

Olerup SSP™ HLA-A-B-DR SSP Combi Tray

Product number: 101.701-24/06 – licensed for PCR
101.701-24u/06u – not licensed for PCR
Lot number: X84
Expiry date: 2009-May-01
Number of tests: 24 tests – Product No. 101.701-24
6 tests – Product No. 101.701-06
Number of tubes per test: 24; 48; 23 +1
Storage - pre-aliquoted primers: dark at -20°C
- PCR Master Mix: -20°C

This Product Description is only valid for Lot No. X84.

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

The **HLA-A low resolution** specificity and interpretation tables have been updated for the HLA-A alleles described since the previous Olerup SSP™ HLA-A-B-DR SSP Combi Tray lot was made (**Lot No. V99**).

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

Tube	5'-primer	3'-primer	rationale
11	-	Modified	Increased yield of specific PCR product.

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The **HLA-B low resolution** specificity and interpretation tables have been updated for the HLA-B alleles described since the previous *Olerup* SSP™ HLA-A-B-DR SSP Combi Tray lot was made (**Lot No. V99**).

One or both primers of the tubes detailed below have been exchanged compared to the previous lot.

Tube	5'-primer	3'-primer	Rationale
44	-	-	Changed to the 800 base pair internal positive control primer pair to decrease primer oligomer formation.
62	-	Modified	Increased yield of specific PCR product from the B*27 alleles.
63	39	Added	Added
68	Modified	-	Increased specificity of specific primer pair.

The **DR low resolution** specificity and interpretation tables have been updated for the HLA-DRB alleles described since the previous *Olerup* SSP™ HLA-A-B-DR SSP Combi Tray lot was made (**Lot No. V99**).

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

Tube	5'-primer	3'-primer	rationale
73	Modified	Added	Increased yield of specific PCR product. Primer pair added for the DRB1*0115 allele.
75	-	Exchanged	New primer mix will amplify all DRB1*15 alleles including DRB1*1521.
76	-	Exchanged	New primer pair will amplify all DRB1*16 alleles and not the DRB1*1521 allele.
81	-	Added	Primer pair added for the DRB1*0711 allele.
83	Exchanged	-	Increased yield of specific PCR product.
86	-	Added	Primer pair added for the DRB1*1214 allele.

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

PCR product sizes range from 75 to 430 base pairs.

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 or the 2nd intron, matching the specificity-determining 3'-end of the primer is given. Nucleotide numbering as in *Tissue Antigens* 1998, 51:II, 417-466. 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, matching the specificity-determining 3'-end of the primer is given in the anti-sense direction. Nucleotide numbering as in *Tissue Antigens* 1998, 51:II, 417-466. The sequence of the 3 terminal nucleotides of the primer is given.

PRODUCT DESCRIPTION

HLA-A-B-DR SSP Combi Tray

CONTENT

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

The primer set contains 5'- and 3'-primers for grouping the B*0702 to B*8301 alleles into the corresponding serological groups B7 to B81 as well as primer pairs for recognizing the Bw4 and Bw6 sequence motifs.

The primer set contains 5'- and 3'-primers for grouping the DRB1*0101 to DRB1*1001 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 solutions are pre-aliquoted into 0.2 ml PCR tubes. Each tube in the set contains a dried primer solution consisting of a specific primer mix, i.e. allele- and group-specific primers as well as a **control primer pair** matching non-allelic sequences.

PCR Master Mix complete with Taq, Taq polymerase, nucleotides, buffer, glycerol and cresol red, as well as PCR lids are included in the licensed kit.

PCR Master Mix without Taq, nucleotides, buffer, glycerol and cresol red, as well as PCR lids are included in the unlicensed kit.

24, 48, 23 + 1 PCR reactions with a reaction volume of 10 µl are performed per sample.

Note: The pellets in the tubes may vary in form and colour. This does not affect the performance of the product.

PLATE LAYOUT

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

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

Wells 1 to 24 – HLA-A low resolution primers.

Wells 25 to 72 – HLA-B low resolution primers.

Wells 73 to 95 – DR low resolution primers.

Well 96 – Negative Control.

The 96 well PCR plate is marked with 'A-B-DR X84'.

Well No. 1 is marked with '1'.

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

INTERPRETATION

Only HLA-A alleles will be amplified by the 24 tubes of the HLA-A low resolution primer set, **tubes 1 to 24**. Thus, the interpretation of HLA-A low resolution is not influenced by other HLA Class I genes.

Only HLA-B alleles will be amplified by the 48 tubes of the HLA-B low resolution, primer set, **tubes 25 to 72**, except that the primer pair in well 27 will amplify the Cw*0305, Cw*0325 and Cw*0327 alleles and the primer pair in well 32 will amplify the Cw*0746 allele.. Thus, the interpretation of HLA-B low resolution typings is only influenced by the Cw*0305, Cw*0325 and Cw*0327 alleles and not by other alleles of other HLA class I genes.

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

UNIQUELY IDENTIFIED ALLELES

All the HLA-A alleles¹, i.e. **A*0101 to A*8001**, recognized by the HLA Nomenclature Committee in April 2007² will be amplified by the primers in the HLA-A low resolution primer set, **tubes 1 to 24**. The HLA-A alleles will be grouped into their corresponding serological specificities³.

All the HLA-B alleles⁴, i.e. **B*0702 to B*8301**, recognized by the HLA Nomenclature Committee in October 2006² will be amplified by the primers in the HLA-B low resolution primer set, **tubes 25 to 72**. The HLA-B alleles will be grouped into their corresponding serological specificities⁵.

All the HLA-DRB1⁶, -DRB3, -DRB4⁷ and -DRB5 alleles, i.e. **DRB1*0101 to 1001, DRB3*010101 to DRB3*0303, DRB4*010101 to DRB4*0107, DRB5*010101 to DRB5*0205**, recognized by the HLA Nomenclature Committee in October 2006² will be amplified by the primers in the DR low resolution primer set, **tubes 73 to 95**. The HLA-DRB alleles will be grouped into their corresponding serological specificities⁸.

¹The nucleotide sequences of the A*9205 and A*9216 alleles are not yet retrievable from the GenBank or EMBL data banks.

²**Nomenclature for factors of the HLA system, 1998.** *Tissue Antigens* 1999; **53**: 407-446.

HLA-A alleles listed on the IMGT/HLA web page 2007-April-12, release 2.17.0, www.ebi.ac.uk/imgt/hla.

³The 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*2424 and A*2465 alleles will give rise to identical amplification patterns. These three alleles can be separated by the respective high resolution SSP primer sets.

⁴The nucleotide sequences of the B*0755, B*1318, B*3713, B*4075 and B*5412 alleles are not yet retrievable from the GenBank or EMBL data banks.

⁵The resolution has been updated to fulfill the NMDP medium resolution confirmatory typing requirements effective from February 1st 2001.

DNA-based HLA-B typing resolution required:

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B*07xx, B*08xx, B*13xx, B*14xx, B*18xx, B*27xx, B*1522, B*35xx, B*37xx, B*38xx, B*39xx,
B*4005, B*41xx, B*42xx, B*44xx, B*45xx, B*46xx, B*47xx, B*48xx, B*49xx, B*50xx, B*51xx,
B*52xx, B*53xx, B*54xx, B*55xx, B*56xx, B*57xx, B*58xx, B*59xx, B*67xx, B*73xx, B*78xx,
B*81xx, B*82xx,

B*40EJD^a 4001, 4007, 4010, 4012, 4014, 4015, 4016

B*40EJB^b 4002, 4003, 4004, 4006, 4008, 4009, 4011, 4013,
4018, 4019, 4020

B*15EJA^c 1501, 1504, 1505, 1506, 1507, 1520, 1524, 1525,
1526N, 1527, 1528, 1530, 1532, 1533, 1534, 1535,
1536, 1538, 1539, 1540, 1543, 1545

B*15AHM^d 1516, 1517

B*15EHZ^e 1503, 1509, 1510, 1518, 1523, 1529, 1537, 1547

B*15CYP^f 1502, 1508, 1511, 1515, 1521, 1531, 1544

B*15AND^g 1512, 1514, 1519

B*1513^h

^aB60 serologic equivalent cluster.

^bB61 serologic equivalent cluster.

^cB62 serologic equivalent cluster.

^dB63 serologic equivalent cluster.

^eB70 serologic equivalent cluster.

^fB75 serologic equivalent cluster.

^gB76 serologic equivalent cluster.

^hB77 serologic equivalent cluster.

The B*0826 and 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*5504, B*5508, B*5513 and B*5615 and B*5619N give rise to identical amplification patterns with the HLA-B low resolution primer set. These alleles can be separated by the respective high resolution primer sets.

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

⁶The nucleotide sequences of the DRB1*0334, DRB1*110404, DRB1*1161, DRB1*1163 and DRB1*1377 alleles are not yet retrievable from the GenBank or EMBL data banks.

⁷The DRB4*0201N and DRB4*0301N null alleles will not be amplified by the DR low resolution primer set.

⁸The 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.

RESOLUTION IN HOMO- AND HETEROZYGOTES

The ambiguous HLA-A homo- and heterozygous combinations of allele groups based on the two first digits of the allele designation are available in the Score™ interpretation software. (In most cases these ambiguities can be resolved by the Olerup SSP™ HLA-A high resolution SSP sets.)

The ambiguous HLA-B homo- and heterozygous combinations of allele groups based on the two first digits of the allele designation are available in the Score™ interpretation software. (In most cases these ambiguities can be resolved by the Olerup SSP™ HLA-B high resolution SSP sets.)

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The ambiguous HLA-DR homo- and heterozygous combinations of allele groups based on the two first digits of the allele designation are available in the Score™ interpretation software. (In most cases these ambiguities can be resolved by the Olerup SSP™ HLA-DRB1 high resolution SSP sets.)

Licenses

101.701-24/06 – licensed for PCR.

Notice to purchaser: Limited License.

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101.701-24u/06u – not licensed for PCR.

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101.701-24/06 and 101.701-24u/06u

These products use ARMSTM technology and is sold under license from Zeneca Limited. ARMS is the subject of European Patent No. 0332435, US Patent No. 5595890 and corresponding world-wide patents. ARMS is a trademark of Zeneca Limited.

GUARANTEE

Olerup SSP AB guarantees that the primers in the HLA-A-B-DR SSP Combi Tray have the specificities given in the Specificity and Interpretation Tables of the product insert and in the GenoVision version of the HELMBERG-SCORETM software.

When stored at –20°C, the dried primers are stable for 22 months from the date of manufacture.

When stored at –20°C, the PCR Master Mix complete with *Taq* and the PCR Master Mix without *Taq* are stable for 24 months from the date of manufacture. The kit is shipped at ambient temperature.

PROTOCOL

DNA EXTRACTION

Extracted, highly pure DNA is needed for SSP typings. We recommend isolation of DNA using GenoPrep B200 or GenoPrep B350 cartridges on the GenoM™-6 robotic workstation (GenoVision Europe Tel: +43 1 710 15 00 or GenoVision Inc. USA Tel: +1 610 430 88 41; <http://www.genovision.com>). Using GenoM™-6-extracted DNA ACD, EDTA and heparinised blood can be used as starting material. Because of its high purity, GenoM™-6-extracted DNA can be diluted when used in combination with Olerup SSP™ products. The recommended DNA concentration is 15 ng/μl.

Alternatively – BUT DO NOT USE HEPARINISED BLOOD WITH THESE METHODS - the DNA can be extracted using trimethylammoniumbromide salts (DTAB/CTAB) or by salting out. Dissolve the extracted DNA in dH₂O.

IMPORTANT:

Optimal DNA concentration using: GenoM™-6-extracted DNA, 15 ng/□l.

DNA extracted by other methods, 30 ng/□l.

Concentration exceeding 50 ~~ng~~ will increase the risk for nonspecific amplifications and weak extra bands, especially for HLA Class I high resolution SSP typings.

PCR AMPLIFICATION

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For one HLA-A-B-DR typing, begin by adding to well No. 96, i.e. the well with the negative control primer pairs:

7 μl dH₂O

3 μl PCR Master Mix complete with *Taq*

then add at room temperature to the provided 1.5 ml tube containing 312 – 3 = 309 μl PCR Master Mix complete with *Taq*:

103 x 2 μl = 206 μl DNA (30 ng/μl)

103 x 5 μl = 515 μl dH₂O

Mix well, dispense 10 μl of the DNA-PCR Master Mix-H₂O mixture into each of wells 1 to 95 of an HLA-A-B-DR typing. **Well No. 1 of the 96 well PCR plate is marked with '1'**. Close the 96 well PCR plate with the provided lids.

101.701-24u/06u – not licensed for PCR

For one HLA-A-B-DR typing, begin by adding at room temperature to the provided 1.5 ml tube containing 312 μl of PCR Master Mix without *Taq*:

8.3 μl *Taq* polymerase (5 units/μl)

Mix well, dispense 3 μl of the PCR Master Mix-*Taq* mixture from the 1.5 ml tube into well No. 96, i.e. the well with the negative control primer pairs. Then add 7 μl dH₂O to well 96.

Then add at room temperature to the provided 1.5 ml tube containing 312 + 8.3 – 3 = 317.3 μl PCR Master Mix-*Taq* mixture:

$103 \times 2 \mu\text{l} = 206 \mu\text{l}$ DNA (30 ng/ μl)

$103 \times 5 - 8.3 \mu\text{l} = 506.7 \mu\text{l}$ dH₂O

Mix well, dispense 10 μl of the DNA-PCR Master Mix-H₂O mixture into each of wells 1 to 95 of an HLA-A-B-DR typing. **Well No. 1 of the 96 well PCR plate is marked with '1'**. Close the 96 well PCR plate with the provided lids.

Use a 96 well thermal cycler with a heated lid. The temperature gradient across the heating block should be $< 1^{\circ}\text{C}$.

PCR cycling parameters:

1. 1 cycle	94 ^o C	2 min	denaturation
2. 10 cycles	94 ^o C	10 sec.	denaturation
	65 ^o C	60 sec.	annealing and extension
3. 20 cycles	94 ^o C	10 sec.	denaturation
	61 ^o C	50 sec.	annealing
	72 ^o C	30 sec.	extension

The same PCR cycling parameters are used for all the <i>Olerup</i> SSP kits.
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AGAROSE GEL ELECTROPHORESIS

Prepare a 2% (w/v) agarose gel in 0.5 x TBE buffer. Dissolve the agarose by boiling in a microwave oven. Let the gel solution cool to 60^oC. Stain the gel prior to casting with ethidium bromide (10 mg/ml), 5 μl per 100 ml gel solution. For maximal ease of handling use our ethidium bromide dropper bottles (Product No. 103.301-10), 1 drop of ethidium bromide solution per 50-75 ml of gel. **Note:** Ethidium bromide is a powerful carcinogen.

Load the PCR products, preferably using an 8-channel pipette. Load a DNA size marker (100 base pair ladder, Product No. 103.201-100) in one well per row.

Run the gel in 0.5 x TBE buffer, without re-circulation of the buffer, for 15-20 minutes at 8-10 V/cm.

DOCUMENTATION AND INTERPRETATION

Put the gel on a UV transilluminator and document by photography.

Record the presence and absence of specific PCR products. The relative lengths of the specific PCR products are helpful in the interpretation of the results.

Record the presence and relative lengths of the internal positive control bands. The differently sized control bands will help in the correct orientation of the typing as well as in kit identification.

Lanes without either control band or specific PCR products should be repeated.

Interpret the typings with the ***lot-specific Interpretation and Specificity Tables***.

INTERPRETATION SOFTWARE

The interpretation software (Product No. 110.101) can be helpful in the interpretation of the typings.

PCR MASTER MIXES

The PCR Master Mix complete with *Taq* contains:

<i>Taq</i> polymerase	0.4 unit per 10 µl SSP reaction
nucleotides	final concentration of each dNTP is 200 µM
PCR buffer	final concentrations: 50 mM KCl, 1.5 mM MgCl ₂ , 10 mM Tris-HCl pH 8.3, 0.001% w/v gelatin
glycerol	final concentration of glycerol is 5%
cresol red	final concentration of cresol red is 100 µg/ml

The same PCR Master Mix complete with *Taq* is used for all the licensed *Olerup* SSP kits.

The PCR Master Mix without *Taq* contains:

nucleotides	final concentration of each dNTP is 200 µM
PCR buffer	final concentrations: 50 mM KCl, 1.5 mM MgCl ₂ , 10 mM Tris-HCl pH 8.3, 0.001% w/v gelatin
glycerol	final concentration of glycerol is 5%
cresol red	final concentration of cresol red is 100 µg/ml

The same PCR Master Mix without *Taq* is used for all the unlicensed *Olerup* SSP kits.

The PCR Master Mix complete with *Taq* and the PCR Master Mix without *Taq* can be shipped at ambient temperature.

When stored at –20°C, the PCR Master Mix complete with *Taq* and the PCR Master Mix without *Taq* are stable for 24 months from the date of manufacture.

Vials with the PCR Master Mixes can be kept at +4°C for 4 weeks, but the PCR Master Mixes are then no longer stable for 24 months.

SPECIFICITY TABLE

HLA-A low resolution primer set

Specificities and sizes of the PCR products of the 24 primer mixes used for HLA-A low resolution SSP typing

Primer Mix	Approx. size of spec. PCR product ¹	Size of control band ²	HLA-A serology ³	Amplified HLA-A alleles ^{4,9}
1	145 bp	800 bp	A1, A36	01010101-0104N, 0106-0125, 3601-3604
2⁶	135, 200, 255 bp	1070 bp	A2	02010101-0222, 0224-023501, 0236-0247, 0249-0297, 0299, 9201-9204, 9206-9215
3⁷	205, 235 bp	1070 bp	A1, A3, A34, A36	0112, 0119, 0121, 03010101-0317, 0319-0329, 1125, 3204, 3402-3404, 3407, 3408, 3602
4⁷	190 bp	800 bp	A1, A2, A3, A11, A26, A30, A36	01010101-0104N, 0106, 0107, 0109-0111N, 0113, 0116N-0118N, 0120-0125, 0278, 0312, 0318, 110101-1130, 2619, 3008, 3604
5	160, 535 bp	800 bp	A23, A24, A31, A32	2301-2315, 24020101-2411N, 2413-2415, 2417-2476, 3108, 3205, 3213
6	175, 220 bp	800 bp	A23, A24, A26, A29	2301-2315, 2405, 2424, 2465, 2633, 2907
7	175, 205 bp	1070 bp	A2, A23, A24, A26	021701-021702 ^{weakly} , 2314, 24020101-2411N, 2413, 2417-2450, 2454-2456, 2458-2463, 2465-2476, 2616
8	165, 200 bp	800 bp	A2, A3, A11, A25, A26, A32, A34, A66, A68, A69	0255, 0324, 1110, 250101-2506, 260101-2606, 2608-2615, 2617, 2618, 2620-2634, 3215, 3401-3408, 6601-6606, 680101-6838, 6901
9⁵	75 bp	800 bp	A25, A32	250101-2506, 320101-3202, 3204, 3206-3215
10⁵	85 bp	1070 bp	A26	260101-2602, 2604, 260701-2618, 2620, 2622-2629, 2632-2634

11^{5,7}	80, 215 bp	800 bp	A1, A3, A11, A24, A26, A31, A34, A66	0112, 0113, 0119, 0310, 110101-1130, 2419, 2444, 2451, 2603, 2606, 2621, 3103, 3401-3408, 6601, 6604-6606
12	185 bp	800 bp	A11, A25, A26, A31, A34, A43, A66	1111, 2506, 2609, 3103, 3104, 3401-3408, 4301, 6602, 6603
13⁷	175, 225 bp	1070 bp	A1, A2, A3, A25, A26, A34, A43, A66	0113, 0234-023502, 0256, 0262, 9203, 03010101- 0307, 0309-0311N, 0313- 0329, 250101-2505, 260101-260105, 2602 ^{weakly} , 2603, 2605- 2608, 2610-2633, 3408, 4301, 6601, 6604-6606
14	200, 240 bp	1070 bp	A29	29010101-2916
15⁵	90 bp	1070 bp	A30	300101-3004, 3006-3021
16	180, 210 bp	1070 bp	A29, A31	2914, 310102-3117
17	180 bp	1070 bp	A29, A32	2913, 320101-3203, 3205- 3215
18	200 bp	1070 bp	A33, A68	3301, 330301-3310, 6829
19	160, 200 bp	800 bp	A74	7401-7412N
20	155, 240 bp	800 bp	A2, A25, A30, A68	0210, 0234-023502, 0239, 0246, 0248, 0250, 0252, 0256, 0262, 0270, 0273, 0278, 0293, 0295, 9203, 9210, 9214, 2505, 3008, 680101-6838
21	240, 375 bp	800 bp	A2, A26, A68, A69	0255, 2622, 6829, 6901
22^{5,8}	85, 240 bp	800 bp	A2, A30, A36	0234-023502, 0246, 0248, 0256, 0262, 0270, 0278, 9203, 3008, 3601-3604
23⁵	75, 160 bp	800 bp	A2, A26, A68, A80	0255, 2603, 2605, 2606, 2621, 2630, 2633, 6805, 6815, 6820, 8001
24	360 bp	1070 bp	A1, A11, A36, A74, A80	01010101-0104N, 0106, 0108-0125, 110101-1111, 1113-1117, 1119-1130, 3601-3604, 7410, 8001

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

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

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

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 tubes, or a band of 800 base pairs, for some tubes.

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

PLEASE NOTE: All the SSP kits, except the B*37, B*41, B*42, B*46, B*47, B*48, B*49, B*50, B*53, B*67, B*78, B*81 and B*82 kits and the Cw*01, Cw*02, Cw*08, Cw*12, Cw*14, Cw*15, Cw*16, Cw*17 and Cw*18 kits, from *Olerup* SSP AB can be uniquely identified by the number of tubes and the kit-specific pattern of the two differently sized control bands.

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

³The serological reactivity of all HLA-A alleles is not known. In this table we used the information published in *Tissue Antigens* 1999: **54**: 409-437, also available at the www.worldmarrow.org web site and also inferred the serological grouping from the naming of the sequence-defined allele.

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

The nucleotide sequences of the A*9205 and A*9216 alleles are not yet retrievable from the GenBank or EMBL data banks.

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

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

⁷Primer mixes 3, 4, 11 and 13 may give rise to nonspecific amplifications.

⁸Primer mix 22 might faintly amplify most A*11 alleles.

⁹The 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*2424 and A*2465 alleles will give rise to identical amplification patterns. These four alleles can be separated by the respective high resolution SSP primer sets.

SPECIFICITY TABLE

HLA-B low resolution primer set

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

Pri-mer Mix	Approx. size of spec. PCR product ¹	Size of control band ²	HLA-B serol. ³	Amplified HLA-B alleles ⁴
25^{5,6}	110 bp	800 bp	7, 37, 40, 41, 42, 48	070201-0718, 0720-0732, 0734-0739, 0741-0747, 0749N, 0750, 0752, 0754, 3707, 4015, 4016, 4023, 4032, 4108, 420501-420502, 4805, 4808, 4815
26 27^{6,8}	215 bp 140, 235 bp	1070 bp 1070 bp	8 7, 8, 13, 15, 35, 4005, 44	080101-0825, 0827-0833, 4449 0720, 0724, 0821, 0825, 1301-1304, 1306-1308, 1310-1317, 1507, 1536, 1545, 1555, 1568, 1589, 9526, 3505, 3516, 3517, 3522, 3530, 3551, 3558, 3572, 4005, 4071, 4408, Cw*0305, Cw*0325, Cw*0327
28^{6,8}	130, 265 bp	1070 bp	13, 14, 15, 35, 40, 41, 44, 45, 47, 49, 50	1301-1304, 1306-1313, 1315-1317, 1401-1404, 1407N, 1546, 1553, 9506, 3547, 3563, 400101-400105, 4007, 4010, 401401-4016, 4022N, 4023, 4025, 4030-4034, 4036, 4038, 4042, 4043, 4045, 4047-4049, 4051-4055, 4058-4063, 4065-4067, 4069, 4072, 4073, 4101-4108, 44020101-4405, 4409-4439, 4441-4443, 4445-4453, 4501-4507, 47010101-4705, 4901, 4902, 4904, 4905, 5001, 5002, 5004
29⁹	185, 235 bp	1070 bp	14, 16, 37, 38, 39, 47, 64, 67	1401, 1407N, 2701-270402, 270502-2706, 2708-2710, 2712, 2713, 2716-2718, 2720, 2723, 2726, 2727, 2729, 2731, 2735-2737, 3702, 380101-3803, 3807-3816, 39010101-39010102L, 390103-390201, 3903, 3905-390602, 3907 [?] , 3908, 3909, 3911, 3914, 3915, 3918, 3922, 3924-

30⁹	185 bp	800 bp	14, 35, 38, 39, 65	3941, 4704, 4705, 670101 140201-140602, 3526, 3805, 3904, 3907 ²
31	290 bp	1070 bp	15, 62, 63, 75, 76, 77, 46	15010101-150103, 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, 1568, 1570, 1571, 1573, 1575-1579N, 1581-1589, 1592, 1594N, 1596, 1597, 9501, 9502, 9504-9507, 9509-9513, 9516-9518, 9520- 9522, 9525, 9526, 9528, 9529, 460101-4610
32	165, 220, 330 bp	1070 bp	8, 15, 37, 40, 41, 42, 44, 45, 51, 56, 57, 70, 71, 72	080101-0805, 0808N-0812, 0815- 0819N, 0821-0824, 0826, 0827, 0829-0833, 1503, 1509, 1510, 1518, 1523, 1529, 1537, 1546, 1547, 1549, 1551-1554, 1561, 1562, 1564, 1568, 1569, 1572, 1574, 1580, 1583, 1590, 1591, 1593, 1598, 1599, 9503, 9506, 9508, 9514, 9515, 9519, 9523, 9524, 9527, 3712, 4012, 4101- 4103, 4105-4108, 4201, 4202, 4204-4208, 4414, 4415, 4418, 4420, 4501-4507, 5108, 5120, 5136, 5144N, 5613, 5709, 8201, 8202, Cw*0746
33^{10,11}	165, 390 bp	800 bp	15, 40, 51, 52, 56, 58, 62, 63, 70, 78	150102, 1509, 1516-151702, 1567, 1595, 350402, 4026, 4028, 510101-510103, 510105-5109, 5111N, 5112, 511302, 5114, 5117-5120, 5122, 5123, 5126- 5130, 5132, 5133, 5137-5141N, 5143, 5144N, 5146-5148, 520101- 5207, 5209-5211, 560501-5606, 5808, 7801-7805
34⁹	180, 395 bp	800 bp	13, 15, 40, 55, 62, 70, 71, 72, 75	1301-130204, 1307N-1309, 1311, 1314-1317, 1509, 1510, 1518, 1521, 1523, 1537, 1544, 1551, 1552, 1566, 1572, 1580, 1590, 1593, 1599, 9508, 9514, 9515, 9519, 9524, 4048, 5522, 5524
35^{5,6}	105, 195	1070 bp	7, 8, 15, 27,	0727, 0750, 0804, 0817, 1503,

	bp		38, 39, 40, 44, 45, 48, 72	1547, 1549, 1554, 1561, 1562, 1564, 1568, 1569, 1591, 1598, 9503, 9523, 9527, 2718, 2729, 3803, 390201-390202, 3908, 391301-391302, 3923, 3939, 4012, 4046, 4410, 4415, 4418, 4440, 4444, 4501, 4505-4507, 480101-4805, 4807-4816, 5002, 5518, 8201, 8202
36	275 bp	1070 bp	7, 8, 13, 15, 18, 35, 39, 40, 44, 46, 48, 53, 55, 56, 57, 58, 62, 63, 70, 71, 72, 75, 76, 77	0709, 0711, 0717, 0828, 1304, 1310, 15010101-1508, 151101- 1516, 1518-1521, 1523-1529, 1531-1536, 1538-1540, 1543, 1544, 1546, 1547, 1549-1557, 1560-1562, 1564-1572, 1574- 1576, 1578-1582, 1584, 1585, 1587-1589, 1591-1598, 9501- 9529, 180101-1815, 1817N-1825, 350101-350106, 3505, 3507- 350802, 3510, 3511, 351401- 3517, 3519-3521, 3523-3530, 3532, 3535, 3537, 3540N-3543, 3545-3554, 3557, 3558, 3561- 3564, 3566-3569, 3571-3573, 3907, 4003, 4020, 4038, 4052, 4059, 4060, 4209, 4417, 4443, 460101-4610, 4802, 4814, 4904, 4905, 5137, 5145, 530101-5303, 5305, 5306, 5308-5312, 5406, 5409, 5514, 5523, 5603, 5609, 5618, 570101-570103, 5706, 5708, 5710, 5711, 5801, 5802, 5804-5807, 5809-5815
37	195 bp	1070 bp	15, 35, 37, 44, 58, 76	1512, 1514, 1519, 1591, 3545, 3571, 370101-3709, 3712, 4417, 4443, 5807
38⁶	105, 435	1070 bp	7, 15, 41, 42, 59, 62, 63, 77	0704, 0725, 1513, 1516-151702, 1523, 1524, 1567, 1587, 1595, 4108, 420501-420502
39⁶	115 bp	1070 bp	18	180101-1815, 1817N-1826
40⁶	80 bp	1070 bp	27, 40, 44	2701-270402, 270502-2721, 2723-2737, 4046, 4440, 4444
41	150 bp	1070 bp	13, 15, 27, 35, 37, 40, 44, 47, 48, 51, 53, 55, 56, 57, 58,	1301, 1306, 1307N, 1312, 1313, 1317, 1502, 1513, 1520, 1521, 1525, 1536, 1544, 1562, 1577, 1580, 1585, 1588, 1589, 9506, 9512, 9521, 1822, 2719, 2730,

			62, 75, 77	350101-350402, 3506-350802, 3510-3517, 3519-3521, 3523-3530, 3533-3536, 3538-3542, 3545-3550, 3552, 3554-3557, 3559, 3561-3563, 3565Q, 3569-3571, 3573, 3574, 370101-370104, 3703N-3706, 3708, 3710, 3711, 4028, 44020101-4414, 4416, 4417, 4419N, 4421-4430, 4432-4440, 4442-4446, 4448-4452N, 4802, 5104, 5142, 5146, 530101-5312, 5514, 5609, 5611, 5612, 570101-5710, 5712, 5801, 5804, 5805, 5809-5815, 8301
42⁶	135 bp	1070 bp	18, 35, 37, 39, 56, 78	0832, 180101-1808, 1810-1815, 1817N-1826, 350101-3518, 3520-3524, 3528-3545, 3548, 3550-3555, 3557-3562, 3564-3575, 3711, 3919, 5606, 7801-7805
43^{6,11}	245, 400 bp	1070 bp	15, 62, 63, 70, 71, 72, 75, 76, 77, 40, 44	15010101-1521, 1523-1540, 1542-1558, 1560-1599, 9501-9529, 4012, 4410, 8201, 8202
44^{5,6,11}	205 bp	800 bp	7, 8, 15, 18, 37, 38	0727, 0802, 9515, 1809, 370101-3704, 3705 ^{weakly} , 3706-3710, 3712, 380201-3804, 3808, 3815
45	170 bp	800 bp	15, 35, 38, 39, 67	1569, 3535, 380101-3809, 3811-3816, 39010101-39010102L, 390103-3920, 3922-3924, 3926-3929, 3931, 3935, 3937-3941, 670101-6702
46⁶	110 bp	1070 bp	38	380101-3803, 3805, 3808-3816
47	400 bp	1070 bp	14, 38, 39, 64, 65	1401-1407N, 380101-380202, 3804, 3805, 3808-3816, 39010101-39010102L, 390103-390104, 3903-3907, 3909, 3911, 3912, 3914, 3915, 3918, 3919, 3922, 3924-3938Q, 3940N, 3941
48	430 bp	1070 bp	7, 8, 14, 39, 40, 41, 42, 45, 48, 50, 60, 64, 65, 67, 73	070201-0726, 0728-0735, 0737, 0739-0754, 080101-080104, 0804-0833, 1401-1407N, 39010101-39010102L, 390103-3920, 3922-3941, 400101-400105, 4007, 4009-4011 [?] , 401401-4016 [?] , 4018 [?] , 4021 [?] , 4022N [?] , 4023, 4024-4038 [?] , 4040 [?] , 4042-4046 [?] , 4048-4050 [?] , 4051, 4052-4058 [?] , 4059, 4060, 4061-

				4069 [?] , 4071-4074 [?] , 4101-4108, 4201, 4202, 4204-4209, 4501- 4507, 480101-4816, 5001, 5002, 5004, 670101-6702, 7301, 8102
49 ^{11,12}	175 bp	1070 bp	15, 40, 44, 48, 60	9516, 9524, 400101-400105, 4007, 4010, 4012, 4021-4023, 4025, 4033, 4036, 4038, 4042, 4043, 4046-4049, 4051, 4052, 4054, 4055, 4060-4063, 4065- 4067, 4069, 4073, 4074, 4431, 4606, 480301-480302
50 ⁶	130 bp	1070 bp	40, 61	400201-400602, 4008, 4009, 4011, 4013, 4018-4020, 4024, 4026-4029, 4035, 4037, 4039, 4040, 4044, 4050, 4056, 4057, 4064, 4068, 4070, 4071, 4074
51 ⁶	110 bp	1070 bp	7, 8, 41, 42, 55	0704, 0719, 0725, 080101-0805, 0807-0812, 0814-0819N, 0821- 0824, 0826-0833, 4101-4108, 4201, 4202, 4204-4207, 4209, 5520
52	325 bp	1070 bp	7, 15, 27, 42, 45, 46, 54, 55, 56, 67, 73, 81	070201-070204, 0704-0707, 0709-0712, 0713 ^{weakly} , 0714, 0715 ^{weakly} , 0717-0726, 0728-0731, 0733-0736, 0739-0749N, 0751- 0754, 1576, 9501, 2701-270402, 270502-2711, 2713-2715, 2717, 2719-2721, 2724-2728, 2730- 2737, 4201, 4202, 4204-4206, 4208, 4209, 4506, 460101- 460102, 4602 ^{weakly} , 4603-4610, 5401-5411, 550101-5505, 5507- 5517, 5519-5526, 5601-5616, 5618-5620, 670101-670102, 6702 ^{weakly} , 7301, 8101, 8102, 8201, 8202, 8301
53 ^{6,13}	110, 195, 225, 260 bp	1070 bp	35, 37, 44, 47, 51, 57	3538, 3545, 3571, 370101- 370104, 3703N-3706, 3708, 3710- 3712, 44020101-4414, 4416, 4417, 4419N-4436, 4438-4453, 5142, 5707, 5709, 8301
54	215 bp	800 bp	8, 12, 15, 41, 42, 44, 45, 49, 51, 52, 53, 56, 58	0809, 1583, 4101, 4105-4107, 4204, 4406, 4415, 4418, 4420, 4501-4507, 510101, 510103- 510201, 5103, 5104, 5106-5114, 5116-5124, 5126-5146, 5148, 520102, 520104-5203, 5206,

55⁶	130, 270 bp	1070 bp	35, 37, 40, 46, 51, 53, 58	5209, 5306, 5520, 5613, 5808 1822, 3521, 3524, 3704, 4028, 460101-4610, 5104, 5146, 5302, 5306, 5809
56⁶	90, 410 bp	1070 bp	27, 47, 54, 55, 56, 78, 81	2702-270402, 270502-2711, 2713-2715, 2717, 2719-2721, 2724-2728, 2730-2737, 47010101-4703, 5401-5411, 550101-5505, 5507-5517, 5519- 5526, 5601-5616, 5618-5620, 8101, 8201, 8202, 8301
57⁶	90, 175 bp	1070 bp	15, 27, 35, 40, 48, 62, 75, 77, 81	1502, 1508, 151101-151103, 1513, 1515, 1521, 1531, 1544, 1555, 1588, 1589, 9512, 9521, 2724, 3546, 4031, 4045, 480101- 480102, 4804, 4806, 4807, 4809, 4811, 4815, 4816, 8101, 8102 4013, 4019, 4418, 4425, 4450, 4901, 4904, 4905
58⁶	145 bp	1070 bp	40, 44, 49	1316, 1516, 1542, 1567, 1595, 4901-4905, 5001, 5002, 5004, 510101-5103, 5105, 5107-5109, 5111N-5114, 5116-1524, 5126- 5141N, 5143, 5144N, 5147, 5148, 520101-5211, 550101-550104, 5503, 5505, 5509, 5511, 5515, 5517, 5521, 5524, 5525, 560501- 5606, 5808, 7801-7805
59⁶	120, 210 bp	800 bp	13, 15, 45, 49, 50, 51, 52, 55, 56, 58, 62, 63, 78	2702, 2730, 4013, 4019, 4406, 4425, 4450, 510101-5124, 5126- 5148, 520101-5211, 530101- 5302, 5304-5308, 5310, 570101- 5711, 5801, 5802, 5804-5815, 5902
60	430 bp	1070 bp	27, 40, 44, 45, 51, 52, 53, 57, 58, 59	1546, 1553, 9506, 3519, 3547, 3563, 400101-4011, 401401- 4018, 4020, 4022N-4040, 4042- 4045, 4048-4074, 4101-4104, 4105 [?] , 4106-4108, 4409, 4446, 4501-4507, 4702, 5001, 5002, 5004
61⁶	145 bp	1070 bp	15, 35, 40, 41, 44, 45, 47, 50, 72	0754, 0817, 1301-1304, 1306, 1308-1317, 15010101-150104, 1503-1507, 1512, 1514, 1519, 1520, 1524-1527, 1530, 1532- 1536, 1538-1540, 1542, 1543, 1545-1550, 1553, 1554, 1556-
62⁹	300 bp	1070 bp	13, 15, 18, 27, 35, 37, 38, 39, 40, 41, 44, 45, 47, 48, 49, 50, 52, 62,	

			72, 76, 78	1558, 1560-1563, 1565, 1566, 1568-1571, 1573-1575, 1577-1579N, 1581-1587, 1591, 1592, 1594N, 1596-1598, 9502-9507, 9509-9511N, 9513, 9516-9518, 9522, 9523, 9525-9529, 1812, 2701-270402, 270502-2721, 2724-2737, 3510, 3513, 3516, 3528, 3563, 3569, 370101-3707, 3709-3712, 3803, 3804, 390201-390202, 3908, 391301-391302, 3922, 3923, 400101-4007, 4009-4016, 4018-4024, 4026-4040, 4042-4067, 4070-4074, 4101-4108, 44020101-4405, 4407-4411, 4413-4453, 4501-4505, 4507, 4610, 47010101-4705, 480101-4805, 4807-4815, 4901-4905, 5001, 5002, 5004, 520101-5211, 5518, 5712, 5815, 7805
63	160, 215 bp	1070 bp	15, 44, 54	150104, 370104, 44020101-440204, 4406, 4408, 4409, 4411, 4412, 4416, 4419N-4424, 4427, 4433, 4434, 4441, 4444, 4448, 4449, 4451-4453, 5401-5411, 8301
64⁹	180, 210 bp	1070 bp	13, 15, 18, 35, 39, 40, 51, 54, 55, 56, 59, 78	1306, 1542, 1586, 1804, 3560, 3917, 4058, 5401, 5402, 5405N, 5407, 5408N, 5410, 550101-5503, 5505, 5507, 5510-5513, 5515, 5516, 5518, 5519, 5521, 5525, 5526, 560501, 5606, 5610, 5901, 7801, 780202, 7803
65¹⁴	180 bp	1070 bp	13, 15, 44, 45, 49, 50, 51, 56	1303, 1573, 4071, 4410, 4415, 4418, 4501, 4504-4507, 4901-4903, 5001, 5002, 5004, 5115, 5403, 5601, 5602, 5604, 5607, 5608, 5613, 5614, 5616, 5617, 5620, 8201, 8202
66⁶	90, 240 bp	800 bp	55, 57	5514, 570101-5712
67^{6,15}	90 bp	1070 bp	13, 15, 39, 40, 56, 58	1311, 1573, 3917, 4048, 4071, 5602, 5604, 5610, 5801, 5802, 5804-5815
68⁶	95 bp	1070 bp	18, 35, 38, 39, 44, 51, 52, 53, 56, 78	0832, 180101-1811, 1813-1815, 1817N-1826, 350101-350902, 3511, 3512, 351401-3515, 3517,

				3518, 3520-3524, 3527, 3529-3545, 3548, 3550-3562, 3564-3568, 3570-3575, 3708, 3806, 3807, 3919, 4406, 510101-5124, 5126-5148, 530101-5312, 7801-7804
69^{6,11}	115, 150 bp	1070 bp	15, 18, 27, 35, 39, 46, 56, 62, 73, 75, 76	15010101-150104, 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, 1819, 2725, 351401-351402, 3543, 3544, 3562, 3567, 3918, 3936, 460101-4602, 4604, 4605, 4607N, 4609, 4610, 5406, 5521, 5603, 7301
70	360 bp	1070 bp	Bw4 ¹⁶	
71	355 bp	1070 bp	Bw6	
72¹¹	290 bp	1070 bp	7, 8, 35, 37, 40, 41, 42, 48, 81	070201-0706, 0708-0732, 0734-0752, 0754, 080101-0808N, 0810, 0811, 0813-0815, 0817-0830N, 0832, 0833, 3566, 3707, 4015, 4016, 4030-4032, 4034, 4045, 4059, 4102, 4104, 4201, 4202, 420501-4207, 4209, 480101-480102, 4805-4812, 4814-4816, 8101, 8102

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 bp or more. Size differences shorter than 20 bp are not given. For high resolution SSP kits the length of the specific PCR product(s) of the alleles amplified by these primer mixes are given.

Nonspecific amplifications, i.e. a ladder or a smear of bands, may sometimes be seen. GC-rich primers have a higher tendency of giving rise to nonspecific amplifications than other primers, e.g. the primers in tubes 29, 30, 62, 64.

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

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 tubes, or a band of 800 base pairs, for some tubes.

Tube 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, tubes number 30, 33, 34, 44, 45, 54, 59 and 66 contain the primer pair giving rise to the shorter, 800 bp, internal positive control band in order to allow kit identification.

PLEASE NOTE: All the SSP kits, except the B*37, B*41, B*42, B*46, B*47, B*48, B*49, B*50, B*53, B*67, B*78, B*81 and B*82 kits and the Cw*01, Cw*02, Cw*08, Cw*12, Cw*14, Cw*15, Cw*16, Cw*17 and Cw*18 kits, from Olerup SSP AB can be uniquely identified by the number of tubes and the kit-specific pattern of the two differently sized control bands.

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 used the information published in *Tissue Antigens* 1999: **54**: 409-437, also available at the www.worldmarrow.org web site and also inferred the serological grouping from the naming of the sequence-defined allele.

⁴For several HLA-B alleles only partial nucleotide sequences are available, especially for the 1st exon. In these instances it is not known whether some of the primers of the HLA-B low resolution SSP set are completely matched with the target sequences or not. We assume that unknown sequences are conserved within allelic groups.

The nucleotide sequences of the B*0755, B*1318, B*3713, B*4075 and B*5412 alleles are not yet retrievable from the GenBank or EMBL data banks.

The B*0826 and 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*5504, B*5508, B*5513 and B*5615 and B*5619N give rise to identical amplification patterns with the HLA-B low resolution primer set. These alleles can be separated by the respective high resolution primer sets.

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

⁵Primer mix 25 may give rise to a primer oligomer artifact.

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

⁷Primer mix 27 will amplify the Cw*0305, Cw*0325 and Cw*0327 alleles.

⁸Primer mix 28 may yield less specific PCR product than the other HLA-B low resolution primer mixes in B*40, B*41, B*45, B*49 and B*50 alleles.

⁹Primer mixes 29, 30, 34, 62 and 64 have a higher tendency than other primer mixes to give rise to nonspecific amplifications.

¹⁰The B*57 and B*58 alleles might be faintly amplified by primer mix 33.

¹¹Primer mixes 33, 43, 44, 49, 69 and 72 have a tendency of giving rise a primer oligomer artifact.

¹²The Cw*1701 to Cw*1704 alleles might be faintly amplified by primer mix 49.

¹³Primer mix 53 might generate a false band of about 500 base pairs. This band should be disregarded when interpreting HLA-B low resolution typings.

¹⁴The Cw*0312 allele might be faintly amplified by primer mix 65.

¹⁵Primer mix 67 might amplify the Cw*0206 allele.

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

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

SPECIFICITY TABLE

DR low resolution primer set

Specificities and sizes of the PCR products of the 23 primer mixes of the DR low resolution primer set.

Primer Mix	Approx. size of spec. PCR product ¹	Size of control band ²	DR serology ³	Amplified HLA-DRB alleles ⁴
73⁸	205 bp	515 bp	1	010101-010204, 0104-0116
74	195 bp	430 bp	103	0103
75	215, 260 bp	430 bp	15	150101-1522
76	210 bp	430 bp	16	160101-160502, 1607-1611
77	220 bp	430 bp	3, 17, 18, 11	030101-0335, 1107, 1153
78^{5,6}	80, 210 bp	430 bp	3, 17, 11, 13, 14	030101-030104, 0304-0306, 0308-0316, 0318-0320, 0322, 0323, 0325, 0326, 0328, 0330, 0331, 0333, 110201-1103, 111101-111102, 111401-111402, 1116, 1120, 1121, 1136, 1140, 1141, 1148, 1159, 130101-1304, 1308, 1310, 1315-1317, 1319, 1320, 1322-1324, 1327-1329, 1331-1341, 1343, 1345, 1348, 1351-1354, 1357, 1359, 1361, 1363-1366, 1368-1379, 1416, 1419, 1421
79^{5,6}	80, 210 bp	430 bp	3, 18, 11, 13, 14	030201-0303, 0327, 0329, 1126, 1134, 1315, 1319, 1326, 1344, 1353, 1357, 1402-140302, 1406, 1409, 1412, 1413, 1417-1421, 1424, 1427, 1429, 1430, 1433, 1440, 1441, 1447-1449, 1451, 1463
80^{5,6}	100, 175 bp	430 bp	4	040101-0464
81	205, 230 bp	430 bp	7,	070101-070102, 0703-

			13, 14	0712, 1317, 1450
82^{5,6}	165, 215, 250 bp	515 bp	8, 12, 14	080101-080203, 080302- 0819, 0821-0832, 1204, 1411, 1415
83^{5,8}	85, 130, 180 bp	430 bp	3, 9, 11	0308, 090102-0906, 1107, 1153
84	205 bp	430 bp	10	100101-100102
85⁹	100, 170 bp	430 bp	11, 3, 4, 8	0308, 0415, 0461, 0831, 110101-1160, 1162
86⁵	85, 105 bp	430 bp	12, 8	0832, 120101-120202, 120302- 1215
87	210 bp	430 bp	13, 8, 11, 14	0820, 110101-110403, 110601- 110602, 110801-111202, 111401-1116, 1118-1121, 1123-1125, 112701-1133, 1135-1151, 115401- 115402, 1156-1160, 1162, 130101-1308, 1310-1316, 1318-1343, 1345-1379, 140301-140302, 1412, 1416, 1419, 1421, 1422, 1425, 1427, 1440, 1453, 1463
88⁶	195, 210 bp	430 bp	13, 8, 11, 12, 14	080101-080203, 080401- 0809, 0811, 0816, 0817, 0820-0822, 0824, 0826, 0828, 0831, 110101-110602, 1109- 111202, 111401-1116, 1120, 1121, 1123-1125, 112701-1130, 1132, 1133, 1135-1141, 1143, 1144, 1146-1151, 115401-1156, 1158-1160, 1162, 120201-120202, 1213, 1215, 130101-130201, 1304- 130502, 130701-1309, 1311, 131401-1324, 1326- 1329, 1331, 1332, 1334- 1336, 1338-1343, 1345-

				1355, 1357, 1359, 1361- 1365, 1367-1379, 1415, 1416, 1422, 1424, 1425, 1427, 1437, 1453
89	175 bp	430 bp	3, 13, 14, 8	030101-0307, 0309, 0311- 0333, 0335, 0820, 130101-1316, 1318-1342, 1344, 1346-1366, 1368- 1379, 1402-140302, 140501- 1406, 1409, 1412-1414, 1417-1421, 142301, 1424, 1427, 1429, 1430, 1433, 1436, 1437, 1440-1445, 1447, 1448, 1451, 1456, 1459, 1463-1465
90⁵⁻⁷	100, 140 bp	430 bp	14, 4, 8,13	0462, 0808, 1345, 140101-140102, 1404, 140701-140702, 1410, 1416, 1422, 1425, 1426, 1428, 1431, 1432, 1435, 1437-1439, 1449, 1450, 1453-1455, 1457, 1458, 1460-1462, 1466
91^{5-7,10}	110, 135, 170 bp	515 bp	14, 3, 9, 11, 12, 13	0308, 0310, 090102-0902, 0904-0906, 1109, 1110, 111202, 1113, 1116, 1117, 1120, 1122, 1140, 1146, 1152, 1158, 1159, 1204, 1343, 140101-1402, 1404-1411, 1413, 1414, 1416-142302, 1426, 1428-1436, 1438, 1439, 1441, 1443-1452, 1454-1457, 1459-1462, 1464-1466
92⁵⁻⁷	110, 175, 225 bp	430 bp	14, 3, 8, 11, 13, 15, 16	0310, 0809, 0820, 0821, 0832, 1113, 1117, 1123, 1125, 1131, 1145, 1152, 1155, 1313, 1318, 1343, 1345, 1347, 1355, 140101-140103, 140301-

				140503, 140701-1408, 1410-1412, 1414-1416, 1418, 1422-142302, 1425- 1428, 1431, 1432, 1434- 1436, 1438-1440, 1442- 1445, 1449, 1450, 1453- 1466, 1521 ^{weakly} , 1604 ^{weakly}
93	230 bp	430 bp	52	DRB3*01010201-0111, 0201-0222, 030101-0303
94¹¹	215 bp	430 bp	53	DRB4*010101-0107
95	260 bp	430 bp	51	DRB5*010101-0113, 0202- 0205

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 bp or more. Size differences shorter than 20 bp are not given. For high resolution SSP kits the length of the specific PCR product(s) of the alleles amplified by these primer mixes are given.

Nonspecific amplifications, i.e. a ladder or a smear of bands, may sometimes be seen. GC-rich primers have a higher tendency of giving rise to nonspecific amplifications than other primers, e.g. the primers in tubes 75, 90, 91 and 92.

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

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 tubes, or a band of 515 base pairs, for some tubes.

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

In addition, tubes number 82 and 91 contain the primer pair giving rise to the longer, 515 bp, internal positive control band in order to allow kit identification.

PLEASE NOTE: All the SSP kits, except the B*37, B*41, B*42, B*46, B*47, B*48, B*49, B*50, B*53, B*67, B*78, B*81 and B*82 kits and the Cw*01, Cw*02, Cw*08, Cw*12, Cw*14, Cw*15, Cw*16, Cw*17 and Cw*18 kits, from *Olerup* SSP AB can be uniquely identified by the number of tubes and the kit-specific pattern of the two differently sized control bands.

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 used the information published in *Tissue Antigens* 1999: **54**: 409-437, also available at the www.worldmarrow.org web site and 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.

The nucleotide sequences of the DRB1*0334, DRB1*110404, DRB1*1161, DRB1*1163 and DRB1*1377 alleles are not yet retrievable from the GenBank or EMBL data banks.

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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.

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.

⁷These primer mixes may give rise to nonspecific amplifications.

⁸These primer mixes may yield less specific PCR products than the other DR low resolution primer mixes.

⁹Primer mix 85 has a tendency of primer oligomer formation.

¹⁰Primer mix 91 has a tendency of primer oligomer formation and also has an intense primer cloud due to the high number of primers present in the primer mix.

¹¹The DRB4*01030102N allele is amplified by the primer mix 94, whereas the DRB4*0201N and DRB4*0301N null alleles are not amplified by this primer pair.

INTERPRETATION TABLE																									
HLA-A low resolution SSP typing																									
Amplification patterns of the A*0101 to A*8001 alleles																									
		Tube ⁶																							
		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24
Length of spec.		145	135	205	190	160	175	175	165	75	85	80	185	175	200	90	180	180	200	160	155	240	85	75	360
PCR product			200	235		535	220	205	200			215		225	240		210			200	240	375	240	160	
			255																						
Length of int.		800	1070	1070	800	800	800	1070	800	800	1070	800	800	1070	1070	1070	1070	1070	1070	800	800	800	800	800	1070
pos. control ¹																									
5'-primer(s) ²		98	78	363	98	144	98	98	98	266	257	302	103	98	98	363	97	180	98	180	78	28	78	176	###
		5'-CTT ^{3'}	5'-TCT ^{3'}	5'-ATA ^{3'}	5'-CTA ^{3'}	5'-gCC ^{3'}	5'-CTA ^{3'}	5'-CTC ^{3'}	5'-CTA ^{3'}	5'-ACg ^{3'}	5'-Cgg ^{3'}	5'-ggA ^{3'}	5'-CCT ^{3'}	5'-CTT ^{3'}	5'-CAC ^{3'}	5'-ATA ^{3'}	5'-TCA ^{3'}	5'-TTT ^{3'}	5'-CAC ^{3'}	5'-TTT ^{3'}	5'-TCT ^{3'}	5'-TCg ^{3'}	5'-TCT ^{3'}	5'-gCA ^{3'}	5'-ggA ^{3'}
		98	106		413	317	368	368	102	266	261	363	423	423							391	261	527	261	
		5'-CTC ^{3'}	5'-CCA ^{3'}		5'-CCg ^{3'}	5'-gCT ^{3'}	5'-gTT ^{3'}	5'-gTT ^{3'}	5'-ACA ^{3'}	5'-ACg ^{3'}	5'-AAC ^{3'}	5'-ATA ^{3'}	5'-gCT ^{3'}	5'-gCT ^{3'}							5'-ACg ^{3'}	5'-AAC ^{3'}	5'-TgC ^{3'}	5'-AAC ^{3'}	
			144						413												391				
			5'-gCA ^{3'}						5'-CCg ^{3'}												5'-ACg ^{3'}				
			144																						
			5'-TCA ^{3'}																						
3'-primer(s) ³		203	240	527	256	265	290	259	259	302	299	341	257	282	257	411	238	317	256	299	265	97	265	292	418
		5'-TCT ^{3'}	5'-ggA ^{3'}	5'-CCA ^{3'}	5'-CTg ^{3'}	5'-CCC ^{3'}	5'-gAA ^{3'}	5'-gTT ^{3'}	5'-gTT ^{3'}	5'-ggC ^{3'}	5'-TCg ^{3'}	5'-CgT ^{3'}	5'-gCA ^{3'}	5'-gAC ^{3'}	5'-gCA ^{3'}	5'-TCA ^{3'}	5'-CCT ^{3'}	5'-ggA ^{3'}	5'-CCC ^{3'}	5'-CCA ^{3'}	5'-CCC ^{3'}	5'-ggT ^{3'}	5'-CCC ^{3'}	5'-gTT ^{3'}	5'-gTC ^{3'}
			292	527	559	570	502	502	538			538	559	559	299		265		259	299	282	355	282	292	
			5'-gTg ^{3'}	5'-CCT ^{3'}	5'-CCg ^{3'}	5'-CCg ^{3'}	5'-CTg ^{3'}	5'-CTT ^{3'}	5'-CCA ^{3'}			5'-CTg ^{3'}	5'-CTC ^{3'}	5'-CCg ^{3'}	5'-TCg ^{3'}		5'-CCC ^{3'}		5'-gTT ^{3'}	5'-CCA ^{3'}	5'-gAC ^{3'}	5'-gAC ^{3'}	5'-gAC ^{3'}	5'-gTg ^{3'}	
				555			538	539					559							341	506		570	299	
				5'-CCA ^{3'}			5'-CAg ^{3'}	5'-TCT ^{3'}					5'-CgT ^{3'}							5'-CgT ^{3'}	5'-TgT ^{3'}		5'-CAC ^{3'}	5'-TCT ^{3'}	
			555																						
			5'-gCA ^{3'}																						
Tube No.		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24
HLA-A allele ⁴	ser ⁵																								
*01010101-0104N, 0106, 0109-0111N, 0116N-0118N, 0120, 0122N-0125	A1, null	+			+																				+
*0107	-	+			+																				
*0108, 0114, 0115N	-	+																							+
*0112, 0119	-	+		+								+													+
*0113	-	+			+							+		+											+
Tube No.		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24

Length of spec.		145	135	205	190	160	175	175	165	75	85	80	185	175	200	90	180	180	200	160	155	240	85	75	360
PCR product			200	235		535	220	205	200			215		225	240		210			200	240	375	240	160	
			255																						
Tube No.		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24
*0121	-	+		+	+									+											+
*02010101-0209, 0211-0216, 0218- 0222, 0224-0233, 0236-0238, 0240- 0245, 0247, 0249, 0251, 0253N, 0254, 0257-0261, 0263- 0269, 0271, 0272, 0274-0277, 0279- 0292, 0294N, 0296, 0297, 0299, 9201, 9202, 9204-9209, 9211-9213N, 9215	A2, A20 3, null		+																						
*0210, 0239, 0250, 0252, 0273, 0293, 0295, 9210, 9214	-		+																	+					
*021701-021702	A2		+					W																	
*0234, 023501, 0256, 0262, 9203	-		+											+						+		+			
*023502	-													+						+		+			
*0246, 0270	-		+																	+		+			
*0248	-																			+		+			
*0255	-		+						+													+		+	
*0278	-		+		+															+		+			
*03010101-0307, 0309, 0311N, 0313- 0317, 0319-0323, 0325-0329	A3			+										+											
*0310	-			+								+		+											
*0308	-			+																					
*0312	-			+	+																				
*0318, 2619	-				+									+											
*0324	-			+					+					+											
*110101-1109, 1113- 1117, 1119-1124, 1126-1130	A11				+							+													+
*1110	-				+				+			+													+
*1111	-				+							+	+												+
*1112, 1118	-				+							+													
*1125	-			+	+							+													+
*2301-2313, 2315	A23					+	+																		
*2314, 2405, 2424, 2465	-					+	+	+																	
Tube No.		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24

Length of spec.		145	135	205	190	160	175	175	165	75	85	80	185	175	200	90	180	180	200	160	155	240	85	75	360
PCR product			200	235		535	220	205	200			215		225	240		210			200	240	375	240	160	
			255																						
Tube No.		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24
*24020101-2404, 2406-2411N, 2413, 2417, 2418, 2420- 2423, 2425-2443, 2445N-2450, 2454- 2456, 2458-2463, 2466-2476	A24					+		+																	
*2414, 2415, 2452, 2453, 2457, 2464	A24					+																			
*2419, 2444	-					+		+				+													
*2451	-					+						+													
*250101-2504	A25								+	+				+											
*2505	-								+	+				+						+					
*2506	-								+	+			+												
*260101-260105, 2608, 2610-2615, 2617, 2618, 2620, 2623-2629, 2632	A26 , null								+		+			+											
*2602	A26								+		+			W											
*2603, 2606, 2621	A26								+			+		+										+	
*2604, 2634	A26								+		+														
*2605, 2630	A26								+					+										+	
*260701-260702	A26										+			+											
*2609	A26								+		+		+												
*2616	-							+			+			+											
*2622	-								+		+			+								+			
*2631	-								+					+											
*2633	-						+		+		+			+											
*2634	-								+		+														
*29010101-2906, 2908N-2912, 2915, 2916	A29														+										
*2907	-						+								+										
*2913	-														+			+							
*2914	-														+		+								
*300101-3004, 3006, 3007, 3009-3021	A30															+									
*3008	-				+												+			+		+			
*310102, 3102, 3105- 3107, 3109-3117	A31																+								
*3103	-											+	+				+								
*3104	A31											+					+								
*3108	-					+											+								
Tube No.		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24

Length of spec.		145	135	205	190	160	175	175	165	75	85	80	185	175	200	90	180	180	200	160	155	240	85	75	360
PCR product			200	235		535	220	205	200			215		225	240		210			200	240	375	240	160	
			255																						
Tube No.		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24
*320101-3202, 3206-3212, 3214	A32									+								+							
*3203	-																	+							
*3204	A3			+						+															
*3205	-					+												+							
*3213	-					+				+								+							
*3215	-								+	+								+							
*3301, 330301-3310	A33																		+						
*3401, 3405, 3406	A34								+			+	+												
*3402-3404, 3407	-			+					+			+	+												
*3408	-			+					+			+	+	+											
*3601, 3603	A36	+																					+		+
*3602	-	+		+																			+		+
*3604	-	+			+																		+		+
*4301	A43												+	+											
*6601, 6604-6606	A66								+			+		+											
*6602, 6603	A66								+			+													
*680101-6804, 6806-6814, 6816-6819, 6821-6828, 6830-6838	A68								+											+					
*6805, 6815, 6820	-								+											+			+		
*6829	-								+										+	+	+				
*6901	A69								+													+			
*7401-7409, 7411, 7412N	A74																			+					
*7410	-																			+					+
*8001	A80																						+		+
HLA-A allele ⁴	ser ⁵																								
Tube No.		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24

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

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

²The nucleotide position, in the 1st, 2nd or 3rd exon, matching the specificity-determining 3'-end of the primer is given. Nucleotide numbering as in *Tissue Antigens* 1998, **51:II**, 417-466. 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 in *Tissue Antigens* 1998, **51:II**, 417-466. The sequence of the 3 terminal nucleotides of the primer is given.

The nucleotide sequences of the A*9205 and A*9216 alleles are not yet retrievable from the GenBank or EMBL data banks.

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*2424 and A*2465 alleles will give rise to identical amplification patterns. These four alleles can be separated by the respective high resolution SSP primer sets.

The sequence of the A*0105N has been shown to be identical to A*0104N.

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

The sequence of the A*31011 allele has been shown to be identical to A*31012.

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 used the information published in *Tissue Antigens* 1999: **54**: 409-437, also available at the www.worldmarrow.org web site and also inferred the serological grouping from the naming of the sequence-defined allele.

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

'w', might be weakly amplified.

INTERPRETATION TABLE																																																	
HLA-B low resolution SSP																																																	
Amplification patterns of the B*0702 to B*8301 alleles ⁶																																																	
		Tube																																															
		25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48																								
Length of spec. PCR product		110	215	140	130	185	185	290	165	165	180	105	275	195	105	115	80	150	135	245	205	170	110	400	430																								
				235	265	235			220	390	395	195			435					400																													
									330																																								
Length of int. pos. control ¹		800	1070	1070	1070	1070	800	1070	1070	800	800	1070	1070	1070	1070	1070	1070	1070	1070	1070	800	800	1070	1070																									
5'-primer(s) ²		527	97	209	103	103	103	45	45	45	45	206	419	142	45	161	167	355	206	45	142	409	246	44	44																								
		5'-TgA ^{3'}	5'-TCg ^{3'}	5'-ggC ^{3'}	5'-CCg ^{3'}	5'-CCT ^{3'}	5'-CCg ^{3'}	5'-ggA ^{3'}	5'-ggA ^{3'}	5'-ggA ^{3'}	5'-ggA ^{3'}	5'-AgA ^{3'}	5'-gTC ^{3'}	5'-TCT ^{3'}	5'-ggA ^{3'}	5'-Cgg ^{3'}	5'-gCT ^{3'}	5'-TCA ^{3'}	5'-gAC ^{3'}	5'-ggA ^{3'}	5'-TCT ^{3'}	5'-ggC ^{3'}	5'-gAA ^{3'}	5'-ggC ^{3'}	5'-ggC ^{3'}																								
		540		363	361	363			357	435	420	420		419	540					368		420																											
		5'-gAC ^{3'}		5'-AgC ^{3'}	5'-AgT ^{3'}	5'-AAT ^{3'}			5'-Tgg ^{3'}	5'-AAA ^{3'}	5'-TTA ^{3'}	5'-TTA ^{3'}		5'-gTC ^{3'}	5'-gAC ^{3'}					5'-gTT ^{3'}		5'-TTA ^{3'}																											
									412																																								

INTERPRETATION TABLE																									
HLA-B low resolution SSP																									
Amplification patterns of the B*0702 to B*8301 alleles ⁶																									
Tube																									
49	50	51	52	53	54	55	56	57	58	59	60	61	62	63	64	65	66	67	68	69	70	71	72		
175	130	110	325	110	215	130	90	90	145	120	430	145	300	160	180	180	90	90	95	115	360	355	290		Length of spec. PCR product
				190		270	410	175		210				215	210		240			150					
				225																					
				260																					
1070	1070	1070	1070	1070	800	1070	1070	1070	1070	800	1070	1070	1070	1070	1070	1070	800	1070	1070	1070	1070	1070	1070	1070	Length of int. pos. control ¹
363	106	540	1 st I	355	141	209	41	209	206	357	49	206	1 st I	1 st I	141	420	209	209	206	165	1 st I	1 st I	355		5'-primer(s) ²
5'-Agg ^{3'}	5'-CCg ^{3'}	5'-gAC ^{3'}	5'-CAG ^{3'}	5'-TCA ^{3'}	5'-ATT ^{3'}	5'-ggC ^{3'}	5'-CTg ^{3'}	5'-ggC ^{3'}	5'-gAA ^{3'}	5'-Tgg ^{3'}	5'-Cag ^{3'}	5'-gAA ^{3'}	5'-CAG ^{3'}	5'-Cag ^{3'}	5'-ATT ^{3'}	5'-TTA ^{3'}	5'-ggC ^{3'}	5'-ggA ^{3'}	5'-gAC ^{3'}	5'-ACC ^{3'}	5'-Cag ^{3'}	5'-Cag ^{3'}	5'-TCA ^{3'}		
				418	357	209	368	363						418	420		362	369		463			363		
				5'-Agg ^{3'}	5'-Tgg ^{3'}	5'-ggg ^{3'}	5'-gTT ^{3'}	5'-AgC ^{3'}						5'-Agg ^{3'}	5'-TTA ^{3'}		5'-ggT ^{3'}	5'-TAC ^{3'}		5'-TgA ^{3'}			5'-AgC ^{3'}		
				499		355																			
				5'-TCI ^{3'}		5'-TCA ^{3'}																			
499	193	603	282	538	309	299	282	259	309	435	309	311	259	175	311	559	256	256	259	272	317	311	610		3'-primer(s) ³
5'-ggA ^{3'}	5'-CgT ^{3'}	5'-gTg ^{3'}	5'-gCC ^{3'}	5'-gTC ^{3'}	5'-ATC ^{3'}	5'-TCA ^{3'}	5'-gCC ^{3'}	5'-gTT ^{3'}	5'-ATC ^{3'}	5'-TCT ^{3'}	5'-ATC ^{3'}	5'-ggT ^{3'}	5'-CTC ^{3'}	5'-CCg ^{3'}	5'-ggT ^{3'}	5'-Cag ^{3'}	5'-CCC ^{3'}	5'-CCC ^{3'}	5'-gTT ^{3'}	5'-Tgc ^{3'}	5'-ggA ^{3'}	5'-ggT ^{3'}	5'-CTC ^{3'}		
		610		572	538	583	418	499		527				538	559		559	256		538					
		5'-CTC ^{3'}		5'-gCg ^{3'}	5'-gTC ^{3'}	5'-gTg ^{3'}	5'-gTC ^{3'}	5'-ggA ^{3'}		5'-CCT ^{3'}				5'-gTC ^{3'}	5'-Cgt ^{3'}		5'-Cgt ^{3'}	5'-CTC ^{3'}		5'-CCA ^{3'}					
																		420							
49	50	51	52	53	54	55	56	57	58	59	60	61	62	63	64	65	66	67	68	69	70	71	72		Tube No.
																								ser. ⁵	HLA-B allele ⁴
			+																						

Length of spec.		110	215	140	130	185	185	290	165	165	180	105	275	195	105	115	80	150	135	245	205	170	110	400	430
PCR product				235	265	235			220	390	395	195			435					400					
									330																
Tube No.		25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48
*0703, 0708, 0716, 0732, 0737	B7, B703	+																							+
*0704, 0725	B7	+													+										+
*0707	B7	+																							+
*0709, 0711, 0717	B7	+											+												+
*0713, 0715	-	+																							+
*0719	-																								+
*0720, 0724	-	+		+																					+
*0727	-	+										+								+					+
*0733, 0753	-																								+
*0736	-	+																							
*0738	-	+																							
*0740, 0748, 0751	-																								+
*0750	-	+										+													+
*0754	-	+																							+
*080101-080104, 0805, 0808N, 0810-0811, 0815, 0818, 0819N, 0822-0824, 0827, 0829, 0830, 0833	B8, Null		+						+																+
*0802	B8		+						+											+					
*0803	B8		+						+																
*0804	-		+						+			+													+
*0806, 0813, 0820	B8		+																						+
*0807, 0814	-		+																						+
*0809	-		+						+																+
*0812, 0816, 0831	-		+						+																+
*0817			+						+			+													+
*0821	-		+	+					+																+
*0825	-		+	+																					+
*0826, 4207	-								+																+
*0828	-		+										+												+
*0832	-		+						+										+						+
*1301, 1317	B13			+	+						+							+							
*130201-130204, 1308, 1315	B13			+	+						+														
*1303	-			+	+																				
*1304, 1310	-			+	+								+												
*1306	-			+	+													+							
*1307N	Null			+	+						+							+							
*1309	-				+						+														
*1311	-			+	+						+														
*1312, 1313	-			+	+													+							
Tube No.		25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48

175	130	110	325	110	215	130	90	90	145	120	430	145	300	160	180	180	90	90	95	115	360	355	290			Length of spec.	
				190		270	410	175		210				215	210						150						PCR product
				225																							
				260																							
49	50	51	52	53	54	55	56	57	58	59	60	61	62	63	64	65	66	67	68	69	70	71	72			Tube No.	
																						+	+		B7, B703	*0703, 0708, 0716, 0732, 0737	
		+	+																			+	+		B7	*0704, 0725	
			+																			+			B7		
			+																			+	+		B7	*0709, 0711, 0717	
			W																			+	+		-	*0713, 0715	
		+	+																			+	+		-	*0719	
			+																			+	+		-	*0720, 0724	
																					+		+		-	*0727	
			+																			+			-	*0733, 0740, 0748,	
			+																			+		+	-	*0736	
																						+		+	-	*0738	
			+																				+	+	-	*0733, 0740, 0748,	
																							+	+	-	*0750	
			+									+											+	+	-	*0754	
		+																					+	+	B8, Null	*080101-080104, 0805, 0808N, 0810-0812, 0815, 0816, 0818, 0819N, 0822-0824, 0827, 0829-0831, 0833	
		+																				+		+	B8	*0802	
		+																				+		+	B8	*0803	
		+																					+	+	-	*0804	
		+																					+	+	B8	*0806, 0813, 0820	
		+																					+	+	-	*0807, 0814	
		+			+																		+		-	*0809	
		+											+										+	+	-	*080101-080104, 0805,	
		+																					+	+	-	*0817	
		+																					+	+	-	*0821	
																							+	+	-	*0825	
		+																					+	+	-	*0826, 4207	
		+																					+	+	-	*0828	
		+																	+				+	+	-	*0832	
													+									+			B13	*1301, 1317	
													+										+		B13	*130201-130204, 1308, 1315	
													+			+							+		-	*1303	
													+										+		-	*1304, 1310	
													+		+								+		-	*1306	
													+										+		Null	*1307N	
													+											+	-	*1309	
													+					+					+		-	*1311	
													+										+		-	*1312, 1313	
49	50	51	52	53	54	55	56	57	58	59	60	61	62	63	64	65	66	67	68	69	70	71	72			Tube No.	

Lot No.: **X84**

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Length of spec.		110	215	140	130	185	185	290	165	165	180	105	275	195	105	115	80	150	135	245	205	170	110	400	430
PCR product				235	265	235			220	390	395	195			435					400					
									330																
Tube No.		25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48
*1314	-			+							+														
*1316	-			+	+						+														
*1401, 1407N	B64				+	+																		+	+
*140201-1404	B65				+		+																	+	+
*1405-140602	-						+																	+	+
*15010101- 15010102N, 150103, 1504, 1526N, 1527, 1532, 1534, 1535, 1538, 1550, 1556, 1557, 1560, 1570, 1571, 1575, 1579N, 1581, 1582, 1592, 1594N, 1596, 1597, 9502, 9504, 9505, 9509 9511N, 9513, 9517, 9518, 9522, 9525,	B62, Null, B15							+					+							+					
*150102	B62							+		+			+							+					
*150104	B62												+							+					
*1502, 1588, 9512, 9521	B75							+					+					+		+					
*1503, 1547, 1549, 1561, 1598, 9503, 9523, 9527	B72								+			+	+							+					
*1505, 1506, 1533, 1539, 1540, 1565, 1578, 1584, 9507	B62, B15							+					+							+					
*1507	B62			+				+					+							+					
*1508, 151101-151103, 1515	B75							+					+							+					
*1509	B70								+	+	+									+					
*1510, 1537, 1590, 1599	B71								+		+									+					
*1512, 1514, 1519	B76							+					+	+						+					
*1513	B77							+					+		+			+		+					
*1516, 1567, 1595	B63									+			+		+					+					
*15170101-151702	B63							+		+					+					+					
*1518, 1551, 1552, 1572, 1593, 9508, 9514, 9519	B71								+		+		+							+					
*1520, 1525	B62							+					+					+		+					
*1521, 1544	B75							+			+		+					+		+					
*1523	-								+		+		+			+				+					
Tube No.		25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48

49	50	51	52	53	54	55	56	57	58	59	60	61	62	63	64	65	66	67	68	69	70	71	72		Tube No.
175	130	110	325	110	215	130	90	90	145	120	430	145	300	160	180	180	90	90	95	115	360	355	290		Length of spec.
				190		270	410	175		210				215	210					150					PCR product
				225																					
				260																					
49	50	51	52	53	54	55	56	57	58	59	60	61	62	63	64	65	66	67	68	69	70	71	72		Tube No.
													+								+			-	*1314
										+			+								+			-	*1316
																						+		B64	*1401, 1407N
																						+		B65	*140201-1404
																						+		-	*1405-140602
													+							+		+		B62, Null, B15	*15010101-15010102N, 150103, 1504, 1526N, 1527, 1532, 1534, 1535, 1538, 1550, 1556, 1557, 1560, 1570, 1571, 1575, 1579N, 1581, 1582, 1592, 1594N, 1596, 1597, 9502, 9504, 9505, 9509 9511N, 9513, 9517, 9518, 9522, 9525,
													+							+		+		B62	*150102
													+	+						+		+		B62	*150104
								+														+		B75	*1502, 1588, 9512, 9521
													+									+		B72	*1503, 1547, 1549, 1561, 1598, 9503, 9523, 9527
													+									+		B62, B15	*1505, 1506, 1533, 1539, 1540, 1565, 1578, 1584, 9507
													+							+		+		B62	*1507
								+												+		+		B75	*1508, 151101-151103, 1515
																						+		B70	*1509
																						+		B71	*1510, 1537, 1590, 1599
													+							+		+		B76	*1512, 1514, 1519
								+													+			B77	*1513
										+												+		B63	*1516, 1567, 1595
																						+		B63	*15170101-151702
																							+	B71	*1518, 1551, 1552, 1572, 1593, 9508, 9514, 9519
													+									+		B62	*1520, 1525
								+														+		B75	*1521, 1544
																					+			-	*1523
49	50	51	52	53	54	55	56	57	58	59	60	61	62	63	64	65	66	67	68	69	70	71	72		Tube No.

Length of spec.		110	215	140	130	185	185	290	165	165	180	105	275	195	105	115	80	150	135	245	205	170	110	400	430
PCR product				235	265	235			220	390	395	195			435					400					
									330																
Tube No.		25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48
*1524, 1587	B62							+					+		+					+					
*1528	B15							+					+							+					
*1529	B15								+				+							+					
*1530, 1558, 1563	B62,							+												+					
*1531	B75							+					+							+					
*1536	-			+				+					+					+		+					
*1542	-							+												+					
*1543	-							+					+							+					
*1545	B62			+				+												+					
*1546	B72				+			+	+				+							+					
*1548	B62							+												+					
*1553	-				+				+				+							+					
*1554	-								+			+	+							+					
*1555	-			+				+					+							+					
*1562	-								+			+	+					+		+					
*1564	-								+			+	+							+					
*1566	-							+			+		+							+					
*1568	-			+				+	+			+	+							+					
*1569	-								+			+	+							+		+			
*1573	-							+												+					
*1574	-								+				+							+					
*1576, 9501	-							+					+							+					
*1577	-							+										+		+					
*1580	-								+		+		+					+		+					
*1583	-							+	+											+					
*1585	-							+					+					+		+					
*1586	-							+												+					
*1589	-			+				+					+					+		+					
*1591	-								+			+	+	+						+					
*9506	-				+			+	+				+					+		+					
*9515	-								+		+		+							+	+				
*9516	-							+					+							+					
*9520	-							+					+							+					
*9524	-								+		+		+							+					
*9526	-			+				+					+							+					
*180101-1803, 1805-1808, 1810, 1811, 1813, 1815, 1817N, 1818, 1820, 1821, 1823N-1825	B18												+			+		+							
*1804	-												+			+		+							
*1809	-												+			+					+				
*1812	-												+			+		+		+					
Tube No.		25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48

175	130	110	325	110	215	130	90	90	145	120	430	145	300	160	180	180	90	90	95	115	360	355	290		Length of spec. PCR product	
				190		270	410	175		210				215	210					150						
				225																						
				260																						
49	50	51	52	53	54	55	56	57	58	59	60	61	62	63	64	65	66	67	68	69	70	71	72		Tube No.	
													+							+	+			B62	*1524, 1587	
																				+		+		B15	*1528	
																						+		B15	*1529	
													+							+	+			B62,	*1530, 1558, 1563	
								+														+		B75	*1531	
													+								+			-	*1536	
									+				+		+							+		-	*1542	
													+							+	+			-	*1543	
													+							+		+		B62	*1545	
												+	+							+		+		B72	*1546	
													+									+		B62	*1548	
												+	+							+	+			-	*1553	
													+							+	+			-	*1554	
								+														+		-	*1555	
													+									+		-	*1562	
																						+		-	*1564	
													+							+	+			-	*1566	
													+							+	+			-	*1568	
													+									+		-	*1569	
													+			+	+			+	+			-	*1573	
													+									+		-	*1574	
			+																	+	+			-	*1576, 9501	
													+							+	+			-	*1577	
														+								+		-	*1580	
					+								+									+		-	*1583	
													+							+	+			-	*1585	
													+		+							+		-	*1586	
								+													+			-	*1589	
													+									+		-	*1591	
												+	+									+		-	*9506	
																					+			-	*9515	
+													+									+		-	*9516	
																				+		+		-	*9520	
+																						+		-	*9524	
													+							+	+			-	*9526	
																				+		+		B18	*180101-1803, 1805- 1808, 1810, 1811, 1813 1815, 1817N, 1818, 1820, 1821, 1823N- 1826	
															+					+		+		-	*1804	
																				+		+		-	*1809	
													+									+		-	*1812	
49	50	51	52	53	54	55	56	57	58	59	60	61	62	63	64	65	66	67	68	69	70	71	72		Tube No.	

Length of spec.		110	215	140	130	185	185	290	165	165	180	105	275	195	105	115	80	150	135	245	205	170	110	400	430
PCR product				235	265	235			220	390	395	195			435					400					
									330																
Tube No.		25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48
*1819	-												+			+			+						
*1822	-												+			+			+	+					
*1826	-																+			+					
*2701	B27					+											+								
*2702	B27					+											+								
*2703-270402, 270502- 2706, 2709, 2710, 2713, 2717, 2720, 2727, 2731, 2735-2737	B27					+											+								
*2707, 2711, 2714, 2715, 2721, 2728, 2732, 2734	B27																+								
*2708, 2726	B2708					+											+								
*2712	-					+											+								
*2716	-					+											+								
*2718	-					+						+					+								
*2719	-																+	+							
*2723	-					+											+								
*2724	-																+								
*2725	-																+								
*2729	-					+						+					+								
*2730	-																+	+							
*2733	-																+								
*350101-350106, 3507- 350802, 3511, 3515, 3520, 3523, 3529, 3540N-3542, 3548, 3550, 3552, 3554, 3557, 3561, 3573	B35												+					+	+						
*350201-350401, 3506, 3512, 3533, 3534, 3536, 3539, 3555, 3559, 3565Q, 3574	B35																	+	+						
*350402	-									+								+	+						
*3505, 3551, 3558, 3572	B35			+								+							+						
*350901-350902, 3518, 3531, 3575	B35																		+						
*3510, 3528, 3569	-												+					+	+						
*3513	B35																	+	+						
*351401-351402, 3562	B35												+					+	+						
*3516	-			+									+					+	+						
*3517, 3530	B35			+									+					+	+						
Tube No.		25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48

175	130	110	325	110	215	130	90	90	145	120	430	145	300	160	180	180	90	90	95	115	360	355	290		Length of spec. PCR product
				190		270	410	175		210				215	210					150					
				225																					
				260																					
49	50	51	52	53	54	55	56	57	58	59	60	61	62	63	64	65	66	67	68	69	70	71	72		Tube No.
																			+	+		+		-	*1819
						+													+			+		-	*1822
																			+			+		-	
			+										+								+			B27	*2701
			+				+				+		+								+			B27	*2702
																						+		B27	*2703-270402, 270502- 2706, 2709, 2710, 2713, 2717, 2720, 2727, 2731, 2735-2737
			+				+						+								+			B27	*2707, 2711, 2714, 2715, 2721, 2728, 2732, 2734
			+				+						+									+		B2708	*2708, 2726
													+									+		-	*2712
													+								+			-	*2716
													+									+		-	*2718
			+				+						+								+			-	*2719
																					+			-	*2723
			+				+	+					+								+			-	*2724
			+				+						+							+	+			-	*2725
													+								+			-	*2729
			+				+				+		+								+			-	*2730
			+				+						+									+		-	*2733
																			+			+		B35	*350101-350106, 3507- 350802, 3511, 3515, 3520, 3523, 3529, 3540N-3542, 3548, 3550, 3552, 3554, 3557, 3561, 3573
																			+			+		B35	*350201-350401, 3506, 3512, 3533, 3534, 3536, 3539, 3555, 3559, 3565Q, 3574
																			+			+		-	*350402
																			+			+		B35	*3505, 3551, 3558, 3572
																			+			+		B35	*350901-350902, 3518, 3531, 3575
													+									+		-	*3510, 3528, 3569
													+									+		B35	*3513
																			+	+		+		B35	*351401-351402, 3562
													+									+		-	*3516
																			+			+		B35	*3517, 3530
49	50	51	52	53	54	55	56	57	58	59	60	61	62	63	64	65	66	67	68	69	70	71	72		Tube No.

Length of spec.		110	215	140	130	185	185	290	165	165	180	105	275	195	105	115	80	150	135	245	205	170	110	400	430
PCR product				235	265	235			220	390	395	195			435					400					
									330																
Tube No.		25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48
*3519	B35												+					+							
*3521, 3524	-												+					+	+						
*3522	-			+															+						
*3525, 3549	-												+					+							
*3526	-						+						+					+							
*3527	B35												+					+							
*3532, 3537, 3553N, 3564, 3568	-												+						+						
*3535	-												+					+	+			+			
*3538	-																	+	+						
*3543, 3567	B35												+						+						
*3544	-																		+						
*3545, 3571	-												+	+				+	+						
*3546	-												+					+							
*3547	-				+								+					+							
*3556	-																	+							
*3560	-																		+						
*3563	-				+								+					+							
*3566	-												+						+						
*370101-370103, 3703N, 3706	B37, Null													+				+			+				
*370104	-													+				+			+				
*3702	-					+								+							+				
*3704	-													+				+			+				
*3705	-													+				+			W				
*3707	-	+												+							+				
*3708	-													+				+			+				
*3709	-													+							+				
*3710	-																	+			+				
*3711	-																	+	+						
*3712	-								+					+							+				
*380101-380102, 3809, 3811-3814, 3816	B38					+																+	+	+	
*380201-380202, 3808, 3815	B38					+															+	+	+	+	
*3803	B16					+						+									+	+	+		
*3804	-																				+	+		+	
*3805	-						+															+	+	+	
*3806	-																					+			
*3807	-					+																+			
*3810	-					+																	+	+	
Tube No.		25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48

175	130	110	325	110	215	130	90	90	145	120	430	145	300	160	180	180	90	90	95	115	360	355	290		Length of spec. PCR product
				190		270	410	175		210				215	210		240			150					
				225																					
				260																					
49	50	51	52	53	54	55	56	57	58	59	60	61	62	63	64	65	66	67	68	69	70	71	72		Tube No.
												+										+		B35	*3519
						+													+			+		-	*3521, 3524
																			+			+		-	*3522
																						+		-	*3525, 3549
																						+		-	*3526
																			+			+		B35	*3527
																			+			+		-	*3532, 3537, 3553N, 3564, 3566, 3568
																			+			+		-	*3535
				+															+			+		-	*3538
																			+	+		+		B35	*3543, 3567
																			+	+		+		-	*3544
				+															+			+		-	*3545, 3571
								+														+		-	*3546
												+										+		-	*3547
													+						+			+		-	*3556
														+					+			+		-	*3560
												+	+									+		-	*3563
																			+			+	+	-	*3532, 3537, 3553N,
				+								+									+			B37, Null	*370101-370103, 3703N, 3706
				+								+	+								+			-	*370104
												+									+			-	*3702
				+		+						+									+			-	*3704
				+								+										+		-	*3705
												+									+	+		-	*3707
				+								+						+		+				-	*3708
												+								+				-	*3709
				+								+								+				-	*3710
				+								+										+		-	*3711
				+								+									+			-	*3712
																					+			B38	*380101-380102, 3809, 3811-3814, 3816
																					+			B38	*380201-380202, 3808, 3815
												+									+			B16	*3803
												+									+			-	*3804
																					+			-	*3805
																			+		+			-	*3806
																			+		+			-	*3807
																					+			-	*3810
49	50	51	52	53	54	55	56	57	58	59	60	61	62	63	64	65	66	67	68	69	70	71	72		Tube No.

Length of spec.		110	215	140	130	185	185	290	165	165	180	105	275	195	105	115	80	150	135	245	205	170	110	400	430
PCR product				235	265	235			220	390	395	195			435					400					
									330																
Tube No.		25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48
*39010101-39010102L, 390103-390104, 3903, 3905-390602, 3909, 3911, 3914, 3915, 3924, 3926-3929, 3931, 3935, 3937, 3938Q, 3940N, 3941	B3901 , B39					+																+		+	+
*390201, 3908	B3902					+						+										+			+
*390202, 391301- 391302, 3923	B3902 , B39											+										+			+
*3904	B39						+															+		+	+
*3907	-					?	?						+									+		+	+
*3910, 3916, 3920	B39																					+			+
*3912	-																					+		+	+
*3917	-																					+			+
*3918	-					+																+		+	+
*3919	-																		+			+		+	+
*3922	-					+																+		+	+
*3925N, 3930, 3932- 3934	-					+																		+	+
*3936	-					+																		+	+
*3939	-					+						+										+			+
*400101-400105, 4007	B60,				+																				+
*400201-400203, 4004, 40060101-400602, 4039	B61, B40																								
*4003, 4020	B40												+												
*4005	B4005			+																					
*4008	-																								
*4009, 4011, 4018, 4024, 4027, 4029, 4035, 4037, 4040, 4044, 4050, 4056, 4057, 4064	B61, B40																								?
*4010, 4022N, 4033, 4036, 4042, 4043, 4049, 4054, 4055, 4061 4063, 4065-4067, 4073	Null, B40, B60					+																			?
*4012	-								+			+								+					
*4013, 4019	-																								
*401401-401403	-				+																				?
*4015, 4016, 4032	B61	+			+																				?
Tube No.		25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48

175	130	110	325	110	215	130	90	90	145	120	430	145	300	160	180	180	90	90	95	115	360	355	290		Length of spec.
				190		270	410	175		210				215	210		240			150					PCR product
				225																					
				260																					
49	50	51	52	53	54	55	56	57	58	59	60	61	62	63	64	65	66	67	68	69	70	71	72		Tube No.
																						+		B3901, B39	*39010101-39010102L, 390103-390104, 3903, 3905-390602, 3909, 3911, 3914, 3915, 3924, 3926-3929, 3931, 3935, 3937, 3938Q, 3940N, 3941
													+									+		B3902	*390201, 3908
													+									+		B3902, B39	*390202, 391301-391302, 3923
																						+		B39	*3904
																						+		-	*3907
																						+		B39	*3910, 3916, 3920
																						+		-	*3912
															+			+				+		-	*3917
																				+		+		-	*3918
																			+			+		-	*3919
													+									+		-	*3922
																						+		-	*3925N, 3930, 3932-3934
																					+	+		-	*3936
																					+	+		-	*3939
+												+	+									+		B60,	*400101-400105, 4007
	+											+	+									+		B61, B40	*400201-400203, 4004, 40060101-400602, 4039
	+											+	+									+		B40	*4003, 4020
	+											+	+									+		B4005	*4005
	+											+										+		-	*4008
	+											+	+									+		B61, B40	*4009, 4011, 4018, 4024, 4027, 4029, 4035, 4037, 4040, 4044, 4050, 4056, 4057, 4064
+												+	+									+		Null, B40, B60	*4010, 4022N, 4033, 4036, 4042, 4043, 4049, 4054, 4055, 4061 4063, 4065-4067, 4073
+													+									+		-	*4012
	+								+	+			+								+			-	*4013, 4019
												+	+									+		-	*401401-401403, 4030,
												+	+									+	+	B61	*4015, 4016, 4032
49	50	51	52	53	54	55	56	57	58	59	60	61	62	63	64	65	66	67	68	69	70	71	72		Tube No.

Length of spec.		110	215	140	130	185	185	290	165	165	180	105	275	195	105	115	80	150	135	245	205	170	110	400	430
PCR product				235	265	235			220	390	395	195			435					400					
									330																
Tube No.		25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48
*4021	-																								?
*4023	-	+			+																				+
*4025	-				+																				?
*4026	B21									+															?
*4028	-									+								+							?
*4030, 4034	-				+																				?
*4031, 4045	-				+																				?
*4038, 4052	-				+								+												?
*4046	-											+					+								?
*4047	-				+																				
*4048	-				+						+														?
*4051	-				+																				+
*4053, 4072	-				+																				?
*4058	-				+																				?
*4059	-				+								+												+
*4060	-				+								+												+
*4068	-																								?
*4069	-				+																				?
*4070	-																								
*4071	-			+																					?
*4074	-																								?
*4101, 4106, 4107	B41				+				+																+
*4102	B41				+				+																+
*4103	-				+				+																+
*4104	-				+																				+
*4105	-				+				+																+
*4108	-	+			+				+							+									+
*4201, 4202, 4206	B42								+																+
*4204	-								+																+
*420501-420502	-	+							+							+									+
*4208	-								+																+
*4209	-												+												+
*44020101-440204, 4411, 4416, 4419N, 4421-4424, 4427, 4433, 4434, 4448, 4451, 4452N	B44, B47, Null				+													+							
*440301-4405, 4413, 4426, 4428-4430, 4432, 4435, 4436, 4438, 4439, 4442, 4445	B44				+													+							
*4406	B44																	+							
*4407																		+							
*4408	B44			+														+							
Tube No.		25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48

175	130	110	325	110	215	130	90	90	145	120	430	145	300	160	180	180	90	90	95	115	360	355	290		Length of spec. PCR product
				190		270	410	175		210				215	210					150					
				225																					
				260																					
49	50	51	52	53	54	55	56	57	58	59	60	61	62	63	64	65	66	67	68	69	70	71	72		Tube No.
+													+									+		-	*4021
+													+	+								+		-	*4023
+													+									+		-	*4025
	+												+	+								+		B21	*4026
	+					+							+	+								+		-	*4028
													+	+								+	+	-	*401401-401403, 4030,
								+					+	+								+	+	-	*4031, 4045
+													+	+								+		-	*4038, 4052
+													+									+		-	*4046
+													+								+		-	*4047	
+													+	+				+				+		-	*4048
+													+	+								+		-	*4051
													+	+								+		-	*4053, 4072
													+	+		+						+		-	*4058
													+	+								+	+	-	*4059
+													+	+								+		-	*4060
	+												+									+		-	*4068
+													+									+		-	*4069
	+												+	+								+		-	*4070
	+												+	+		+		+				+		-	*4071
+	+												+	+								+		-	*4074
		+			+								+	+								+		B41	*4101, 4106, 4107
		+											+	+								+	+	B41	*4102, 4103
		+											+	+								+		-	*4102, 4103
		+											+	+								+	+	-	*4104
		+			+								?	+								+		-	*4105
		+											+	+								+		-	*4108
		+	+																			+	+	B42	*4201, 4202, 4206
		+	+		+																	+		-	*4204
		+	+																			+	+	-	*420501-420502
			+																			+		-	*4208
		+	+																			+	+	-	*4209
					+								+	+								+		B44, B47, Null	*44020101-440204, 4411, 4416, 4419N, 4421-4424, 4427, 4433, 4434, 4448, 4451, 4452N
					+								+									+		B44	*440301-4405, 4413, 4426, 4428-4430, 4432, 4435, 4436, 4438, 4439, 4442, 4445
					+	+					+			+					+			+		B44	*4406
					+								+									+		B44	*4407
					+								+	+								+		B44	*4408
49	50	51	52	53	54	55	56	57	58	59	60	61	62	63	64	65	66	67	68	69	70	71	72		Tube No.

Length of spec.		110	215	140	130	185	185	290	165	165	180	105	275	195	105	115	80	150	135	245	205	170	110	400	430
PCR product				235	265	235			220	390	395	195			435					400					
									330																
Tube No.		25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48
*4409	B12				+													+							
*4410	-				+							+						+		+					
*4412	-				+													+							
*4414	-				+				+									+							
*4415	-				+				+			+													
*4417, 4443	-				+								+	+				+							
*4418	-				+				+			+													
*4420	-				+				+																
*4425	-				+													+							
*4431	-				+																				
*4437	-				+													+							
*4440	-											+					+	+							
*4441	-				+																				
*4444	-											+					+	+							
*4446	-				+													+							
*4447	-				+																				
*4449	-		+		+													+							
*4450	-				+													+							
*4453	-				+																				
*4501, 4505, 4507	B45				+				+			+													+
*4502, 4503	-				+				+																+
*4504	-				+				+																+
*4506	-				+				+			+													+
*460101-460102, 4604, 4605, 4607N, 4609	B46							+					+												
*4602	-							+					+												
*4603, 4608	-							+					+												
*4606	-							+					+												
*4610	-							+					+												
*47010101-47010102	B47				+																				
*4702	-				+																				
*4703	-				+																				
*4704, 4705	-				+	+																			
*480101-480102, 4807, 4809, 4811, 4816	B48											+													+
*4802	-											+	+					+							+
*480301-480302	B48											+													+
*4804	-											+													+
*4805, 4808	B48	+										+													+
*4806	-																								+
*4810, 4812	-											+													+
*4813	-											+													+
*4814	-											+	+												+
Tube No.		25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48

175	130	110	325	110	215	130	90	90	145	120	430	145	300	160	180	180	90	90	95	115	360	355	290		Length of spec. PCR product
				190		270	410	175		210				215	210					150					
				225																					
				260																					
49	50	51	52	53	54	55	56	57	58	59	60	61	62	63	64	65	66	67	68	69	70	71	72		Tube No.
				+								+	+	+								+		B12	*4409
				+									+			+					+			-	*4410
				+										+							+			-	*4412
				+									+								+			-	*4414
					+								+			+					+			-	*4415
				+									+								+			-	*4417, 4443
					+				+				+			+					+			-	*4418
				+	+								+	+							+			-	*4420
				+					+		+		+								+			-	*4425
+				+									+								+			-	*4431
													+								+			-	*4437
				+									+								+			-	*4440
				+									+	+							+			-	*4441
				+									+	+							+			-	*4444
				+								+	+									+		-	*4446
				+									+								+			-	*4447
				+									+	+							+			-	*4449
				+					+		+		+								+			-	*4450
				+									+	+							+			-	*4453
					+							+	+			+						+		B45	*4501, 4505, 4507
					+							+	+									+		-	*4502, 4503
					+							+	+			+						+		-	*4504
			+		+							+				+						+		-	*4506
			+			+														+	+			B46	*460101-460102, 4604, 4605, 4607N, 4609
			W		+															+	+			-	*4602
			+		+																+			-	*4603, 4608
+			+		+																+			-	*4606
			+		+								+								+	+		-	*4610
							+						+								+			B47	*47010101-47010102
							+					+	+									+		-	*4702
							+					+	+									+	W	-	*4703
							+					+									+			-	*4704, 4705
								+					+									+	+	B48	*480101-480102, 4804, 4807, 4809, 4811, 4816
													+									+		-	*4802
+													+									+		B48	*480301-480302
								+					+									+		-	*480101-480102, 4804,
													+									+	+	B48	*4805, 4808
								+														+	+	-	*4806
													+									+	+	-	*4810, 4812, 4813
													+									+		-	*4810, 4812, 4813
													+									+	+	-	*4814
49	50	51	52	53	54	55	56	57	58	59	60	61	62	63	64	65	66	67	68	69	70	71	72		Tube No.

Length of spec.		110	215	140	130	185	185	290	165	165	180	105	275	195	105	115	80	150	135	245	205	170	110	400	430
PCR product				235	265	235			220	390	395	195			435					400					
									330																
Tube No.		25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48
*4815	-	+										+													+
*4901	B49				+																				
*4902	-				+																				
*4903	-																								
*4904, 4905	-				+								+												
*5001, 5004	B50				+																				+
*5002	B45				+							+													+
*510101, 510103, 510105-510201, 5103, 5107, 5109, 5111N, 5112, 511302, 5114, 5117-5119, 5122, 5123, 5126-5130, 5132, 5133, 5138- 5141N, 5143, 5148	B51, B5102 , B5103 , Null									+															
*510102, 510202, 5105, 5147	B51									+															
*510104, 511301, 5116, 5121, 5124, 5131, 5134, 5135	B51, B52																								
*5104, 5146	B51									+								+							
*5106	B51									+															
*5108, 5120	B51								+	+															
*5110	-																								
*5115	-																								
*5136	-								+																
*5137	-									+			+												
*5142	-																	+							
*5144N	Null								+	+															
*5145	-												+												
*520101, 520103, 5204, 5205, 5207, 5210, 5211	B52									+															
*520102, 520104-5203, 5206, 5209	B52									+															
*5208	-																								
*530101-530104, 5305, 5308, 5310	B53												+					+							
*5302	B53												+					+							
*5303, 5309, 5311, 5312	-												+					+							
*5304, 5307	-																	+							
*5306	B53												+					+							
Tube No.		25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48

175	130	110	325	110	215	130	90	90	145	120	430	145	300	160	180	180	90	90	95	115	360	355	290		Length of spec.
				190		270	410	175		210				215	210		240			150					PCR product
				225																					
				260																					
49	50	51	52	53	54	55	56	57	58	59	60	61	62	63	64	65	66	67	68	69	70	71	72		Tube No.
								+				+										+	+	-	*4815
									+	+		+				+					+			B49	*4901
										+		+				+					+			-	*4902
										+		+				+					+			-	*4903
									+	+		+									+			-	*4904, 4905
									+		+	+				+						+		B50	*5001, 5004
									+		+	+				+						+		B45	*5002
					+					+	+								+		+			B51, B5102, B5103, Null	*510101, 510103, 510105-510201, 5103, 5107, 5109, 5111N, 5112, 511302, 5114, 5117-5119, 5122, 5123, 5126-5130, 5132, 5133, 5138-5141N, 5143, 5148
										+	+								+		+			B51	*510102, 510202, 5105, 5147
					+					+	+								+		+			B51, B52	*510104, 511301, 5116, 5121, 5124, 5131, 5134, 5135
					+	+					+								+		+			B51	*5104, 5146
					+						+								+		+			B51	*5106
					+					+	+								+		+			B51	*5108, 5120
					+						+								+		+			-	*5110
											+						+		+		+			-	*5115
					+					+	+								+		+			-	*5136
					+					+	+								+		+			-	*5137
				+	+						+								+		+			-	*5142
					+					+	+								+		+			Null	*5144N
					+					+									+		+			-	*5145
										+	+		+								+			B52	*520101, 520103, 5204, 5205, 5207, 5210, 5211
					+					+	+		+								+			B52	*520102, 520104-5203, 5206, 5209
										+	+		+								+			-	*5208
											+								+		+			B53	*530101-530104, 5305, 5308, 5310
						+					+								+		+			B53	*5302
																			+		+			-	*5303, 5309, 5311, 5312
											+								+		+			-	*5304, 5307
					+	+				+									+		+			B53	*5306
49	50	51	52	53	54	55	56	57	58	59	60	61	62	63	64	65	66	67	68	69	70	71	72		Tube No.

Length of spec.		110	215	140	130	185	185	290	165	165	180	105	275	195	105	115	80	150	135	245	205	170	110	400	430
PCR product				235	265	235			220	390	395	195			435					400					
									330																
Tube No.		25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48
*5401, 5402, 5405N, 5407, 5408N, 5410	B54																								
*5403	-																								
*5404, 5411	-																								
*5406	-												+												
*5409	-												+												
*550101-550104, 5503, 5505, 5511, 5515, 5525	B55																								
*550201-550202, 5507, 5510, 5512, 5516, 5519, 5526	B54, B55																								
*5504, 5508, 5513, 5615, 5619N	B55																								
*5509, 5517	-																								
*5514	-												+					+							
*5518	-											+													
*5520	-																								
*5521	-																								
*5522	-											+													
*5523, 5618	-												+												
*5524	-											+													
*5601, 5608, 5614, 5616, 5620	B56																								
*5602, 5604	B56																								
*5603	B22												+												
*560501	-									+															
*560502	-									+															
*5606	B78									+									+						
*5607	-																								
*5609	-											+							+						
*5610	-																								
*5611, 5612	-																		+						
*5613	-								+																
*5617	-																								
*570101-570103, 5706, 5708, 5710	B57											+						+							
*5702-5705	B57																	+							
*5707	-																	+							
*5709	-							+										+							
*5711	-											+													
*5712	-																	+							
*5801, 5804, 5805, 5810N-5814	B58											+						+							
Tube No.		25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48

175	130	110	325	110	215	130	90	90	145	120	430	145	300	160	180	180	90	90	95	115	360	355	290		Length of spec.	
				190		270	410	175		210				215	210		240			150						PCR product
				225																						
				260																						
49	50	51	52	53	54	55	56	57	58	59	60	61	62	63	64	65	66	67	68	69	70	71	72		Tube No.	
			+				+							+	+							+		B54	*5401, 5402, 5405N, 5407, 5408N, 5410	
			+				+							+		+						+		-	*5403	
			+				+							+								+		-	*5404, 5411	
			+				+							+						+		+		-	*5406	
			+				+							+								+		-	*5409	
			+				+			+					+							+		B55	*550101-550104, 5503, 5505, 5511, 5515, 5525	
			+				+								+							+		B54, B55	*550201-550202, 5507, 5510, 5512, 5516, 5519, 5526	
			+				+															+		B55	*5504, 5508, 5513, 5615, 5619N	
			+				+			+												+		-	*5509, 5517	
			+				+										+					+		-	*5514	
													+		+							+		-	*5518	
		+	+		+		+								+							+		-	*5520	
			+				+			+					+					+		+		-	*5521	
			+				+															+		-	*5522	
			+				+															+		-	*5523, 5618	
			+				+			+												+		-	*5524	
			+				+									+						+		B56	*5601, 5608, 5614, 5616, 5620	
			+				+									+		+				+		B56	*5602, 5604	
			+				+													+		+		B22	*5603	
			+				+			+					+							+		-	*560501	
			+				+			+												+		-	*560502	
			+				+			+					+							+		B78	*5606	
			+				+									+					+			-	*5607	
			+				+															+		-	*5609	
			+				+								+			+				+		-	*5610	
			+				+															+		-	*5611, 5612	
			+		+		+									+						+		-	*5613	
																+						+		-	*5617	
											+						+				+			B57	*570101-570103, 5706, 5708, 5710	
											+						+				+			B57	*5702-5705	
				+							+						+				+			-	*5707	
				+							+						+				+			-	*5709	
											+						+				+			-	*5711	
													+				+					+		-	*5712	
											+							+			+			B58	*5801, 5804, 5805, 5810N-5814	
49	50	51	52	53	54	55	56	57	58	59	60	61	62	63	64	65	66	67	68	69	70	71	72		Tube No.	

Length of spec.		110	215	140	130	185	185	290	165	165	180	105	275	195	105	115	80	150	135	245	205	170	110	400	430
PCR product				235	265	235			220	390	395	195			435					400					
									330																
Tube No.		25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48
*5802, 5806	B58												+												
*5807	-												+	+											
*5808	-									+															
*5809	-												+					+							
*5815													+					+							
*5901	B59																								
*5902	-																								
*670101	B67					+																+			+
*670102	B67																					+			+
*6702	-																					+			+
*7301	B73																								+
*7801, 780202, 7803	B78									+								+							
*780201, 7804	B78									+								+							
*7805	-									+								+							
*8101	B81																								
*8102	-																								+
*8201, 8202	-								+			+								+					
*8301	-																	+							
HLA-B allele ⁴	ser. ⁵																								
Tube No.		25	25	25	25	25	25	25	25	25	25	25	25	25	25	25	25	25	25	25	25	25	25	25	25
Cw*0305, 0325, 0327				+																					
Cw*0746									+																
Tube No.		25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48

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 tubes, or a band of 800 base pairs, for some tubes.

Tube number 25 contains the primer pair giving rise to the shorter, 800 bp, internal positive control band in order to help in the correct orientation of the HLA-B low resolution typing.

In addition, tubes number 30, 33, 34, 44, 45, 54, 59 and 66 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 in *Tissue Antigens* 1998, **51:II**, 417-466. 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 in *Tissue Antigens* 1998, **51:II**, 417-466. The sequence of the 3 terminal nucleotides of the primer is given.

⁴The nucleotide sequences of the B*0755, B*1318, B*3713, B*4075 and B*5412 alleles are not yet retrievable from the GenBank or EMBL data banks.

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

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

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

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

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

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

The sequence of the B*27051 allele has been shown to be identical to B*27052.

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

The sequence of the B*39012 allele has been shown to be identical to B*39011.

Lot No.: **X84**

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175	130	110	325	110	215	130	90	90	145	120	430	145	300	160	180	180	90	90	95	115	360	355	290		Length of spec. PCR product
				190		270	410	175		210				215	210					150					
				225																					
				260																					
49	50	51	52	53	54	55	56	57	58	59	60	61	62	63	64	65	66	67	68	69	70	71	72		Tube No.
											+							+			+			B58	*5802, 5806
											+							+			+			-	*5807
					+					+	+							+			+			-	*5808
						+					+							+			+			-	*5809
											+		+					+			+				*5815
															+						+			B59	*5901
											+										+			-	*5902
			+																			+		B67	*670101
			+																			+		B67	*670102
			W																			+		-	*6702
			+																	+		+		B73	*7301
										+					+				+			+		B78	*7801, 780202, 7803
										+									+			+		B78	*780201, 7804
										+			+									+		-	*7805
			+				+	+													+	+		B81	*8101
			+					+													+	+		-	*8102
			+				+									+					+			-	*8201, 8202
			+	+			+						+								+			-	*8301
																								ser. ⁵	HLA-B allele ⁴
25	25	25	25	25	25	25	25	25	25	25	25	25	25	25	25	25	25	25	25	25	25	25	25		Tube No.
																									Cw*0305, 0325, 0327
																									Cw*0746
49	50	51	52	53	54	55	56	57	58	59	60	61	62	63	64	65	66	67	68	69	70	71	72		Tube No.

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

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

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

⁵The serological reactivity of all HLA-B alleles is not known. In this table we used the information published in *Tissue Antigens* 1999; **54**: 409-437, also available at the www.worldmarrow.org web site.

⁶The B*0826 and 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*5504, B*5508, B*5513, B*5615 and B*5619N 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*5523 and B*5618 give rise to identical amplification patterns with the HLA-B low resolution primer set. These alleles can be separated by the respective high resolution primer sets.

'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*1001 alleles																										
		Tube																								
		73	74	75	76	77	78	79	80	81	82	83	84	85	86	87	88	89	90	91	92	93	94	95		
Length of spec.		205	195	215	210	220	80	80	100	205	165	85	205	100	85	210	195	175	100	110	110	230	215	260		
PCR product				260			210	210	175	230	215	130		170	105		210		140	135	175					
											250	180								170	225					
Length of int.		515	430	430	430	430	430	430	430	430	515	430	430	430	430	430	430	430	430	515	430	430	430	430		
pos. control ¹																										
5'-primer(s) ²		14	14	13	13	13	13	13	13	14	16	26	31	13	16	10	10	13	37	26	13	10	28	13		
		5'-gAA ³	5'-gAA ³	5'-Agg ³	5'-Agg ³	5'-g TC ³	5'-g TC ³	5'-g TC ³	5'-A TA ³	5'-AT A ³	5'-gT T ³	5'-TAT ³	5'-gC g ³	5'-g TC ³	5'-gT T ³	5'-g CT ³	5'-g CT ³	5'-g TC ³	5'-g TA ³	5'-g TA ³	5'-g TC ³	5'-g CT ³	5'-g AT ³	5'-g TA ³		
							16		13	14	16	58		13		13	13		37	34	34	10		13		
							5'-gT T ³		5'-A CA ³	5'-AT A ³	5'-gT T ³	5'-gAg ³		5'-A CA ³		5'-g TC ³	5'-g TC ³		5'-g TT ³	5'-CAG ³	5'-CAG ³	5'-g CT ³		5'-g TA ³		
									13	16				16			16									
									5'-A CC ³	5'-gT T ³				5'-gT C ³			16									
														5'-C gT ³			16									
														5'-gT C ³			16									
3'-primer(s) ³		67	67	71	67	73	26	28	33	71	58	57	86	58	30	70	67	58	57	57	57	73	87	87		
		5'-gAg ³	5'-gAT ³	5'-CgC ³	5'-gAA ³	5'-g gC ³	5'-g gT ³	5'-CT C ³	5'-gTg ³	5'-CTC ³	5'-C CT ³	5'-C gA ³	5'-C AC ³	5'-C CT ³	5'-gTg ³	5'-gTC ³	5'-gAA ³	5'-C gg ³	5'-C Ag ³	5'-C Ag ³	5'-C Ag ³	5'-g gC ³	5'-CTC ³	5'-CTC ³		
		71		86	67	73	71	70	58	73	74	73		58	38	71	67	58	71	58	60	73				
		5'-gC g ³		5'-C CA ³	5'-gAg ³	5'-g gC ³	5'-g CT ³	5'-CTg ³	5'-C gg ³	5'-g gC ³	5'-CAG ³	5'-g gC ³		5'-C CT ³	5'-CAG ³	5'-g CT ³	5'-gAA ³	5'-C Ag ³	5'-CgC ³	5'-C CT ³	5'-gTg ³	5'-g gC ³				
					72	73				77	86	78					71			70	70					
					5'-gC g ³	5'-T gC ³				5'-A AT ³	5'-C AC ³	5'-CAC ³					5'-CTC ³			5'-CTg ³	5'-T CC ³					
										78							71			70	74					
										5'-CAC ³							5'-CgC ³			5'-T CC ³	5'-CAG ³					
Tube No.	DR	73	74	75	76	77	78	79	80	81	82	83	84	85	86	87	88	89	90	91	92	93	94	95		
DRB1 allele ⁴	ser ⁵																									
*010101-010204, 0104-0116	1	+																								
*0103	103		+																							
*030101-030104, 0304-0306, 0309, 0311-0316, 0318-0320, 0322, 0323, 0325, 0326, 0328, 0330, 0331, 0333	17					+	+											+								
Tube No.	DR	73	74	75	76	77	78	79	80	81	82	83	84	85	86	87	88	89	90	91	92	93	94	95		

Length of spec.		205	195	215	210	220	80	80	100	205	165	85	205	100	85	210	195	175	100	110	110	230	215	260
PCR product				260			210	210	175	230	215	130		170	105		210		140	135	175			
											250	180								170	225			
Tube No.	DR	73	74	75	76	77	78	79	80	81	82	83	84	85	86	87	88	89	90	91	92	93	94	95
*030201-0303, 0327, 0329	18					+		+										+						
*0307, 0317, 0321, 0324, 0332, 0335	-					+												+						
*0308	-					+	+					+		+						+				
*0310	-					+	+													+	+			
*040101-0414, 0416-0460, 0463, 0464	4								+															
*0415, 0461	4								+					+										
*0462	-								+										+					
*070101-0712	7									+														
*080101-080203, 080401-0807, 0811, 0816, 0817, 0822, 0824, 0826, 0828	8										+						+							
*080302, 0810, 0812-0815, 0818, 0819, 0823, 0825, 0827, 0829, 0830	8										+													
*0808	-										+						+		+					
*0809, 0821, 1415	8										+						+				+			
*0820, 1318, 1347, 1355	8,13															+	+	+			+			
*0831	-										+			+			+							
*0832	-										+				+						+			
*090102-0902, 0904-0906	9											+								+				
*0903	9											+												
*100101-100102	10												+											
*110101-110106, 110401-110403, 110601-110602, 111201, 1115, 1124, 112701-1130, 1132, 1133, 1135, 1137-1139, 1143, 1144, 1147, 1149-1151, 115401-115402, 1156, 1160, 1162	11													+		+	+							
Tube No.	DR	73	74	75	76	77	78	79	80	81	82	83	84	85	86	87	88	89	90	91	92	93	94	95

Length of spec.		205	195	215	210	220	80	80	100	205	165	85	205	100	85	210	195	175	100	110	110	230	215	260
PCR product				260			210	210	175	230	215	130		170	105		210		140	135	175			
										250	180									170	225			
Tube No.	DR	73	74	75	76	77	78	79	80	81	82	83	84	85	86	87	88	89	90	91	92	93	94	95
*110201-1103, 111101-111102, 111401-111402, 1121, 1136, 1141, 1148	11						+							+		+	+							
*1105	11													+			+							
*1107, 1153	-					+					+			+										
*110801-110802, 1118-111902, 1142, 1157	11													+		+								
*1109, 1110, 111202, 1146, 1158	11													+		+	+			+				
*1113, 1117, 1152	11													+						+	+			
*1116, 1120, 1140, 1159	-						+							+		+	+			+				
*1122	-													+						+				
*1123, 1125	11													+		+	+				+			
*1126, 1134	11							+						+										
*1131, 1145	-													+		+					+			
*1155	-													+			+				+			
*120101-120102, 120302, 1205-1212, 1214	12														+									
*120201-120202, 1213, 1215	12														+		+							
*1204	-										+				+					+				
*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, 1379	13						+									+	+	+						
*130202, 130301- 130302, 1310, 1333, 1337, 1366	13						+									+		+						
*130501-130502, 130701-130702, 1311, 131401-131402, 1321, 1342, 1346, 1349, 1350, 1362	13															+	+	+						
Tube No.	DR	73	74	75	76	77	78	79	80	81	82	83	84	85	86	87	88	89	90	91	92	93	94	95

Length of spec.		205	195	215	210	220	80	80	100	205	165	85	205	100	85	210	195	175	100	110	110	230	215	260
PCR product				260			210	210	175	230	215	130		170	105		210		140	135	175			
										250	180									170	225			
Tube No.	DR	73	74	75	76	77	78	79	80	81	82	83	84	85	86	87	88	89	90	91	92	93	94	95
*1306, 1312, 1325, 1330, 1356, 1358, 1360	13															+		+						
*1309	13																+	+						
*1313	-															+		+			+			
*1315, 1319, 1353, 1357	-						+	+								+	+	+						
*1317	13						+			+							+							
*1326	-							+								+	+	+						
*1343	-						+									+	+			+	+			
*1344	-							+										+						
*1345	-						+									+	+		+		+			
*1367	-															+	+							
*140101-140102, 1404, 140701-140702, 1410, 1426, 1428, 1431, 1432, 1435, 1438, 1439, 1454, 1455, 1457, 1460- 1462, 1466	14																		+	+	+			
*140103, 1408, 142302, 1434	-																			+	+			
*1402, 1406, 1409, 1413, 1417, 1420, 1429, 1430, 1433, 1441, 1447, 1448, 1451	14							+										+		+				
*140301-140302, 1412, 1440, 1463	14							+								+		+			+			
*140501-140503, 1414, 142301, 1436, 1443-1445, 1456, 1459, 1464, 1465	14																	+		+	+			
*1411	-									+										+	+			
*1416	6						+									+	+		+	+	+			
*1418	-							+										+		+	+			
*1419, 1421	-						+	+								+		+		+				
*1422	-															+	+		+	+	+			
*1424	-							+									+	+						
*1425, 1453	-															+	+		+		+			
*1427	14							+								+	+	+			+			
*1437	-																+	+	+					
Tube No.	DR	73	74	75	76	77	78	79	80	81	82	83	84	85	86	87	88	89	90	91	92	93	94	95

Lot No.: **X84**

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Length of spec.		205	195	215	210	220	80	80	100	205	165	85	205	100	85	210	195	175	100	110	110	230	215	260
PCR product				260			210	210	175	230	215	130		170	105		210		140	135	175			
											250	180								170	225			
Tube No.	DR	73	74	75	76	77	78	79	80	81	82	83	84	85	86	87	88	89	90	91	92	93	94	95
*1442																		+			+			
*1446, 1452	-																			+				
*1449	-							+											+	+	+			
*1450	-									+									+	+	+			
*1458	-																		+		+			
*150101-1520, 1522	15			+																				
*1521	-			+																	W			
*160101-1603, 160501-160502, 1607- 1611	16				+																			
*1604	16				+																W			
Tube No.		73	74	75	76	77	78	79	80	81	82	83	84	85	86	87	88	89	90	91	92	93	94	95
DRB1 allele ⁴	ser ⁵																							
DRB3*01010201- 0111, 0201-0222, 030101-0303	52																					+		
DRB4*010101-0107	53																						+	
DRB5*010101-0113, 0202-0205	51																							+
Tube No.	DR	73	74	75	76	77	78	79	80	81	82	83	84	85	86	87	88	89	90	91	92	93	94	95

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 tubes, or a band of 515 base pairs, for some tubes.

Tube number 1 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, tubes number 82 and 91 contain the primer pair giving rise to the longer, 515 bp, internal positive control band in order to allow kit identification.

²The codon, in the 2nd exon, matching the specificity-determining 3'-end of the primer is given. Codon numbering as in *Tissue Antigens* 1998, **51:II**, 467-507. The sequence of the 3 terminal nucleotides of the primer is given. Empty spaces indicate codon boundaries.

³The codon, in the 2nd exon, matching the specificity-determining 3'-end of the primer is given in the anti-sense direction. Codon numbering as in *Tissue Antigens* 1998, **51:II**, 467-507. The sequence of the 3 terminal nucleotides of the primer is given. Empty spaces indicate codon boundaries.

⁴The nucleotide sequences of the DRB1*0334, DRB1*110404, DRB1*1161, DRB1*1163 and DRB1*1377 alleles are not yet retrievable from the GenBank or EMBL data banks.

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

The sequence of the DRB1*080301 allele has been shown to be identical to DRB1*080302.

The sequence of the DRB1*090101 allele has been shown to be identical to DRB1*090102.

The sequence of the DRB1*120301 allele has been shown to be identical to DRB1*1201.

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

The DRB4*01010102N allele has been renamed DRB4*01030102N.

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

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.

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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.

⁵The serological reactivity of all DRB alleles is not known. In this table we used the information published in *Tissue Antigens* 1999: **54**: 409-437, also available at the www.worldmarrow.org web site and also inferred the serological grouping from the naming of the sequence-defined allele.

'ser', serological HLA specificity.

'w', may be weakly amplified.

CELL LINE VALIDATION SHEET																				
HLA-A low resolution primer set																				
					Tube															
					1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	
				Lot No.:	200626301	200626302	200626303	200626304	200626305	200626306	200626307	200626308	200626309	200626310	200626311	200626312	200626313	200626314	200626315	
	cell line		A*	A*																
1	9001	SA	*2402		-	-	-	-	+	-	+	-	-	-	-	-	-	-	-	
2	9280	LK707	*0201		-	+	-	-	-	-	-	-	-	-	-	-	-	-	-	
3	9011	E4181324	*0101		+	-	-	+	-	-	-	-	-	-	-	-	-	-	-	
4	9275	GU373	*3001		-	-	-	-	-	-	-	-	-	-	-	-	-	-	+	
5	9009	KAS011	*0101		+	-	-	+	-	-	-	-	-	-	-	-	-	-	-	
6	9353	SM	*0201	*2603	-	+	-	-	-	-	-	+	-	-	+	-	+	-	-	
7	9020	QBL	*2601		-	-	-	-	-	-	-	+	-	+	-	-	+	-	-	
8	9007	DEM	*0201		-	+	-	-	-	-	-	-	-	-	-	-	-	-	-	
9	9026	YAR	*2601		-	-	-	-	-	-	-	+	-	+	-	-	+	-	-	
10	9107	LKT3	*2402		-	-	-	-	+	-	+	-	-	-	-	-	-	-	-	
11	9051	PITOUT	*2902		-	-	-	-	-	-	-	-	-	-	-	-	-	+	-	
12	9052	DBB	*0201		-	+	-	-	-	-	-	-	-	-	-	-	-	-	-	
13	9067	BTB	*0201		-	+	-	-	-	-	-	-	-	-	-	-	-	-	-	
14	9071	OLGA	*3101		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
15	9075	DKB	*2402		-	-	-	-	+	-	+	-	-	-	-	-	-	-	-	
16	9037	SWEIG007	*2902		-	-	-	-	-	-	-	-	-	-	-	-	-	+	-	
17	9008	WILJON	*2501		-	-	-	-	-	-	-	+	+	-	-	-	+	-	-	
18	9257	32367	*3303	*7401	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
19	9038	BM16	*0201		-	+	-	-	-	-	-	-	-	-	-	-	-	-	-	
20	9059	SLE005	*0201		-	+	-	-	-	-	-	-	-	-	-	-	-	-	-	
21	9064	AMALA	*0217		-	+	-	-	-	-	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	-	+	-	+	-	-	-	-	-	-	+	-	-	-	-	

CELL LINE VALIDATION SHEET													
HLA-A low resolution primer set													
					Lot No.:	Tube							
						16	17	18	19	20	21	22	23
						200626316	200626317	200626318	200626319	200626320	200626321	200626322	200626323
	cell line		A*	A*									
1	9001	SA	*2402			-	-	-	-	-	-	-	-
2	9280	LK707	*0201			-	-	-	-	-	-	-	-
3	9011	E4181324	*0101			-	-	-	-	-	-	-	-
4	9275	GU373	*3001			-	-	-	-	-	-	-	-
5	9009	KAS011	*0101			-	-	-	-	-	-	-	-
6	9353	SM	*0201	*2603		-	-	-	-	-	-	-	+
7	9020	QBL	*2601			-	-	-	-	-	-	-	-
8	9007	DEM	*0201			-	-	-	-	-	-	-	-
9	9026	YAR	*2601			-	-	-	-	-	-	-	-
10	9107	LKT3	*2402			-	-	-	-	-	-	-	-
11	9051	PITOUT	*2902			-	-	-	-	-	-	-	-
12	9052	DBB	*0201			-	-	-	-	-	-	-	-
13	9067	BTB	*0201			-	-	-	-	-	-	-	-
14	9071	OLGA	*3101			+	-	-	-	-	-	-	-
15	9075	DKB	*2402			-	-	-	-	-	-	-	-
16	9037	SWEIG007	*2902			-	-	-	-	-	-	-	-
17	9008	WILJON	*2501			-	-	-	-	-	-	-	-
18	9257	32367	*3303	*7401		-	-	+	+	-	-	-	-
19	9038	BM16	*0201			-	-	-	-	-	-	-	-
20	9059	SLE005	*0201			-	-	-	-	-	-	-	-
21	9064	AMALA	*0217			-	-	-	-	-	-	-	-
22	9056	KOSE	*0201			-	-	-	-	-	-	-	-
23	9124	IHL	*0201	*3401		-	-	-	-	-	-	-	-
24	9035	JBUSH	*3201			-	+	-	-	-	-	-	-
25	9049	IBW9	*3301			-	-	+	-	-	-	-	-
26	9285	WT49	*0205			-	-	-	-	-	-	-	-
27	9191	CH1007	*2410	*2901		-	-	-	-	-	-	-	-
28	9320	BEL5GB	*0201	*2902		-	-	-	-	-	-	-	-
29	9050	MOU	*2902			-	-	-	-	-	-	-	-
30	9021	RSH	*3001	*6802		-	-	-	-	+	-	-	-
31	9019	DUCAF	*3002			-	-	-	-	-	-	-	-
32	9297	HAG	*0201			-	-	-	-	-	-	-	-
33	9098	MT14B	*3101			+	-	-	-	-	-	-	-
34	9104	DHIF	*3101			+	-	-	-	-	-	-	-
35	9302	SSTO	*3201			-	+	-	-	-	-	-	-
36	9024	KT17	*0206	*1101		-	-	-	-	-	-	-	-
37	9065	HHKB	*0301			-	-	-	-	-	-	-	-
38	9099	LZL	*0217			-	-	-	-	-	-	-	-
39	9315	CML	*0101	*0301		-	-	-	-	-	-	-	-
40	9134	WHONP199	*0207	*3001		-	-	-	-	-	-	-	-
41	9055	H0301	*0301			-	-	-	-	-	-	-	-
42	9066	TAB089	*0207			-	-	-	-	-	-	-	-
43	9076	T7526	*0207			-	-	-	-	-	-	-	-
44	9057	TEM	*6601			-	-	-	-	-	-	-	-
45	9239	SHJO	*2301	*2402		-	-	-	-	-	-	-	-
46	9013	SCHU	*0301			-	-	-	-	-	-	-	-
47	9045	TUBO	*0216	*0301		-	-	-	-	-	-	-	-
48	9303	TER-ND	*0201	*1101		-	-	-	-	-	-	-	-

CELL LINE VALIDATION SHEET																				
HLA-B low resolution primer set																				
					Tube															
					25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40
				Prod. No.:	200514201	200514202	200514203	200514204	200514205	200514206	200514207	200514208	200514209	200626410	200514211	200514212	200514213	200514214	200514215	200514216
	cell line		B*																	
1	9001 SA		*0702		+	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
2	9280 LK707		*5201	*7301	-	-	-	-	-	-	-	-	+	-	-	-	-	-	-	-
3	9011 E4181324		*52011		-	-	-	-	-	-	-	-	+	-	-	-	-	-	-	-
4	9275 GU373		*1510	*5301	-	-	-	-	-	-	-	+	-	+	-	+	-	-	-	-
5	9009 KAS011		*3701		-	-	-	-	-	-	-	-	-	-	-	-	+	-	-	-
6	9353 SM		*3901	*5101	-	-	-	-	+	-	-	-	+	-	-	-	-	-	-	-
7	9020 QBL		*1801		-	-	-	-	-	-	-	-	-	-	-	+	-	-	+	-
8	9007 DEM		*5701		-	-	-	-	-	-	-	-	-	-	-	+	-	-	-	-
9	9026 YAR		*3801		-	-	-	-	+	-	-	-	-	-	-	-	-	-	-	-
10	9107 LKT3		*5401		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
11	9051 PITOUT		*4403		-	-	-	+	-	-	-	-	-	-	-	-	-	-	-	-
12	9052 DBB		*5701		-	-	-	-	-	-	-	-	-	-	-	+	-	-	-	-
13	9067 BTB		*2705		-	-	-	-	+	-	-	-	-	-	-	-	-	-	-	+
14	9071 OLGA		*1501	*1520	-	-	-	-	-	-	+	-	-	-	-	+	-	-	-	-
15	9075 DKB		*4001		-	-	-	+	-	-	-	-	-	-	-	-	-	-	-	-
16	9037 SWEIG007		*4002		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
17	9008 WILJON		*1801		-	-	-	-	-	-	-	-	-	-	-	+	-	-	+	-
18	9257 32367		*1401	*5601	-	-	-	+	+	-	-	-	-	-	-	-	-	-	-	-
19	9038 BM16		*1801		-	-	-	-	-	-	-	-	-	-	-	+	-	-	+	-
20	9059 SLE005		*4001		-	-	-	+	-	-	-	-	-	-	-	-	-	-	-	-
21	9064 AMALA		*1501		-	-	-	-	-	-	+	-	-	-	-	+	-	-	-	-
22	9056 KOSE		*3503		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
23	9124 IHL		*4002	*5602	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
24	9035 JBUSH		*3801		-	-	-	-	+	-	-	-	-	-	-	-	-	-	-	-
25	9049 IBW9		*1402		-	-	-	+	-	+	-	-	-	-	-	-	-	-	-	-
26	9285 WT49		*5801		-	-	-	-	-	-	-	-	-	-	-	+	-	-	-	-
27	9191 CH1007		*0705	*5101	+	-	-	-	-	-	-	-	+	-	-	-	-	-	-	-
28	9320 BEL5GB		*4402	*4403	-	-	-	+	-	-	-	-	-	-	-	-	-	-	-	-
29	9050 MOU		*4403		-	-	-	+	-	-	-	-	-	-	-	-	-	-	-	-
30	9021 RSH		*4201		+	-	-	-	-	-	-	+	-	-	-	-	-	-	-	-
31	9019 DUCAF		*1801		-	-	-	-	-	-	-	-	-	-	-	+	-	-	+	-
32	9297 HAG		*4102		+	-	-	+	-	-	-	+	-	-	-	-	-	-	-	-
33	9098 MT14B		*4001		-	-	-	+	-	-	-	-	-	-	-	-	-	-	-	-
34	9104 DHIF		*3801		-	-	-	-	+	-	-	-	-	-	-	-	-	-	-	-
35	9302 SSTO		*4402		-	-	-	+	-	-	-	-	-	-	-	-	-	-	-	-
36	9024 KT17		*1501	*3501	-	-	-	-	-	-	+	-	-	-	-	+	-	-	-	-
37	9065 HHKB		*0702		+	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
38	9099 LZL		*1501		-	-	-	-	-	-	+	-	-	-	-	+	-	-	-	-
39	9315 CML		*0801	*2705	+	+	-	-	+	-	-	+	-	-	-	-	-	-	-	+
40	9134 WHONP199		*1302	*4601	-	-	+	+	-	-	+	-	-	+	-	+	-	-	-	-
41	9055 H0301		*1402		-	-	-	+	-	+	-	-	-	-	-	-	-	-	-	-
42	9066 TAB089		*4601		-	-	-	-	-	-	+	-	-	-	-	+	-	-	-	-
43	9076 T7526		*4601		-	-	-	-	-	-	+	-	-	-	-	+	-	-	-	-
44	9057 TEM		*3801		-	-	-	-	+	-	-	-	-	-	-	-	-	-	-	-
45	9239 SHJO		*4201	*5001	+	-	-	+	-	-	-	+	-	-	-	-	-	-	-	-
46	9013 SCHU		*0702		+	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
47	9045 TUBO		*5101		-	-	-	-	-	-	-	-	+	-	-	-	-	-	-	-
48	9303 TER-ND		*3501	*4403	-	-	-	+	-	-	-	-	-	-	-	+	-	-	-	-

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July 2007
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In U.S. "For Research Use Only"

CELL LINE VALIDATION SHEET																								
HLA-B low resolution primer set																								
					Tube																			
					57	58	59	60	61	62	63	64	65	66	67	68	69	70	71					
				Prod. No.:	200514233	200514234	200514235	200514236	200514237	200626438	200624439	200514240	200514241	200514242	200514243	200626444	200514245	200514246	200514247					
	cell line	B*																						
1	9001 SA	*0702	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	+				
2	9280 LK707	*5201	*7301	-	-	+	+	-	+	-	-	-	-	-	-	-	-	-	+	-	-			
3	9011 E4181324	*52011		-	-	+	+	-	+	-	-	-	-	-	-	-	+	+	+					
4	9275 GU373	*1510	*5301	-	-	-	+	-	-	-	-	-	-	-	-	+	-	+	+					
5	9009 KAS011	*3701		-	-	-	-	-	+	-	-	-	-	-	-	-	-	+	-	-				
6	9353 SM	*3901	*5101	-	-	+	+	-	-	-	-	-	-	-	-	+	-	+	+					
7	9020 QBL	*1801		-	-	-	-	-	-	-	-	-	-	-	-	+	-	-	+					
8	9007 DEM	*5701		-	-	-	+	-	-	-	-	-	-	+	-	-	-	+	-	-				
9	9026 YAR	*3801		-	-	-	-	-	-	-	-	-	-	-	-	-	-	+	-	-				
10	9107 LKT3	*5401		-	-	-	-	-	-	-	+	+	-	-	-	-	-	-	-	+				
11	9051 PITOUT	*4403		-	-	-	-	-	+	-	-	-	-	-	-	-	-	+	-	-				
12	9052 DBB	*5701		-	-	-	+	-	-	-	-	-	-	+	-	-	-	+	-	-				
13	9067 BTB	*2705		-	-	-	-	-	W	-	-	-	-	-	-	-	-	+	-	-				
14	9071 OLGA	*1501	*1520	-	-	-	-	-	+	-	-	-	-	-	-	-	+	-	-	-				
15	9075 DKB	*4001		-	-	-	-	+	+	-	-	-	-	-	-	-	-	-	+	-				
16	9037 SWEIG007	*4002		-	-	-	-	+	+	-	-	-	-	-	-	-	-	-	+	-				
17	9008 WILJON	*1801		-	-	-	-	-	-	-	-	-	-	-	-	+	-	-	+	-				
18	9257 32367	*1401	*5601	-	-	-	-	-	-	-	-	-	+	-	-	-	-	-	+	-				
19	9038 BM16	*1801		-	-	-	-	-	-	-	-	-	-	-	-	+	-	-	+	-				
20	9059 SLE005	*4001		-	-	-	-	+	+	-	-	-	-	-	-	-	-	-	-	+				
21	9064 AMALA	*1501		-	-	-	-	-	+	-	-	-	-	-	-	-	+	-	-	+				
22	9056 KOSE	*3503		-	-	-	-	-	-	-	-	-	-	-	-	+	-	-	-	-				
23	9124 IHL	*4002	*5602	-	-	-	-	+	+	-	-	+	-	+	-	-	-	-	+	-				
24	9035 JBUSH	*3801		-	-	-	-	-	-	-	-	-	-	-	-	-	-	+	-	-				
25	9049 IBW9	*1402		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	+	-				
26	9285 WT49	*5801		-	-	-	+	-	-	-	-	-	-	-	+	-	-	+	-	-				
27	9191 CH1007	*0705	*5101	-	-	+	+	-	-	-	-	-	-	-	-	+	-	+	+	-				
28	9320 BEL5GB	*4402	*4403	-	-	-	-	-	+	+	-	-	-	-	-	-	-	+	-	-				
29	9050 MOU	*4403		-	-	-	-	-	+	-	-	-	-	-	-	-	-	+	-	-				
30	9021 RSH	*4201		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	+				
31	9019 DUCAF	*1801		-	-	-	-	-	-	-	-	-	-	-	-	+	-	-	-	+				
32	9297 HAG	*4102		-	-	-	-	+	+	-	-	-	-	-	-	-	-	-	+	-				
33	9098 MT14B	*4001		-	-	-	-	+	+	-	-	-	-	-	-	-	-	-	+	-				
34	9104 DHIF	*3801		-	-	-	-	-	-	-	-	-	-	-	-	-	-	+	-	-				
35	9302 SSTO	*4402		-	-	-	-	-	+	+	-	-	-	-	-	-	-	+	-	-				
36	9024 KT17	*1501	*3501	-	-	-	-	-	+	-	-	-	-	-	-	+	+	-	-	+				
37	9065 HHKB	*0702		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	+				
38	9099 LZL	*1501		-	-	-	-	-	+	-	-	-	-	-	-	-	+	-	-	+				
39	9315 CML	*0801	*2705	-	-	-	-	-	W	-	-	-	-	-	-	-	-	-	+	-				
40	9134 WHONP199	*1302	*4601	-	-	-	-	-	+	-	-	-	-	-	-	-	+	+	+	-				
41	9055 H0301	*1402		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	+				
42	9066 TAB089	*4601		-	-	-	-	-	-	-	-	-	-	-	-	-	+	-	-	+				
43	9076 T7526	*4601																						

CELL LINE VALIDATION SHEET																				
DR low resolution primer set																				
					Tube															
					73	74	75	76	77	78	79	80	81	82	83	84	85	86	87	88
				Prod. No.:	200625801	200625802	200625803	200625804	200625805	200625806	200625807	200625808	200625809	200625810	200625811	200625812	200625813	200625814	200625815	200625816
	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	9007	DEM	*0401	*1602	-	-	-	+	-	-	-	+	-	-	-	-	-	-	-	-
9	9026	YAR	*0402		-	-	-	-	-	-	-	+	-	-	-	-	-	-	-	-
10	9107	LKT3	*0405		-	-	-	-	-	-	-	+	-	-	-	-	-	-	-	-
11	9051	PITOUT	*0701		-	-	-	-	-	-	-	-	+	-	-	-	-	-	-	-
12	9052	DBB	*0701		-	-	-	-	-	-	-	-	+	-	-	-	-	-	-	-
13	9067	BTB	*0801		-	-	-	-	-	-	-	-	-	+	-	-	-	-	-	+
14	9071	OLGA	*0802		-	-	-	-	-	-	-	-	-	+	-	-	-	-	-	+
15	9075	DKB	*0901		-	-	-	-	-	-	-	-	-	-	+	-	-	-	-	-
16	9037	SWEIG007	*1101		-	-	-	-	-	-	-	-	-	-	-	-	+	-	+	+
17	9008	WILJON	*1501		-	-	+	-	-	-	-	-	-	-	-	-	-	-	-	-
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		-	+	-	-	-	-	-	-	-	-	-	-	-	-	-	-

CELL LINE VALIDATION SHEET													
DR low resolution primer set													
					Tube								
						89	90	91	92	93	94	95	
					Prod. No.:	200625817	200625818	200625819	200625820	200625821	200625822	200625823	
	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	9007	DEM	*0401	*1602		-	-	-	-	-	+	+	
9	9026	YAR	*0402			-	-	-	-	-	+	-	
10	9107	LKT3	*0405			-	-	-	-	-	+	-	
11	9051	PITOUT	*0701			-	-	-	-	-	+	-	
12	9052	DBB	*0701			-	-	-	-	-	+	-	
13	9067	BTB	*0801			-	-	-	-	-	-	-	
14	9071	OLGA	*0802			-	-	-	-	-	-	-	
15	9075	DKB	*0901			-	-	+	-	-	+	-	
16	9037	SWEIG007	*1101			-	-	-	-	+	-	-	
17	9008	WILJON	*1501			-	-	-	-	-	-	+	
18	9257	32367	*0901	*1101		-	-	+	-	+	+	-	
19	9038	BM16	*1201			-	-	-	-	+	-	-	
20	9059	SLE005	*1302			+	-	-	-	+	-	-	
21	9064	AMALA	*1402			+	-	+	-	+	-	-	
22	9056	KOSE	*1302	*1401		+	+	+	+	+	-	-	
23	9124	IHL	*0803	*1414		+	-	+	+	+	-	-	
24	9035	JBUSH	*1101			-	-	-	-	+	-	-	
25	9049	IBW9	*0701			-	-	-	-	-	+	-	
26	9285	WT49	*0301			+	-	-	-	+	-	-	
27	9191	CH1007	*0405	*1001		-	-	-	-	-	+	-	
28	9320	BEL5GB	*0416	*0701		-	-	-	-	-	+	-	
29	9050	MOU	*0701			-	-	-	-	-	+	-	
30	9021	RSH	*0302			+	-	-	-	+	-	-	
31	9019	DUCAF	*0301			+	-	-	-	+	-	-	
32	9297	HAG	*1303			+	-	-	-	+	-	-	
33	9098	MT14B	*0404			-	-	-	-	-	+	-	
34	9104	DHIF	*1101			-	-	-	-	+	-	-	
35	9302	SSTO	*0403			-	-	-	-	-	+	-	
36	9024	KT17	*0403	*0406		-	-	-	-	-	+	-	
37	9065	HHKB	*1301			+	-	-	-	+	-	-	
38	9099	LZL	*1402			+	-	+	-	+	-	-	
39	9315	CML	*0301	*0401		+	-	-	-	+	+	-	
40	9134	WHONP199	*0701	*0901		-	-	+	-	-	+	-	
41	9055	H0301	*1302			+	-	-	-	+	-	-	
42	9066	TAB089	*0803			-	-	-	-	-	-	-	
43	9076	T7526	*0901			-	-	+	-	-	+	-	
44	9057	TEM	*1401			-	+	+	+	+	-	-	
45	9239	SHJO	*0701			-	-	-	-	+	-	-	
46	9013	SCHU	*1501			-	-	-	-	-	-	+	
47	9045	TUBO	*1104	*1201		-	-	-	-	+	-	-	
48	9303	TER-ND	*0103			-	-	-	-	-	-	-	

CERTIFICATE OF ANALYSIS

Olerup SSP™ HLA-A-B-DR SSP Combi Tray

Product number: 101.701-24/06 – licensed for PCR
 101.701-24u/06u – not licensed for PCR
Lot number: X84
Expiry date: 2009-May-01
Number of tests: 24 tests – Product No. 101.701-24
 6 tests – Product No. 101.701-06
Number of tubes per test: 24; 48; 23 + 1

Tube specifications:

Tube No.	Production No.	Tube No.	Production No.	Tube No.	Production No.
1	2006-263-01	9	2006-263-09	17	2006-263-18
2	2006-263-02	10	2006-263-10	18	2006-263-19
3	2006-263-03	11	2006-263-12	19	2006-263-20
4	2006-263-04	12	2006-263-13	20	2006-263-21
5	2006-263-05	13	2006-263-14	21	2006-263-22
6	2006-263-06	14	2006-263-15	22	2006-263-23
7	2006-263-07	15	2006-263-16	23	2006-263-24
8	2006-263-08	16	2006-263-17		

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

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

Tube No.	Production No.	Tube No.	Production No.	Tube No.	Production No.
25	2005-142-01	41	2005-142-17	57	2005-142-33
26	2005-142-02	42	2005-142-18	58	2005-142-34
27	2005-142-03	43	2005-142-19	59	2005-142-35
28	2005-142-04	44	2006-264-20	60	2005-142-36
29	2005-142-05	45	2005-142-21	61	2005-142-37
30	2005-142-06	46	2005-142-22	62	2006-264-38
31	2005-142-07	47	2005-142-23	63	2006-244-39
32	2005-142-08	48	2005-142-24	64	2005-142-40
33	2005-142-09	49	2005-142-25	65	2005-142-41
34	2006-264-10	50	2005-142-26	66	2005-142-42
35	2005-142-11	51	2005-142-27	67	2005-142-43
36	2005-142-12	52	2005-142-28	68	2006-264-44
37	2005-142-13	53	2005-142-29	69	2005-142-45
38	2005-142-14	54	2005-142-30	70	2005-142-47
39	2005-142-15	55	2005-142-31	71	2005-142-48
40	2005-142-16	56	2005-142-32		

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

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

Tube No.	Production No.	Tube No.	Production No.	Tube No.	Production No.
73	2006-258-01	81	2006-258-09	89	2006-258-17
74	2006-258-02	82	2006-258-10	90	2006-258-18
75	2006-258-03	83	2006-258-11	91	2006-258-19
76	2006-258-04	84	2006-258-12	92	2006-258-20
77	2006-258-05	85	2006-258-13	93	2006-258-21
78	2006-258-06	86	2006-258-14	94	2006-258-22
79	2006-258-07	87	2006-258-15	95	2006-258-23
80	2006-258-08	88	2006-258-16		

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

Additional 5'-primers and 3'-primers in primer solutions 80, 81, 83 and 90 were tested by separately adding one additional 3'-primer, respectively one additional 5'-primer. Additional 3'-primers in primer solutions 75, 76, 91 and 92 were tested by separately adding one additional 5'-primer. Additional 5'-primers in primer solutions 78, 87 and 88 were tested by separately adding one additional 3'-primer.

The negative control primer pairs, **Production No. 2006-148-01**, can detect contamination with PCR products diluted 10^{-7} .

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

Date of approval: 2007-July-12

Approved by:

Quality Control, Supervisor

Declaration of Conformity

Product name: Olerup SSP™ HLA-A-B-DRD SSP Combi Tray
Product number: 101.701-24/06, 101.701-24u/06u
Lot number: X84

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

Manufacturer: Olerup SSP AB
Hasselstigen 1
SE-133 33 Saltsjöbaden, Sweden
Phone: +46-8-717 88 27
Fax: +46-8-717 88 18

We, Olerup SSP AB, hereby declare that this product, to which this Declaration of Conformity relates is in conformity with the following Standard(s) and other normative document(s) ISO 9001:2000 and ISO 13485:2003, following the provisions of the 98/79/EC Directive on *in vitro* diagnostic medical devices, Annex II List B, conformity assessed using Annex IV, as transposed into the national laws of the Member States of the European Union.

The Technical Documentation File is maintained at Olerup SSP AB, Hasselstigen 1, SE-133 33 Saltsjöbaden, Sweden.

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

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

Saltsjöbaden, Sweden
2007-July-12

Olle Olerup
Managing Director

HLA-A-B-DR SSP Combi Tray
101.701-24/06 – licensed for PCR
101.701-24u/06u – not licensed for PCR
Lot No.: **X84**

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WARRANTY

Olerup SSP AB warrants its products to the original purchaser against defects in materials and workmanship under normal use and application. *Olerup* SSP AB's sole obligation under this warranty shall be to replace, at no charge, any product that does not meet the performance standards stated on the product specification sheet.

This warranty applies only to products that have been handled and stored in accordance with *Olerup* SSP AB's recommendations, and does not apply to products that have been the subject of alternation, misuse, or abuse.

All claims under this warranty must be directed to *Olerup* SSP AB in writing and must be accompanied by a copy of the purchaser's invoice. This warranty is in lieu of all other warranties, expressed or implied, including the warranties of merchantability and fitness for a particular purpose. In no case shall *Olerup* SSP AB be liable for incidental or consequential damages.

This product may not be reformulated, repacked or resold in any form without the written consent of *Olerup* SSP AB, Hasselstigen 1, SE-133 33 Saltsjöbaden, Sweden.

Handle all samples as if capable of transmitting disease. All work should be performed wearing gloves and appropriate protection.

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ARMSTM is a trademark of Zeneca Ltd.

HLA-A-B-DR SSP Combi Tray
101.701-24/06 – licensed for PCR
101.701-24u/06u – not licensed for PCR
Lot No.: **X84**

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