gTT	5'-gTC	5'-TTA
				363	361				412												
				5'-AgC	5'-AgT				5'-ATf												
3'-primer(s)³		603	272	309	193	246	246	165	206	266	272	272	301	309	234	204	463	302	259	311	544
		5'-gTg	5'-Tgg	5'-gTg	5'-CgT	5'-TAT	5'-TAT	5'-Tgg	5'-CCT	5'-TCC	5'-TgC	5'-Tgg	5'-gTC	5'-ATC	5'-TCT	5'-TCT	5'-gCT	5'-ggC	5'-gTT	5'-ggg	5'-ggT
		605	272	559	193	246			538	559	559	572	301	605					266	311	
		5'-gCT	5'-TgA	5'-CAg	5'-CgT	5'-TAT			5'-gTC	5'-CAg	5'-CTC	5'-gCg	5'-gTC	5'-gCT					5'-TCC	5'-ggg	
					583	559							570						272	538	
					5'-CTC	5'-CTC							572						5'-Tgg	5'-gTC	
													572						292		
												572							572		
												572							572		
												572							572		
Well No.		22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41

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INTERPRETATION TABLE

HLA-B low resolution SSP

Amplification patterns of the B*0702 to B*8301 alleles⁶

Well																								
42	43	44	45	46	47	48	49	50	51	52	53	54	55	56	57	58	59	60	61	62	63	64		
110	395	425	175	105	325	115	130	90	90	145	120	430	145	300	160	180	180	90	95	115	360	350		
						195	270	410	175	430	210				215	210				160				
						225																		
						260																		
1070	1070	1070	1070	1070	1070	1070	1070	1070	1070	1070	800	1070	1070	1070	1070	1070	1070	1070	1070	1070	1070	1070		
246	44	44	363	540	1st	355	209	41	209	48	357	49	206	1st	1st	141	420	209	206	165	1st	1st		
5'-gAA	5'-ggC	5'-ggC	5'-Agg	5'-gAC	5'-CAG	5'-TC#	5'-ggC	5'-CTg	5'-ggC	5'-gCC	5'-Tgg	5'-CAG	5'-gAA	5'-CAG	5'-CAG	5'-ATT	5'-TTA	5'-ggC	5'-gAC	5'-ACC	5'-CAG	5'-CAG		
						418	209	368	363	206					418	420		362		463				
						5'-Agg	5'-ggg	5'-gTT	5'-AgC	5'-gAA					5'-Agg	5'-TTA		5'-ggT		5'-TgA				
						499	355																	
						5'-TCT	5'-TC#																	
						5'-TCT	5'-TC#																	
317	272	302	499	603	282	538	299	282	259	309	435	309	311	259	175	311	559	256	259	272	317	311		
5'-ggA	5'-TgC	5'-ggT	5'-ggA	5'-gTg	5'-gCC	5'-gTC	5'-TC#	5'-gCC	5'-gTT	5'-ATC	5'-TCT	5'-ATC	5'-ggT	5'-CTC	5'-CCg	5'-ggT	5'-CAG	5'-CCC	5'-gTT	5'-TgC	5'-ggA	5'-ggT		
		302		605		572	583	418	499		527			259	538	559		559		538				
		5'-ggC		5'-gCT		5'-gCg	5'-gTg	5'-gTC	5'-ggA		5'-CCT			5'-CTC	5'-gTC	5'-CgT		5'-CgT		5'-CC#				
42	43	44	45	46	47	48	49	50	51	52	53	54	55	56	57	58	59	60	61	62	63	64		
																								Well No.

Length of spec. PCR product(s)

Length of int. pos. control¹

5'-primer(s)²

3'-primer(s)³



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Well No.		22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41
HLA-B allele⁴	ser.¹⁰																				
*070201-070207, 070209, 070501- 0706, 0709-0712, 0714, 0717- 071802, 0721- 0723, 0726, 0728- 0731, 0734, 0735, 0739, 0741-0749N, 0751, 0752, 0755- 0759, 0761-0764, 0766-0768, 0770- 0772, 0775, 0776	B7	22																			
*0703, 0708, 0716, 0732, 0737	B7, B703	22																			
*0704, 0725	B7	22												34							
*0707, 0719, 0733, 0740, 0753, 0777	B7																				
*0713, 0715	B7	22																			
*0720, 0724	-	22		24																	
*0727	-	22										32								40	
*0736	-	22																			
*0738	-	22																			
*0750	-	22										32									
*0754	-	22																			
*0760	-			24																	
*0765	-	22																	38		
*0769	-	22																			
*080101-080106, 0805, 0808N, 0810, 0811, 0815, 0818, 0819N, 0822- 0824, 0827, 0829- 0831, 0833-0835	B8, Null	22	23						29												
*0802, 0803	B8	22	23						29												
*0804	B8	22	23						29			32									
*0806, 0813, 0820, 0840	-	22	23																		
*0807, 0814, 0828, 0837	B8	22	23																		
*0809, 081201, 0816	-		23						29												
*0817	-	22	23						29			32									
*0821	-	22	23	24					29												
*0825		22	23	24																	
*0826, 4207 ⁵	-	22							29												
*0832	-	22	23						29											38	
Well No.		22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41

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42	43	44	45	46	47	48	49	50	51	52	53	54	55	56	57	58	59	60	61	62	63	64	ser. ¹⁰	Well No. HLA-B allele ⁴	
		44			47																	64	B7	*070201-070207, 070209, 070501- 0706, 0709-0712, 0714, 0717- 071802, 0721- 0723, 0726, 0728- 0731, 0734, 0735, 0739, 0741-0749N, 0751, 0752, 0755- 0759, 0761-0764, 0766-0768, 0770- 0772, 0775, 0776	
		44																				64	B7, B703	*0703, 0708, 0716, 0732, 0737	
		44		46	47																	64	B7	*0704, 0725	
		44			47																	64	B7	*0707, 0719, 0733, 0740, 0753, 0777	
		44			w																	64	B7	*0713, 0715	
		44			47																	64	-	*0720, 0724	
																						63	-	*0727	
					47																	63	-	*0736	
																						63	-	*0738	
		44																				64	-	*0750	
		44			47									56								64	-	*0754	
		44			47																	64	-	*0760	
					47			50								58		w				64	-	*0765	
	43	44																				64	-	*0769	
		44			46																	64	B8, Null	*080101-080106, 0805, 0808N, 0810, 0811, 0815, 0818, 0819N, 0822- 0824, 0827, 0829- 0831, 0833-0835	
					46																	63	B8	*0802, 0803	
		44			46																	64	B8	*0804	
		44																				64	-	*0806, 0813, 0820, 0840	
		44			46																	64	B8	*0807, 0814, 0828, 0837	
		44			46																	64	-	*0809, 081201, 0816	
		44			46									56								64	-	*0817	
		44			46																	64	-	*0821	
		44																				64		*0825	
		44			46																	64	-	*0826, 4207 ⁵	
		44			46																	61	64	-	*0832
42	43	44	45	46	47	48	49	50	51	52	53	54	55	56	57	58	59	60	61	62	63	64		Well No.	

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Well No.		22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41
*0836	-	22	23						29												
*0838	-	22	23						29												
*130101, 130102, 1317, 1320, 132201-1323, 1325	B13			24	25						31						37				
*130201-130205, 1308Q, 1311, 1315, 1318, 1319	B13			24	25						31										
*1303	-			24	25																
*1304, 1310, 1321	-			24	25																
*1306	-			24	25												37				
*1307N	Null			24	25						31						37				
*1309	-				25						31										
*1312, 1313, 1326	-			24	25												37				
*1314	-			24							31										
*1316	-			24	25						31										
*1401, 1407N	B64				25	26															
*140201-1404, 1409	B65				25		27														
*1405-140602	-						27														
*1408, 3925N, 3930, 3932-3934, 3943, 3947, 3950 ⁶	-					26															
*1410						26											37				
*15010101, 15010102N, 150103, 150106- 150108, 1526N- 152703, 1530, 1532, 1534, 1535, 1538, 1550, 1556, 1558, 1560, 1563, 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							28											39		
*150102	B62							28		30										39	
*150104	B62																			39	
*1502, 1588, 9512, 9521, 9539	B75							28									37		39		
Well No.		22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41

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42	43	44	45	46	47	48	49	50	51	52	53	54	55	56	57	58	59	60	61	62	63	64	Well No.
				46																		64	- *0836
		44		46										56								64	- *0838
														56								63	B13 *130101, 130102, 1317, 1320, 132201-1323, 1325
														56								63	B13 *130201-130205, 1308Q, 1311, 1315, 1318, 1319
														56		59						63	- *1303
														56								63	- *1304, 1310, 1321
														56		58						63	- *1306
																						63	Null *1307N
														56								64	- *1309
														56								63	- *1312, 1313, 1326
														56								63	- *1314
											53			56								63	- *1316
	43	44																				64	B64 *1401, 1407N
	43	44																				64	B65 *140201-1404, 1409
	43	44																				64	- *1405-140602
	43	44																				64	- *1408, 3925N, 3930, 3932-3934, 3943, 3947, 3950 ⁶
	43	44					49															64	*1410
														56								62	64 B62, Null, B15 *15010101, 15010102N, 150103, 150106-150108, 1526N-152703, 1530, 1532, 1534, 1535, 1538, 1550, 1556, 1558, 1560, 1563, 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
														56								62	64 B62 *150102
														56	57							62	64 B62 *150104
									51													64	B75 *1502, 1588, 9512, 9521, 9539
42	43	44	45	46	47	48	49	50	51	52	53	54	55	56	57	58	59	60	61	62	63	64	Well No.

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Well No.		22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41
*150301, 1547, 1549, 1561, 1598, 9503, 9523, 9527, 9532, 9551, 9556, 9558	B72								29			32							39		
*1504, 9537	-							28											39		
*1505, 1506, 1533, 1539, 1540, 1548, 1565, 157801, 1584, 9507, 9536, 9538, 9541, 9550, 9555	B62, B15							28											39		
*1507, 1545, 9526				24				28											39		
*1508, 151101- 151103, 1515,	B75							28											39		
*1509	B70								29	30	31								39		
*1510, 1518, 1537, 1551, 1552, 1572, 1590, 1593, 1599, 9508, 9514, 9519, 9533, 9534, 9553	B71								29		31								39		
*1512, 1514, 1519	B76							28					33						39		
*1513	B77							28						34			37		39		
*1516, 1567, 1595	B63									30				34					39		
*15170101-151702	B63							28		30				34					39		
*1520, 152501	B62							28									37		39		
*1521, 1544	B75							28			31						37		39		
*1523	-								29		31			34					39		
*1524, 1587, 9557	B62							28						34					39		
*1528, 9520,	B15							28											39		
*1529	B15								29										39		
*1531	B75							28											39		
*1536	-			w				28									37		39		
*1542	-							28											39		
*1543	-							28											39		
*1546	B72				25			28	29										39		
*1553	-				25				29										39		
*1554	-								29			32							39		
*1555	-			24				28											39		
*1557	-							28											39		
*1562	-								29			32					37		39		
*1564	-								29			32							39		
*1566	-							28			31								39		
*1568	-			24								32									
*1569	-								29			32							39		41
*1573	-							28											39		
Well No.		22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41

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42	43	44	45	46	47	48	49	50	51	52	53	54	55	56	57	58	59	60	61	62	63	64	Well No.		
														56								64	B72	*150301, 1547, 1549, 1561, 1598, 9503, 9523, 9527, 9532, 9551, 9556, 9558	
									w					56						62		64	-	*1504, 9537	
														56									64	B62, B15	*1505, 1506, 1533, 1539, 1540, 1548, 1565, 157801, 1584, 9507, 9536, 9538, 9541, 9550, 9555
														56							62		64		*1507, 1545, 9526
									51												62		64	B75	*1508, 151101-151103, 1515,
																							64	B70	*1509
																							64	B71	*1510, 1518, 1537, 1551, 1552, 1572, 1590, 1593, 1599, 9508, 9514, 9519, 9533, 9534, 9553
														56							62		64	B76	*1512, 1514, 1519
									51													63		B77	*1513
											53											63		B63	*1516, 1567, 1595
																						63		B63	*15170101-151702
														56									64	B62	*1520, 152501
									51														64	B75	*1521, 1544
																						63		-	*1523
														56							62	63		B62	*1524, 1587, 9557
																					62		64	B15	*1528, 9520,
																							64	B15	*1529
									51														64	B75	*1531
														56								63		-	*1536
											53			56		58							64	-	*1542
														56							62	63		-	*1543
													55	56							62		64	B72	*1546
													55	56							62		64	-	*1553
														56							62		64	-	*1554
									51														64	-	*1555
							w							56							62		64	-	*1557
														56									64	-	*1562
																							64	-	*1564
														56							62		64	-	*1566
														56							62		64	-	*1568
														56									64	-	*1569
														56		59					62		64	-	*1573
42	43	44	45	46	47	48	49	50	51	52	53	54	55	56	57	58	59	60	61	62	63	64	Well No.		

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Well No.		22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41
*1574	-								29										39		
*1576	-							28											w		
*1577, 1585, 9554	-							28									37		39		
*1580	-								29	31							37		39		
*1583	-							28	29										39		
*1586	-							28											39		
*1589	-			w				28									37		39		
*1591, 9531	-								29			32	33						39		
*9501	-							28											39		
*9506	-				25			28	29								37		39		
*9515	-								29	31									39		
*9516	-							28											39		
*9524	-								29	31									39		
*9542	-		23					28											39		
*9543	-							28	29										39		
*9544	-							28									37		39		
*9561	-								29	31	32	33							39		
*180101-1803, 1805-1808, 1810, 1811, 1813-1815, 1817N, 1818, 1820, 1821, 1823N- 1828, 1830-1833, 1835	B18															35			38		
*1804	-														35				38		
*1809	-														35						
*1812	-														35				38		
*1819	-														35				38		
*1822	-														35	37			38		
*1829, 350901, 350902, 3518, 3531, 3532, 3537, 3553N, 3564, 356801, 356802, 3575, 3588, 3599 ⁷	-																			38	
*2701	B27					26											36				
*2702	B27					26											36				
*2703-2706, 2709, 2710, 2713, 2717, 2720, 2727, 2731, 2735-2737, 2741, 2745, 2746, 2751	B27					26											36				
*2707, 2711, 2714, 2715, 2721, 2728, 2732, 2734, 2738, 2743	B27																36				
Well No.		22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41

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42	43	44	45	46	47	48	49	50	51	52	53	54	55	56	57	58	59	60	61	62	63	64	Well No.		
														56								64	-	*1574	
					47				w												62	64	-	*1576	
														56							62	64	-	*1577, 1585, 9554	
																						64	-	*1580	
														56								64	-	*1583	
														56		58						64	-	*1586	
									51													63	-	*1589	
														56								64	-	*1591, 9531	
					47									56							62	64	-	*9501	
													55	56								64	-	*9506	
																						63	-	*9515	
			45											56								64	-	*9516	
			45																			64	-	*9524	
														56							62	64	-	*9542	
													55								62	64	-	*9543	
									51												62	64	-	*9544	
																						64	-	*9561	
																						61	64	B18	*180101-1803, 1805-1808, 1810, 1811, 1813-1815, 1817N, 1818, 1820, 1821, 1823N, 1828, 1830-1833, 1835
																58					61		64	-	*1804
																					61	63	-	*1809	
														56								64	-	*1812	
																					61	62	64	-	*1819
							49														61		64	-	*1822
																						61	64	-	*1829, 350901, 350902, 3518, 3531, 3532, 3537, 3553N, 3564, 356801, 356802, 3575, 3588, 3599 ⁷
					47									56								63	B27	*2701	
					47			50				54		56								63	B27	*2702	
					47			50						56								63	B27	*2703-2706, 2709, 2710, 2713, 2717, 2720, 2727, 2731, 2735-2737, 2741, 2745, 2746, 2751	
					47			50						56								63	B27	*2707, 2711, 2714, 2715, 2721, 2728, 2732, 2734, 2738, 2743	
42	43	44	45	46	47	48	49	50	51	52	53	54	55	56	57	58	59	60	61	62	63	64	Well No.		

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*2708, 2726, 2740, 2742, 2744	B2708					26										36					
*2712	-					26										36					
*2716, 2739	-					26										36					
*2718	-					26						32				36					
*2719	-															36	37				
*2723	-					26										36					
*2724	-															36					
*2725	-															36					
*2729	-					26						32				36					
*2730	-															36	37				
*2733	-															36					
*2750	-					26						32				36					
*2752						26															
*350101-350401, 350403, 3506-350803, 3511, 3512, 3515, 352001, 352002, 3523, 3529, 3533, 3534, 3536, 3539-3542, 3548, 3550, 3552, 3554, 3555, 3557, 3559, 3561, 3565Q, 3570, 3574, 3577, 3578, 3582-3585, 3590-3595	B35																				
*350402	-									30							37	38			
*3505, 3522, 3551, 3558, 3572, 3589, 3597	B35			24															38		
*3510, 3513, 3528, 3569, 3580	-																37	38			
*351401, 351402, 3562	B35																37	38			
*3516	-			24													37	38			
*3517, 3530	B35			24													37	38			
*3519	B35																37				
*3521, 3524, 3581	-																37	38			
*3525, 3549	-																37				
*3526	-							27									37				
*3527, 3556	B35																37				
*3535	-																37	38			41
*3538	-																37	38			
*3543, 3544, 3567, 3579, 3586	B35																		38		
Well No.		22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41

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42	43	44	45	46	47	48	49	50	51	52	53	54	55	56	57	58	59	60	61	62	63	64		Well No.		
					47			50						56								64	B2708	*2708, 2726, 2740, 2742, 2744		
														56								64	-	*2712		
														56								63	-	*2716, 2739		
														56								64	-	*2718		
					47			50						56								63	-	*2719		
																						63	-	*2723		
					47			50	51					56								63	-	*2724		
					47			50						56								62	63	-	*2725	
														56								63	-	*2729		
					47			50				54		56								63	-	*2730		
					47			50						56									64	-	*2733	
					47			50						56								63	-	*2750		
					47			50						56								63	-	*2752		
																									*350101-350401, 350403, 3506-350803, 3511, 3512, 3515, 352001, 352002, 3523, 3529, 3533, 3534, 3536, 3539-3542, 3548, 3550, 3552, 3554, 3555, 3557, 3559, 3561, 3565Q, 3570, 3574, 3577, 3578, 3582-3585, 3590-3595	
																						61	64	B35		
																						61	64	-	*350402	
																						61	64	B35	*3505, 3522, 3551, 3558, 3572, 3589, 3597	
														56									64	-	*3510, 3513, 3528, 3569, 3580	
																						61	62	64	B35	*351401, 351402, 3562
														56									64	-	*3516	
																						61	64	B35	*3517, 3530	
													55										64	B35	*3519	
							49															61	64	-	*3521, 3524, 3581	
																							64	-	*3525, 3549	
																							64	-	*3526	
																						61	64	B35	*3527, 3556	
																						61	64	-	*3535	
						48																61	64	-	*3538	
																						61	62	64	B35	*3543, 3544, 3567, 3579, 3586
42	43	44	45	46	47	48	49	50	51	52	53	54	55	56	57	58	59	60	61	62	63	64		Well No.		

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Well No.		22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41
*3545, 3571	-												33				37	38			
*3546	-				25												37				
*3547	-				25												37				
*3560	-																	38			
*3563	-				25												37				
*3566	-	22																38			
*3576	-																37	38			
*3587	-	22							29									38			
*370101-370103, 370105, 3703N, 3706, 3713	B37, Null												33				37			40	
*370104	-												33				37			40	
*3702	-					26							33							40	
*3704	-												33				37			40	
*3705	-												33				37			40	
*3707	-	22											33							40	
*3708	-												33				37			40	
*3709	-												33							40	
*3710	-																37			40	
*3711	-																37	38		40	
*3712	-								29				33							40	
*3714	-																37			40	
*380101-380202, 3808, 3809, 3811- 3816, 3818, 3819	B38					26															41
*3803	B16					26							32								41
*3804	-																				41
*3805	-						27														41
*3806	-																				41
*3807	-					26															41
*3810	-					26															
*3817	-					26							33							40	41
*39010101, 39010102L, 390103-390106, 3903, 3905- 390602, 3909, 3911, 3914, 3915, 3924, 3926-3929, 3931, 3935, 3937, 3938Q, 3940N, 3941, 3944, 3946,	B3901 , B39					26															41
*390201, 3908	B3902 , B39					26							32								41
Well No.		22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41

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42	43	44	45	46	47	48	49	50	51	52	53	54	55	56	57	58	59	60	61	62	63	64		Well No.	
						48													61			64	-	*3545, 3571	
									51														64	-	*3546
													55										64	-	*3547
																58			61				64	-	*3560
													55	56									64	-	*3563
																				61			64	-	*3566
						47		50												w			64	-	*3576
				46																61			64	-	*3587
						48								56								63	B37, Null		*370101-370103, 370105, 3703N, 3706, 3713
						48								56	57							63	-	*370104	
														56								63	-	*3702	
						48	49							56								63	-	*3704	
						48								56									64	-	*3705
														56								63	-	*3707	
						48													61			63	-	*3708	
														56								63	-	*3709	
						48								56								63	-	*3710	
						48								56									64	-	*3711
						48								56								63	-	*3712	
						48								56								63	w	-	*3714
42	43																					63	B38		*380101-380202, 3808, 3809, 3811-3816, 3818, 3819
42														56								63	B16		*3803
	43													56								63	-	*3804	
42	43																					63	-	*3805	
																			61			63	-	*3806	
																			61			63	-	*3807	
42	43																					63	-	*3810	
42	43																					63	-	*3817	
		43	44																				64	B3901, B39	*39010101, 39010102L, 390103-390106, 3903, 3905-390602, 3909, 3911, 3914, 3915, 3924, 3926-3929, 3931, 3935, 3937, 3938Q, 3940N, 3941, 3944, 3946,
			44											56								64	B3902, B39	*390201, 3908	
42	43	44	45	46	47	48	49	50	51	52	53	54	55	56	57	58	59	60	61	62	63	64		Well No.	

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*390202, 391301, 391302, 3923, 3949	B3902 , B39											32									41
*3904	B39						27														41
*3907	-					?	?														41
*3910, 3916, 3920	B39																				41
*3912, 3945	-																				41
*3917	-																				41
*3918	-					26															41
*391901	-																	38			41
*391902	-					26												38			41
*3922	-					26															41
*3936	-					26															41
*3939	-					26						32									41
*3942	-					26											37				41
*400101-400106, 4007, 4023, 4051, 4060, 4066, 4073, 4079	B60, B40				25																
*400201-4004, 40060101-400602, 4020, 4039, 4070, 4089, 4097	B61, B40																				
*4005	B4005			24																	
*4008	-																				
*4009, 4011, 4018, 4024, 4027, 4029, 4035, 4037, 4040, 4044, 4050, 4056, 4057, 4064, 4075, 4078, 4082, 4083, 4085, 4086, 4090, 4091	B61, B40																				
*4010, 4022N, 4033, 4036, 4038, 4042, 4043, 4049, 4052, 4054, 4055, 4061-4063, 4065, 4067, 4081, 4084, 4087, 4088, 4092	Null, B40, B60				25																
*4012	-								29			32							39		
*4013, 4019	-																				
*401401-401403,	-				25																
*4015, 4030, 4032, 4034	B61	22			25																
*4016, 4059	-	22			25																
*4021	-																				
Well No.		22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41

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42	43	44	45	46	47	48	49	50	51	52	53	54	55	56	57	58	59	60	61	62	63	64	Well No.	
		44												56								64	B3902, B39 *390202, 391301, 391302, 3923, 3949	
	43	44																				64	B39 *3904	
	43	44																				64	- *3907	
		44																				64	B39 *3910, 3916, 3920	
	43	44																				64	- *3912, 3945	
		44														58						64	- *3917	
	43	44																			62	64	- *3918	
	43	44																				64	- *391901	
	43	44																		61		64	- *391902	
	43	44												56								64	- *3922	
	43	44																				62	64	- *3936
		44																				64	- *3939	
	43	44																				64	- *3942	
		44	45											55	56								64	B60, B40 *400101-400106, 4007, 4023, 4051, 4060, 4066, 4073, 4079
														55	56								64	B61, B40 *400201-4004, 40060101-400602, 4020, 4039, 4070, 4089, 4097
														55	56								64	B4005 *4005
														55									64	- *4008
														55	56								64	B61, B40 *4009, 4011, 4018, 4024, 4027, 4029, 4035, 4037, 4040, 4044, 4050, 4056, 4057, 4064, 4075, 4078, 4082, 4083, 4085, 4086, 4090, 4091
														55	56								64	Null, B40, B60 *4010, 4022N, 4033, 4036, 4038, 4042, 4043, 4049, 4052, 4054, 4055, 4061-4063, 4065, 4067, 4081, 4084, 4087, 4088, 4092
			45											56									64	- *4012
										52		54		56									63	- *4013, 4019
													55	56									64	- *401401-401403,
													55	56									64	B61 *4015, 4030, 4032, 4034
		44											55	56									64	- *4016, 4059
			45											56									64	- *4021
42	43	44	45	46	47	48	49	50	51	52	53	54	55	56	57	58	59	60	61	62	63	64	Well No.	

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Well No.		22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41
*4025, 4069	-				25																
*4026	B21									30											
*4028	-									30							37				
*4031, 4045, 4080	-	22			25																
*4046	-										32					36					
*4047	-				25																
*4048	-				25					31											
*4058	-				25																
*4068	-																				
*4071	-			24																	
*407201, 407202, 4077	-				25																
*4074	-																				
*4076	-				25																
*4093	-										32					36					
*4094	-																				
*4095	-																				
*4096	-																				
*4098	-	22																			
*4101, 410301, 410302, 4106, 4107	B41				25				29												
*410201	B41	22			25				29												
*4104	-	22			25																
*4105	-				25				29												
*4108	-				25				29					34							
*4201, 4202, 4206, 4210, 4212	B42	22							29												
*4204	-								29												
*420501, 420502	-	22							29					34							
*4208	-								29												
*4209	-	22																			
*4211	-	22							29		32										
*44020101-440205, 440208, 4411, 4416, 4419N, 4421-4424, 4427, 4433, 4434, 4448, 4452N, 4455, 4459, 4463, 4466, 4467	B44, B47, Null				25												37				
Well No.		22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41

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42	43	44	45	46	47	48	49	50	51	52	53	54	55	56	57	58	59	60	61	62	63	64		Well No.	
		?	45										55										64	-	*4025, 4069
		?											55	56									64	B21	*4026
		?					49						55	56									64	-	*4028
		?							51				55	56									64	-	*4031, 4045, 4080
		?	45											56									64	-	*4046
			45											56								63		-	*4047
		?	45										55	56									64	-	*4048
		?											55	56		58							64	-	*4058
		?											55										64	-	*4068
		?											55	56			59						64	-	*4071
		44											55	56									64	-	*407201, 407202, 4077
		?	45										55	56									64	-	*4074
			45											56										-	*4076
		?												56									64	-	*4093
													55	56	57								64	-	*4094
		?									53		55	56									64	-	*4095
														56								63		-	*4096
		?											55	56									64	-	*4098
		44		46									55	56									64	B41	*4101, 410301, 410302, 4106, 4107
		44		46									55	56									64	B41	*410201
		44		46									55	56									64	-	*4104
		44		46									?	56									64	-	*4105
		44		46									55	56									64	-	*4108
		44		46	47																		64	B42	*4201, 4202, 4206, 4210, 4212
		44		46	47																		64	-	*4204
		44		46	47																		64	-	*420501, 420502
		44			47																		64	-	*4208
		44		46	47																		64	-	*4209
		44		46										56									64		*4211
							48							56	57							63	B44, B47, Null	*44020101- 440205, 440208, 4411, 4416, 4419N, 4421-4424, 4427, 4433, 4434, 4448, 4452N, 4455, 4459, 4463, 4466, 4467	
42	43	44	45	46	47	48	49	50	51	52	53	54	55	56	57	58	59	60	61	62	63	64		Well No.	

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*440301-4405, 4413, 4426, 442801-4430, 4432, 4435, 4436, 4438, 4439, 4442, 4445, 4451, 4456N, 4458N, 4461N, 4469	B44				25												37				
*4406	B44																37				
*4407																	37				
*4408	B44			w													37				
*4409	B12				25												37				
*4410	-				25							32					37		39		
*4412	-				25												37				
*4414	-				25				29								37				
*4415	-				25				29			32									
*4417, 4443	-				25								33				37				
*4418	-				25				29			32									
*4420	-				25				29												
*4425, 4450	-				25												37				
*4431	-				25																
*4437, 446401,	-				25																
*4440	-											32				36	37				
*4441, 4453	-				25																
*4444	-											32				36	37				
*4446	-				25												37				
*4447, 4465	-				25																
*4449	-		23		25																
*4454	-			24	25																
*4457	-			w													37				
*4460	-			24	25												37				
*4462	-				25				29	30							37				
*4501, 4505, 4507	B45				25				29			32									
*4502, 4503	-				25				29												
*4504	-				25				29												
*4506	-				25				29			32									
*4508	-				25				29												
*4509	-				25				29				33								
*460101, 460102, 4604, 4605, 4607N, 4609, 4610, 4614-4616	B46								28												
*4602	-								28												
*4603, 4608, 461301, 461302, 4619, 4621	-								28												
*4606	-								28												
Well No.		22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41

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42	43	44	45	46	47	48	49	50	51	52	53	54	55	56	57	58	59	60	61	62	63	64	Well No.	
						48								56							63		B44	*440301-4405, 4413, 4426, 442801-4430, 4432, 4435, 4436, 4438, 4439, 4442, 4445, 4451, 4456N, 4458N, 4461N, 4469
						48						54			57				61		63		B44	*4406
						48								56							63			*4407
						48								56	57						63		B44	*4408
						48							55	56	57							64	B12	*4409
						48								56			59				63		-	*4410
						48									57						63		-	*4412
						48								56							63		-	*4414
						48								56			59				63		-	*4415
						48								56							63		-	*4417, 4443
										52				56			59				63		-	*4418
						48								56	57						63		-	*4420
						48				52		54		56							63		-	*4425, 4450
			45			48								56							63		-	*4431
														56							63		-	*4437, 446401,
						48								56							63		-	*4440
						48								56	57						63		-	*4441, 4453
						48								56	57						63		-	*4444
						48							55	56								64	-	*4446
						48								56							63		-	*4447, 4465
						48								56	57						63		-	*4449
						48								56							63		-	*4454
						48								56							63		-	*4457
						48								56							63		-	*4460
						48								56							63		-	*4462
		44											55	56			59					64	B45	*4501, 4505, 4507
		44											55	56								64	-	*4502, 4503
		44											55	56			59					64	-	*4504
		44				47							55	56			59					64	-	*4506
		44											55	56		58						64	-	*4508
		44											55	56								64	-	*4509
						47	49														62	64	B46	*460101, 460102, 4604, 4605, 4607N, 4609, 4610, 4614-4616
					w		49														62	64	-	*4602
						47	49															64	-	*4603, 4608, 461301, 461302, 4619, 4621
			45			47	49															64	-	*4606
42	43	44	45	46	47	48	49	50	51	52	53	54	55	56	57	58	59	60	61	62	63	64	Well No.	

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Lot-specific Information

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Well No.		22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41
*4611	-							28													
*4612	-			24				28													
*4617	-							28					33								
*4618	-							28													
*47010101, 47010102	B47				25																
*4702	-				25																
*4703	-				25																
*4704, 4705	-				25	26															
*480101, 480102, 4807, 4809, 4811, 4815, 4819	B48	22											32								
*4802	-												32				37				
*480301, 480302	B48												32								
*4804	B48												32								
*4805, 4808, 4810, 4812, 4814, 4817	B48	22											32								
*4806	-	22																			
*4813	-												32								
*4816	-	22											32								
*4818	-	22											32								
*490101	B49				25																
*490102	-				25																
*4902	-				25																
*4903	-																				
*4904, 4905					25																
*5001, 5004	B50				25																
*5002	B45				25								32								
*510101-510103, 510105-510203, 5103, 5105, 5107, 510901, 510902, 5111N, 5112, 511302, 5114, 5117-5119, 5122, 5123, 5126-5130, 5132, 5133, 5137- 5141N, 5143, 5148, 5149, 5151- 5153, 5155, 5157, 5158, 5160, 5163, *510104, 510204, 511301, 5116, 5121, 512401, 512402, 5131, 5134, 5135	B51, B5102 , B5103 , Null												30								
*5104, 5146, 5156	B51												30								37
*5106, 5159	B51												30								
Well No.		22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41

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42	43	44	45	46	47	48	49	50	51	52	53	54	55	56	57	58	59	60	61	62	63	64		Well No.	
					47		49									59						64	-	*4611	
					47		49														62		64	-	*4612
					47		49														62		64	-	*4617
					47		49									58							64	-	*4618
								50						56								63	B47	*47010101, 47010102	
								50					55	56									64	-	*4702
								50					w	56								63	w	-	*4703
														56								63		-	*4704, 4705
		44							51					56									64	B48	*480101, 480102, 4807, 4809, 4811, 4815, 4819
		44												56									64	-	*4802
		44	45											56									64	B48	*480301, 480302
		44							51					56									64	B48	*4804
		44												56									64	B48	*4805, 4808, 4810, 4812, 4814, 4817
		44							51														64	-	*4806
		44												56									64	-	*4813
		44							51														64	-	*4816
									51					56									63	-	*4818
										52	53			56			59						63	B49	*490101
										52				56			59						63	-	*490102
											53			56			59						63	-	*4902
											53			56			59						63	-	*4903
										52	53			56									63		*4904, 4905
		44									53		55	56			59						64	B50	*5001, 5004
		44									53		55	56			59						64	B45	*5002
																									*510101-510103, 510105-510203, 5103, 5105, 5107, 510901, 510902, 5111N, 5112, 511302, 5114, 5117-5119, 5122, 5123, 5126-5130, 5132, 5133, 5137- 5141N, 5143, 5148, 5149, 5151- 5153, 5155, 5157, 5158, 5160, 5163, *510104, 510204, 511301, 5116, 5121, 512401, 512402, 5131, 5134, 5135
											53	54							61			63	B51, B5102 , B5103 , Null		
											53	54							61			63	B51, B52		
							49					54											61	B51	*5104, 5146, 5156
												54											61	B51	*5106, 5159
42	43	44	45	46	47	48	49	50	51	52	53	54	55	56	57	58	59	60	61	62	63	64		Well No.	

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Well No.		22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41
*5108, 5120, 5144N	B51								29	30											
*5110, 5145	-																				
*5115, 5162	-																				
*5136	-								29												
*5142	-																37				
*5150, 5154	-									30											
*5161	-									30											
*5164	-			24						30											
*520101-5207, 5209-5213	B52									30											
*5208, 5214	-																				
*530101-530104, 5304, 5305, 5307, 5308, 5310, 5316, 5318	B53																37				
*5302, 5306	B53																37				
*5303, 5309, 5311- 5313	-																37				
*5314	-			24																	
*5315	-	22															37				
*5317	-																37				
*5401, 5402, 5405N, 5407, 5408N, 5410, 5413, 5416-5419	B54																				
*5403	-																				
*5404, 5409, 5411, 5414, 5415	-																				
*5406	-																				
*5412	-																				
*550101-550104, 5503, 5505, 5511, 5515, 5525, 5529, 5531, 5533	B55																				
*550201-550203, 5507, 5510, 5512, 5516, 5519, 5526, 5530, 5610 ⁸	B54, B55																				
*5504, 5508, 5513, 5523, 5527, 5532, 5615, 5618, 5619N, 5622 ⁹	B55																				
*5509, 5524	-										31										
*5514	-																37				
*5517, 5528	-																				
Well No.		22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41

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42	43	44	45	46	47	48	49	50	51	52	53	54	55	56	57	58	59	60	61	62	63	64		Well No.		
											53	54							61		63		B51	*5108, 5120, 5144N		
												54								61		63		-	*5110, 5145	
												54					59			61		63		-	*5115, 5162	
											53	54								61		63		-	*5136	
						48						54								61		63		-	*5142	
											53									61		63		-	*5150, 5154	
											w	54								61	62	63		-	*5161	
												54								61		63		-	*5164	
											53	54		56								63		B52	*520101-5207, 5209-5213	
											53	54		56								63		-	*5208, 5214	
												54										61		B53	*530101-530104, 5304, 5305, 5307, 5308, 5310, 5316, 5318	
							49					54										61		B53	*5302, 5306	
																						61		-	*5303, 5309, 5311-5313	
												54										61		63	-	*5314
												54										61		63	-	*5315
												54		56									63	-	*5317	
					47			50							57	58							64	B54	*5401, 5402, 5405N, 5407, 5408N, 5410, 5413, 5416-5419	
					47			50							57	59							64	-	*5403	
					47			50							57								64	-	*5404, 5409, 5411, 5414, 5415	
					47			50							57							62	64	-	*5406	
					47			50	52						57	58							63	-	*5412	
					47			50			53					58							64	B55	*550101-550104, 5503, 5505, 5511, 5515, 5525, 5529, 5531, 5533	
					47			50								58							64	B54, B55	*550201-550203, 5507, 5510, 5512, 5516, 5519, 5526, 5530, 5610 ⁸	
					47			50															64	B55	*5504, 5508, 5513, 5523, 5527, 5532, 5615, 5618, 5619N, 5622 ⁹	
					47			50			53												64	-	*5509, 5524	
					47			50									60						64	-	*5514	
					47			50			53												64	-	*5517, 5528	
42	43	44	45	46	47	48	49	50	51	52	53	54	55	56	57	58	59	60	61	62	63	64		Well No.		

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Well No.		22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41
*5518	-											32									
*5520	-								29												
*5521	-																				
*5522	-										31										
*5534	-																				
*5535																					
*5601, 5602, 5604, 5608, 5614, 5616, 5620, 5624	B56																				
*5603	B22																				
*560501	-									30											
*560502	-									30											
*5606	B78									30								38			
*5607	-																				
*5609, 5611, 5612	-																37				
*5613	-								29												
*5617	-																				
*5621	-									30											
*5623	-																				
*570101-5706, 5708, 5710, 5715, 5717-5719	B57																37				
*5707	-																37				
*5709	-								29								37				
*5711, 5713	-																37				
*5712	-																37				
*5714	-																37				
*5716	-																37				
*580101, 580102, 5804, 5805, 5810N- 5815, 5819, 5821	B58																37				
*5802, 5806, 5816	B58																				
*5807	-											33									
*5808	-									30											
*5809	-																37				
*5817N	-																37				
*5818				24																	
*5820																					41
*5901, 5905	B59																				
*5902, 5903	-																				
*5904	-																				
*670101	B67					26															41
*670102	B67																				41
*6702	-																				41
Well No.		22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41

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42	43	44	45	46	47	48	49	50	51	52	53	54	55	56	57	58	59	60	61	62	63	64		Well No.
														56		58						64	-	*5518
				46	47			50														64	-	*5520
					47			50			w					58				62		64	-	*5521
					47			50														64	-	*5522
					47			50						56		58						64	-	*5534
					47			50	w							58						64	-	*5535
					47			50								59						64	B56	*5601, 5608, 5614, 5616, 5620
					47			50												62		64	B22	*5602, 5604
					47			50			53					58						64	-	*5603
					47			50			53											64	-	*560501
					47			50			53					58			w			64	B78	*560502
					47			50								59					63		-	*5606
					47			50														64	-	*5607
					47			50								59						64	-	*5609
																59						64	-	*5610
					47			50		52	53											63	-	*5611, 5612
																58						64	-	*5613
												54					60				63		B57	*570101-5706, 5708, 5710, 5715, 5717-5719
						48						54					60				63		-	*5707
						48						54					60				63		-	*5709
												54					60				63		-	*5711, 5713
																	60				64		-	*5712
							49					54					60				63		-	*5714
												54									63		-	*5716
												54										63	B58	*580101, 580102, 5804, 5805, 5810N, 5815, 5819, 5821
												54										63	B58	*5802, 5806, 5816
												54										63	-	*5807
											53	54										63	-	*5808
							49					54										63	-	*5809
																						63	-	*5817N
												54										63	-	*5818
												54										63	-	*5820
											52					58						63	B59	*5901, 5905
											52											63	-	*5902, 5903
											52					59						63	-	*5904
		44			47																	64	B67	*670101
		44			47																	64	B67	*670102
		44			w																	64	-	*6702
42	43	44	45	46	47	48	49	50	51	52	53	54	55	56	57	58	59	60	61	62	63	64		Well No.

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Well No.		22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	
*7301	B73																					
*7801, 780202, 7803	B78									30								38				
*780201, 7804	B78									30								38				
*7805	-									30								38				
*7806	-									30												
*8101	B81	22																				
*8102	-	22																				
*8103, 8104N	-	22																				
*8201, 8202	-								29			32							39			
*8301	-																37					
Well No.		22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	
HLA-B allele ⁴	ser. ¹⁰																					
Cw*0305, 0325, 0327				24																		
Cw*0312, 0319																						
Cw*0620																						
Cw*0746									29													
Cw*150204																						
Well No.		22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	

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

Well number 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 27, 30, 31, 40, 41, 53 and 60 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.

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42	43	44	45	46	47	48	49	50	51	52	53	54	55	56	57	58	59	60	61	62	63	64	Well No.	
		44			47															62	64	B73	*7301	
											53					58			61			64	B78	*7801, 780202, 7803
											53								61			64	B78	*780201, 7804
											53			56								64	-	*7805
											53			56								64	-	*7806
					47			50	51													64	B81	*8101
		44			47				51													64	-	*8102
					47				51													64	-	*8103, 8104N
					47			50									59					64	-	*8201, 8202
					47	48		50							57							64	-	*8301
42	43	44	45	46	47	48	49	50	51	52	53	54	55	56	57	58	59	60	61	62	63	64	Well No.	
																							ser. ¹⁰	HLA-B allele ⁴
																								Cw*0305, 0325, 0327
																59								Cw*0312, 0319
																					62			Cw*0620
																								Cw*0746
																58								Cw*150204
42	43	44	45	46	47	48	49	50	51	52	53	54	55	56	57	58	59	60	61	62	63	64	Well No.	

The 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.

⁵The 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.

⁶The B*1408 and the B*3925N, B*3930, B*3932 to 3934, 3943, 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.

⁷The B*1829 and the B*350901-350902, 3518, 3531, 3532, 3537, 3553N, 3564, 356801-356802, 3575, 3588 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.

⁸The B*550201-550203, 5507, 5510, 5512, 5516, 5519, 5526, 5530 and B*5610 give rise to identical amplification patterns with the HLA-B low resolution primer set. These alleles can be separated by the respective high resolution primer sets.

⁹The B*5504, B*5508, B*5513, B*5523, B*5527, B*5532 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*5716, B*580101-580102, 5804, 5805, 5810N-5815, 5819 and 5821 give rise to identical amplification patterns with the HLA-B low resolution primer set. These alleles can be separated by the respective high resolution primer sets.

¹⁰The 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																						
		65	66	67	68	69	70	71	72	73	74	75	76	77	78	79	80	81	82	83	84	85	86	87
Length of spec.	PCR product(s)	205	200	215	210	220	120	80	85	100	230	205	170	100	85	210	195	175	100	110	110	165	215	175
Length of int. pos. control ¹	5'-primer(s) ²	515	430	430	430	430	430	430	430	430	430	515	430	430	430	430	430	430	430	430	430	430	430	430
3'-primer(s) ³	Well No.	5'-gCg ⁺ 71(299) 5'-gAg ⁺ 67(286) 5'-gAg ⁺ 67(286) 5'-gAT ⁺ 67(286)	5'-gCg ⁺ 71(299) 5'-gAg ⁺ 67(286) 5'-gAg ⁺ 67(286) 5'-gAT ⁺ 67(286)	5'-gCg ⁺ 71(299) 5'-gAg ⁺ 67(286) 5'-gAg ⁺ 67(286) 5'-gAT ⁺ 67(286)	5'-gCg ⁺ 71(299) 5'-gAg ⁺ 67(286) 5'-gAg ⁺ 67(286) 5'-gAT ⁺ 67(286)	5'-gCg ⁺ 71(299) 5'-gAg ⁺ 67(286) 5'-gAg ⁺ 67(286) 5'-gAT ⁺ 67(286)	5'-gCg ⁺ 71(299) 5'-gAg ⁺ 67(286) 5'-gAg ⁺ 67(286) 5'-gAT ⁺ 67(286)	5'-gCg ⁺ 71(299) 5'-gAg ⁺ 67(286) 5'-gAg ⁺ 67(286) 5'-gAT ⁺ 67(286)	5'-gCg ⁺ 71(299) 5'-gAg ⁺ 67(286) 5'-gAg ⁺ 67(286) 5'-gAT ⁺ 67(286)	5'-gCg ⁺ 71(299) 5'-gAg ⁺ 67(286) 5'-gAg ⁺ 67(286) 5'-gAT ⁺ 67(286)	5'-gCg ⁺ 71(299) 5'-gAg ⁺ 67(286) 5'-gAg ⁺ 67(286) 5'-gAT ⁺ 67(286)	5'-gCg ⁺ 71(299) 5'-gAg ⁺ 67(286) 5'-gAg ⁺ 67(286) 5'-gAT ⁺ 67(286)	5'-gCg ⁺ 71(299) 5'-gAg ⁺ 67(286) 5'-gAg ⁺ 67(286) 5'-gAT ⁺ 67(286)	5'-gCg ⁺ 71(299) 5'-gAg ⁺ 67(286) 5'-gAg ⁺ 67(286) 5'-gAT ⁺ 67(286)	5'-gCg ⁺ 71(299) 5'-gAg ⁺ 67(286) 5'-gAg ⁺ 67(286) 5'-gAT ⁺ 67(286)	5'-gCg ⁺ 71(299) 5'-gAg ⁺ 67(286) 5'-gAg ⁺ 67(286) 5'-gAT ⁺ 67(286)	5'-gCg ⁺ 71(299) 5'-gAg ⁺ 67(286) 5'-gAg ⁺ 67(286) 5'-gAT ⁺ 67(286)	5'-gCg ⁺ 71(299) 5'-gAg ⁺ 67(286) 5'-gAg ⁺ 67(286) 5'-gAT ⁺ 67(286)	5'-gCg ⁺ 71(299) 5'-gAg ⁺ 67(286) 5'-gAg ⁺ 67(286) 5'-gAT ⁺ 67(286)	5'-gCg ⁺ 71(299) 5'-gAg ⁺ 67(286) 5'-gAg ⁺ 67(286) 5'-gAT ⁺ 67(286)	5'-gCg ⁺ 71(299) 5'-gAg ⁺ 67(286) 5'-gAg ⁺ 67(286) 5'-gAT ⁺ 67(286)	5'-gCg ⁺ 71(299) 5'-gAg ⁺ 67(286) 5'-gAg ⁺ 67(286) 5'-gAT ⁺ 67(286)	5'-gCg ⁺ 71(299) 5'-gAg ⁺ 67(286) 5'-gAg ⁺ 67(286) 5'-gAT ⁺ 67(286)	
	DR	65	66	67	68	69	70	71	72	73	74	75	76	77	78	79	80	81	82	83	84	85	86	87

Lot No.: **30G**

Lot-specific Information

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Well No.	DR	65	66	67	68	69	70	71	72	73	74	75	76	77	78	79	80	81	82	83	84	85	86	87
DRB1 allele ⁴	ser ⁵																							
*010101-010205, 0104-0122	1	65																						
*0103	103	66																						
*03010101-030106, 0304-0306, 0309, 0311-0316, 0318-0320, 0322, 0323, 0325, 0326, 0328, 0330, 0331, 0333, 0334, 0336, 0337, 0343	17					69	70											81						
*030201-0303, 0327, 0329, 0338	18					69	71											81						
*0307, 0317, 0321, 0324, 0332, 0335, 0339-0341	-					69												81						
*0308	-					69	70				75			77										
*0310	-					69	70													83	84			
*0342	-					69																		
*040101-0461, 0463-0468, 0470-0472, 0474-0462, 0469, 0473	4 -								72											82				
*07010101-070103, 0703-0717	7									73														
*080101-080203, 080401-0807, 0811, 0816, 0817, 0822, 0824, 0826, 0828	8										74						80							
*080302, 0810, 0812-0815, 0818, 0819, 0823, 0825, 0827, 0829, 0830, 0833, 0834, 0836	8										74													
*0808	-										74						80		82					
*0809, 0821, 1415	8										74						80				84			
*0820, 1318, 1347, 1355 ⁶	8,13															79	80	81			84			
*0831, 1167	-										74			77			80							
*0832	-										74				78						84			
*0835											74										84			
*090102-090202, 0904-0908	9											75									83			
*0903												75												
*100101-1003	10												76											
Well No.	DR	65	66	67	68	69	70	71	72	73	74	75	76	77	78	79	80	81	82	83	84	85	86	87

Lot No.: **30G**

Lot-specific Information

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Well No.	DR	65	66	67	68	69	70	71	72	73	74	75	76	77	78	79	80	81	82	83	84	85	86	87	
*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													77		79	80								
*110201-1103, 111101, 111102, 111401, 111402, 1116, 1120, 1121, 1136, 1140, 1141, 1148, 1159, 1163, 116501, 116502, 1168, 1170							70									77		79	80						
*1105														77			80								
*1107, 1153						69						75		77											
*110801, 110802, 1118-111902, 1142, 1157														77		79									
*111301, 111302								w						77						83	84				
*1117, 1152														77						83	84				
*1122														77											
*1123, 1125														77		79	80					84			
*1126, 1134								71						77											
*1131, 1145, 1164														77		79						84			
*1155														77			80					84			
*1169														77			80			82					
*1173							70							77		79									
*120101, 120102, 120302, 1205-1212,	12															78									
*120201-120204, 1213, 1215, 1218, 1219	12															78		80							
*1204	-											74			78										
*1216	-											74			78		80								
*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						70										79	80	81						
Well No.	DR	65	66	67	68	69	70	71	72	73	74	75	76	77	78	79	80	81	82	83	84	85	86	87	

Lot No.: **30G**

Lot-specific Information

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Well No.	DR	65	66	67	68	69	70	71	72	73	74	75	76	77	78	79	80	81	82	83	84	85	86	87
*130202, 130301, 130302, 1310, 133301, 1337, 1366, 1381, 1388	13						70									79		81						
*130501, 130502, 130701, 130702, 131101, 131102, 131401-131403, 1321, 1342, 1346, 1349- 135002, 1362	13															79	80	81						
*1306, 1312, 1325, 1330, 1356, 1358, 1360, 1377, 1382	13															79		81						
*1309																	80	81						
*1313, 1484																79		81		84				
*1315, 1319, 1353, 1357							70	71								79	80	81						
*1317							70			73							80							
*1326								71								79	80	81						
*1343							70									79	80			83	84			
*1344, 1386								71										81						
*1345							70									79	80		82		84			
*1367																79	80							
*1385, 1419, 1421 ⁷							70	71								79		81						
*140101, 140102, 1404, 140701, 140702, 1410, 1426, 1428, 1431, 1435, 1438, 1439, 1454, 1455, 1457, 1460-1462, 1470, 1471, 1475, 1476, 1479, 1486	14																			82	83	84		
*140103, 1408, 142302, 1434, 1472	-																			83	84			
*1402, 1406, 1409, 1413, 1417, 1420, 1429, 1430, 1433, 1441, 1447, 1448, 1451, 1480, 1483	14							71										81		83				
*140301, 140302, 1412, 1440, 1463, 1467, 1477, 1478, 1485	14							71								79		81			84			
*140501-140503, 1414, 142301, 1436, 1443- 1445, 1456, 1459, 1464	14																	81		83	84			
*1411	-										74									83	84			
*1416	6						70									79	80		82	83	84			
*1418, 1481	-							71										81		83	84			
Well No.	DR	65	66	67	68	69	70	71	72	73	74	75	76	77	78	79	80	81	82	83	84	85	86	87

Lot No.: **30G**

Lot-specific Information

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Well No.	DR	65	66	67	68	69	70	71	72	73	74	75	76	77	78	79	80	81	82	83	84	85	86	87
*1422	-															79	80		82	83	84			
*1424	-							71									80	81						
*1425, 1453	-															79	80		82		84			
*1427	14							71								79	80	81			84			
*143201, 143202	-							w											82	83	84			
*1437	-																80	81	82					
*1442	-																	81			84			
*1446, 1452	-																				83			
*1449	-							71											82	83	84			
*1450	-									73									82	83	84			
*1458	-																		82		84			
*1465	-							w										81		83	84			
*1468	-										74								82	83	84			
*1469	-															79			82		84			
*1473	-																80		82	83	84			
*1474	-															79			82	83	84			
*1482	-						70												82	83	84			
*15010101-1520, 1522-1524, 1526, 1528-1533	15			67																				
*1521	-			67																	w			
*1525	-			67		69																		
*1527	-			67																	83			
*160101-1603, 160501, 160502, 1607-1613N	16				68																			
*1604	16				68																w			
Well No.		65	66	67	68	69	70	71	72	73	74	75	76	77	78	79	80	81	82	83	84	85	86	87
DRB1 allele ⁴	ser ⁵																							
DRB3*01010201-0113, DRB3*0201-0224, DRB3*030101-0303	52																						85	
DRB4*01010101-0107	53																						86	
DRB5*010101-0113, DRB5*0202-0205	51																							87
Well No.	ser ⁵	65	66	67	68	69	70	71	72	73	74	75	76	77	78	79	80	81	82	83	84	85	86	87

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

Well number 65 contains the primer pair giving rise to the longer, 515 bp, internal positive control band in order to help in the correct orientation of the DR low resolution typing.

In addition, well number 74 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.

Lot No.: **30G**

Lot-specific Information

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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. 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.

'?', nucleotide sequence information for the primer matching region(s) is not known.

Lot No.: **30G**

Lot-specific Information

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INTERPRETATION TABLE									
DQ low resolution SSP typing									
Amplification patterns of the DQB1*0501 to DQB1*0403 alleles									
		Well							
		88	89	90	91	92	93	94	95
Length of spec.		225	220	210	135	220	220	145	210
PCR product(s)			270		150			185	
Length of int.		515	430	430	515	515	515	515	430
pos. control¹									
5'-primer(s)²		26(173) <small>5' -ggg 3'</small>	9(122) <small>5' -gTT 3'</small>	30(185) <small>5' -AAg 3'</small>	21(159) <small>5' -ACC 3'</small>	26(173) <small>5' -TTA 3'</small>	26(173) <small>5' -TCT 3'</small>	38(210) <small>5' -gCA 3'</small>	21(159) <small>5' -ACC 3'</small>
			26(173) <small>5' -TTA 3'</small>		26(173) <small>5' -TCT 3'</small>			48(240) <small>5' -CgC 3'</small>	
			26(173) <small>5' -TCT 3'</small>					55(260) <small>5' -gCC 3'</small>	
								55(260) <small>5' -gCA 3'</small>	
3'-primer(s)³		87(356) <small>5' -ggT 3'</small>	86(353) <small>5' -ACg 3'</small>	86(353) <small>5' -gCT 3'</small>	57(266) <small>5' -Cgg 3'</small>	86(353) <small>5' -gCT 3'</small>	86(353) <small>5' -gCT 3'</small>	86(353) <small>5' -gCT 3'</small>	77(327) <small>5' -ACg 3'</small>
			86(353) <small>5' -ACC 3'</small>						
Well No.		88	89	90	91	92	93	94	95
DQB1 allele⁴	ser.⁵								
*050101-0505	5	88							
*060101-0628, 0630-0635	6		89						
*0629	6		89		91				
*020101-0202, 0204,	2			90	91		93		
*0203	2			90			93		
*030101-030104, 0304, 0309, 0310, 0313, 0314, 0316, 0319, 0321, 0322, 0324	3, 7, 8					92		94	
*030201-030204, 0307, 0308, 0311, 0318	3, 8				91		93	94	
*030302, 030303, 0306, 0312, 0315, 0320, 0323, 0325	3, 9						93	94	
*030501, 030503	3, 8				91			94	
*030502, 030504, 0317								94	
*040101-0402	4								95
*0403	4						93		95
DQB1 allele⁴	ser.⁵								
Well No.		88	89	90	91	92	93	94	95

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

Well number 88 contains the primer pair giving rise to the longer, 515 bp, internal positive control band in order to help in the correct orientation of the DQ low resolution typing.

In addition, wells number 91, 92, 93 and 94 contain the primer pair giving rise to the longer, 515 bp, internal positive control band in order to allow kit identification.

²The codon, and in parenthesis the nucleotide, in the 2nd exon, matching the specificity-determining 3'-end of the primer is given. Codon and nucleotide numbering as on the www.ebi.ac.uk/imgt/hla web site. The sequence of the 3 terminal nucleotides of the primer is given. 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 sequence of the DQB1*030301 allele has been shown to be identical to DQB1*030302.

⁵The serological split of the DQB1*0505, DQB1*0606 to 0608 alleles, the DQB1*0610 to 0635, the DQB1*030202-030204, DQB1*030303, DQB1*030502 to 0325 and the DQB1*0403 alleles is not known. In this table we have inferred the serological grouping from the naming of the sequence-defined allele.

Lot No.: **30G**

Lot-specific Information

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CELL LINE VALIDATION SHEET																				
HLA-A low resolution primer set																				
				Lot No.:	Well															
					1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	
	IHC cell line	A*	A*		200855001	200855002	200855003	200855004	200855006	200855007	200855008	200855009	200855010	200855011	200855012	200959313	200855014	200855015	200855016	
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.: **30G**

Lot-specific Information

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CELL LINE VALIDATION SHEET										
HLA-A low resolution primer set										
				Lot No.:	Well					
					16	17	18	19	20	21
					200855017	200855018	200855019	200959320	200855021	200855023
	IHC 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.: **30G**

Lot-specific Information

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CELL LINE VALIDATION SHEET																			
HLA-B low resolution SSP kit																			
			Prod. No.:	Well															
				22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	
				200963348	200959402	200963303	200963304	200963305	200963306	200959407	200959408	200963309	200959410	200959411	200963313	200959414	200959415	200959416	
	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.: **30G**

Lot-specific Information

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CELL LINE VALIDATION SHEET																			
HLA-B low resolution SSP kit																			
			Prod. No.:	Well															
				37	38	39	40	41	42	43	44	45	46	47	48	49	50		
	IHWC cell line	B*		200963317	200959418	200959419	200963320	200959421	200959422	200959423	200959424	200959425	200963327	200959428	200963329	200959431	200963332		
1	9001 SA	*0702		-	-	-	+	-	-	-	+	-	-	+	-	-	-		
2	9280 LK707	*5201	*7301	-	-	-	-	-	-	-	+	-	-	+	-	-	-		
3	9011 E4181324	*52011		-	-	-	-	-	-	-	-	-	-	-	-	-	-		
4	9275 GU373	*1510	*5301	+	-	+	-	-	-	-	-	-	-	-	-	-	-		
5	9009 KAS011	*3701		+	-	-	+	-	-	-	-	-	-	-	+	-	-		
6	9353 SM	*3901	*5101	-	-	-	-	+	-	+	+	-	-	-	-	-	-		
7	9020 QBL	*1801		-	+	-	-	-	-	-	-	-	-	-	-	-	-		
8	9025 DEU	*3501		+	+	-	-	-	-	-	-	-	-	-	-	-	-		
9	9026 YAR	*3801		-	-	-	-	-	+	+	-	-	-	-	-	-	-		
10	9107 LKT3	*5401		-	-	-	-	-	-	-	-	-	-	+	-	-	+		
11	9051 PITOUT	*4403		+	-	-	-	-	-	-	-	-	-	-	+	-	-		
12	9052 DBB	*5701		+	-	-	-	-	-	-	-	-	-	-	-	-	-		
13	9004 JESTHOM	*2705		-	-	-	-	-	-	-	-	-	-	+	-	-	+		
14	9071 OLGA	*1501	*1520	+	-	+	-	-	-	-	-	-	-	-	-	-	-		
15	9075 DKB	*4001		-	-	-	-	-	-	-	+	+	-	-	-	-	-		
16	9037 SWEIG007	*4002		-	-	-	-	-	-	-	-	-	-	-	-	-	-		
17	9282 CTM3953540	*0801	*5501	-	-	-	-	-	-	-	+	-	+	+	-	-	+		
18	9257 32367	*1401	*5601	-	-	-	-	-	-	+	+	-	-	+	-	-	+		
19	9038 BM16	*1801		-	+	-	-	-	-	-	-	-	-	-	-	-	-		
20	9059 SLE005	*4001		-	-	-	-	-	-	-	+	+	-	-	-	-	-		
21	9064 AMALA	*1501		-	-	+	-	-	-	-	-	-	-	-	-	-	-		
22	9056 KOSE	*3503		+	+	-	-	-	-	-	-	-	-	-	-	-	-		
23	9124 IHL	*4002	*5602	-	-	-	-	-	-	-	-	-	-	+	-	-	+		
24	9035 JBUSH	*3801		-	-	-	-	+	+	+	-	-	-	-	-	-	-		
25	9049 IBW9	*1402		-	-	-	-	-	-	+	+	-	-	-	-	-	-		
26	9285 WT49	*5801		+	-	-	-	-	-	-	-	-	-	-	-	-	-		
27	9191 CH1007	*0705	*5101	-	-	-	-	-	-	-	+	-	-	+	-	-	-		
28	9320 BEL5GB	*4402	*4403	+	-	-	-	-	-	-	-	-	-	-	+	-	-		
29	9050 MOU	*4403		+	-	-	-	-	-	-	-	-	-	-	+	-	-		
30	9021 RSH	*4201		-	-	-	-	-	-	-	+	-	+	+	-	-	-		
31	9019 DUCAF	*1801		-	+	-	-	-	-	-	-	-	-	-	-	-	-		
32	9297 HAG	*4102		-	-	-	-	-	-	-	+	-	+	-	-	-	-		
33	9098 MT14B	*4001		-	-	-	-	-	-	-	+	+	-	-	-	-	-		
34	9104 DHIF	*3801		-	-	-	-	+	+	+	-	-	-	-	-	-	-		
35	9302 SSTO	*4402		+	-	-	-	-	-	-	-	-	-	-	+	-	-		
36	9024 KT17	*1501	*3501	+	+	+	-	-	-	-	-	-	-	-	-	-	-		
37	9065 HHKB	*0702		-	-	-	-	-	-	-	+	-	-	+	-	-	-		
38	9099 LZL	*1501		-	-	+	-	-	-	-	-	-	-	-	-	-	-		
39	9315 CML	*0801	*2705	-	-	-	-	-	-	-	+	-	+	+	-	-	+		
40	9134 WHONP199	*1302	*4601	-	-	-	-	-	-	-	-	-	-	+	-	+	-		
41	9055 H0301	*1402		-	-	-	-	-	-	-	+	+	-	-	-	-	-		
42	9066 TAB089	*4601		-	-	-	-	-	-	-	-	-	-	+	-	+	-		
43	9076 T7526	*4601		-	-	-	-	-	-	-	-	-	-	+	-	+	-		
44	9057 TEM	*3801		-	-	-	-	+	+	+	-	-	-	-	-	-	-		
45	9239 SHJO	*4201	*5001	-	-	-	-	-	-	-	+	-	+	+	-	-	-		
46	9013 SCHU	*0702		-	-	-	-	-	-	-	+	-	-	+	-	-	-		
47	9045 TUBO	*5101		-	-	-	-	-	-	-	-	-	-	-	-	-	-		
48	9303 TER-ND	*3501	*4403	+	+	-	-	-	-	-	-	-	-	-	+	-	-		

				Well													
				51	52	53	54	55	56	57	58	59	60	61	62	63	64
Prod. No.:				200959433	200959434	200959435	200959436	200959437	200959438	200963339	200963340	200959441	200959442	200959444	200959445	200959446	200959447
IHC 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	-	-	-	-	-	+	-	-	-	-	+	-	+	+

CELL LINE VALIDATION SHEET																					
DR low resolution primer set																					
				Prod. No.:	Well																
					65	66	67	68	69	70	71	72	73	74	75	76	77	78	79	80	
	IHWC cell line	DRB1			200963401	200963402	200963403	200963404	200963405	200963406	200963407	200963408	200963409	200963410	200963411	200963412	200963413	200963414	200963415	200963416	
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			-	+	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

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Lot-specific Information

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CELL LINE VALIDATION SHEET											
DR low resolution primer set											
				Well							
				81	82	83	84	85	86	87	
				Prod. No.:	200960317	200960318	200963419	200960320	200963421	200960322	200960323
IHWC 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			-	-	-	-	-	-	-

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Lot-specific Information

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CELL LINE VALIDATION SHEET												
DQ low resolution primer set												
				Production No.	Well							
					88	89	90	91	92	93	94	95
					200851201	200851202	200851203	200851204	200844605	200963806	200844607	200963808
	IHWC cell line		DQB1									
1	9001 SA		*0501		+	-	-	-	-	-	-	-
2	9280 LK707		*0601	*0202	-	+	+	+	-	+	-	-
3	9011 E4181324		*0601		-	+	-	-	-	-	-	-
4	9275 GU373		*0201		-	-	+	+	-	+	-	-
5	9009 KAS011		*0502		+	-	-	-	-	-	-	-
6	9353 SM		*0302	*0601	-	+	-	+	-	+	+	-
7	9020 QBL		*0201		-	-	+	+	-	+	-	-
8	9025 DEU		*0301		-	-	-	-	+	-	+	-
9	9026 YAR		*0302		-	-	-	+	-	+	-	-
10	9107 LKT3		*0401		-	-	-	-	-	-	-	+
11	9051 PITOUT		*0202		-	-	+	+	-	+	-	-
12	9052 DBB		*0303		-	-	-	-	-	+	+	-
13	9004 JESTHOM		*0501		+	-	-	-	-	-	-	-
14	9071 OLGA		*0402		-	-	-	-	-	-	-	+
15	9075 DKB		*0303		-	-	-	-	-	+	+	-
16	9037 SWEIG007		*0301		-	-	-	-	+	-	+	-
17	9282 CTM3953540		*0201	*0602	-	+	+	+	-	+	-	-
18	9257 32367		*0602	*0202	-	+	+	+	-	+	-	-
19	9038 BM16		*0301		-	-	-	-	+	-	+	-
20	9059 SLE005		*0604		-	+	-	-	-	-	-	-
21	9064 AMALA		*0301		-	-	-	-	+	-	+	-
22	9056 KOSE		*0503	*0604	+	+	-	-	-	-	-	-
23	9124 IHL		*0503	*0601	+	+	-	-	-	-	-	-
24	9035 JBUSH		*0301		-	-	-	-	+	-	+	-
25	9049 IBW9		*0202		-	-	+	+	-	+	-	-
26	9285 WT49		*0201		-	-	+	+	-	+	-	-
27	9191 CH1007		*0401	*0501	+	-	-	-	-	-	-	+
28	9320 BEL5GB		*0202	*0301	-	-	+	+	+	+	+	-
29	9050 MOU		*0202		-	-	+	+	-	+	-	-
30	9021 RSH		*0402		-	-	-	-	-	-	-	+
31	9019 DUCAF		*0201		-	-	+	+	-	+	-	-
32	9297 HAG		*0301		-	-	-	-	+	-	+	-
33	9098 MT14B		*0302		-	-	-	+	-	+	+	-
34	9104 DHIF		*0301		-	-	-	-	+	-	+	-
35	9302 SSTO		*0305		-	-	-	+	-	-	+	-
36	9024 KT17		*0302		-	-	-	+	-	+	+	-
37	9065 HHKB		*0603		-	+	-	-	-	-	-	-
38	9099 LZL		*0301		-	-	-	-	+	-	+	-
39	9315 CML		*0201	*0301	-	-	+	+	+	+	+	-
40	9134 WHONP199		*0202	*0303	-	-	+	+	-	+	+	-
41	9055 H0301		*0609		-	+	-	-	-	-	-	-
42	9066 TAB089		*0601		-	+	-	-	-	-	-	-
43	9076 T7526		*0303		-	-	-	-	-	+	+	-
44	9057 TEM		*0503		+	-	-	-	-	-	-	-
45	9239 SHJO		*0202		-	-	+	+	-	+	-	-
46	9013 SCHU		*0602		-	+	-	-	-	-	-	-
47	9045 TUBO		*0301		-	-	-	-	+	-	+	-
48	9303 TER-ND		*0501		+	-	-	-	-	-	-	-

CERTIFICATE OF ANALYSIS

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

Product number: 101.708-24 – including *Taq* pol.
Lot number: 30G
Expiry date: 2011-September-01
Number of tests: 24 tests
Number of wells per test: 95 + 1

Well specifications:

Well No.	Production No.	Well No.	Production No.	Well No.	Production No.
1	2008-550-01	9	2008-550-10	17	2008-550-18
2	2008-550-02	10	2008-550-11	18	2008-550-19
3	2008-550-03	11	2008-550-12	19	2009-593-20
4	2008-550-04	12	2009-593-13	20	2008-550-21
5	2008-550-06	13	2008-550-14	21	2008-550-23
6	2008-550-07	14	2008-550-15		
7	2008-550-08	15	2008-550-16		
8	2008-550-09	16	2008-550-17		

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

Additional 5'- and 3'-primers in primer solutions 4 to 7, 11, 14, 16, 19 and 20 were tested by separately adding one 3'-primer, respectively one 5'-primer. Additional 5'-primers in primer solutions 9 were tested by separately adding one 3'-primer. Additional 3'-primers in primer solutions 3, 13, 15, 18 and 21 were tested by separately adding one 5'-primer. One or two primers in primer solutions 2, 3, 14, 17 and 18 were not possible to test.

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

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

Additional 5'-primers and 3'-primers in primer solutions 24, 34, 39, 48, 49 and 58 were

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tested by separately adding one additional 3'-primer, respectively one additional 5'-primer. Additional 5'-primers in primer solutions 22 and 41 were tested by separately adding one additional 3'-primer. Additional 3'-primers in primer solutions 23, 33 and 53 were tested by separately adding one additional 5'-primer.

Well No.	Production No.	Well No.	Production No.	Well No.	Production No.
65	2009-634-01	73	2009-603-09	81	2009-603-17
66	2009-603-02	74	2009-603-10	82	2009-603-41
67	2009-634-03	75	2009-603-11	83	2009-634-19
68	2009-603-04	76	2009-603-12	84	2009-603-20
69	2009-634-05	77	2009-603-13	85	2009-634-21
70	2009-603-06	78	2009-603-14	86	2009-603-22
71	2009-603-07	79	2009-603-15	87	2009-603-23
72	2009-634-08	80	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'-primers and 3'-primers in primer solutions 72, 73, 75 and 82 were tested by separately adding one additional 3'-primer, respectively one additional 5'-primer. Additional 5'-primers in primer solutions 70, 79 and 80 were tested by separately adding one additional 3'-primer. Additional 3'-primers in primer solutions 65, 67, 74, 76 and 84 were tested by separately adding one additional 5'-primer.

One, two or three of the primers in primer solutions 67, 68, 72 to 74, 77 and 80 were not possible to test.

Well No.	Production No.
88	2008-512-01
89	2008-512-02
90	2008-512-03
91	2008-512-04
92	2009-638-05
93	2008-512-06
94	2009-638-07
95	2008-512-08

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

One additional 5'-primer in primer solutions 89 and 91 were tested by separately adding one additional 3'-primer.

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: 2011-February-04

Approved by

Quality Control, Supervisor

Lot No.: **30G**

Lot-specific Information

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Declaration of Conformity

Product name: *Olerup* SSP® HLA-A-B-DR-DQ SSP Combi Tray
Product number: 101.708-24
Lot number: 30G

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

Manufacturer: *Olerup* SSP AB
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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.

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

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Saltsjöbaden, Sweden
2011-February-04

Olle Olerup
Managing Director

Lot No.: **30G**

Lot-specific Information

www.olerup-ssp.com

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