

Lot No.: **04F**

Lot-specific information

Olerup SSP[®] HLA-A-B-C SSP Combi Tray

Product number:	101.702-24u/06u – without <i>Taq</i> pol.
Lot number:	04F
Expiry date:	2010-September-01
Number of tests:	24 tests – Product No. 101.702-24u 6 tests – Product No. 101.702-06u
Number of wells per test:	95 +1
Storage - pre-aliquoted primers:	dark at -20°C
- PCR Master Mix:	-20°C
- Adhesive PCR seals	RT
- Product Insert	RT

This Product Description is only valid for Lot No. 04F.

CHANGES COMPARED TO THE PREVIOUS *OLERUP* SSP[®] HLA-A-B-C 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-C SSP Combi Tray lot was made (**Lot No. 01E**).

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

Well	5'-primer	3'-primer	rationale
16	Exchanged	-	To amplify the A*3121 allele.

The **HLA-B low resolution** specificity and interpretation tables have been updated for the HLA-B alleles described since the previous *Olerup* SSP[®] HLA-A-B-C SSP Combi Tray lot was made (**Lot No. 01E**).

The HLA-B low resolution primer set is unchanged compared to the previous lot.

Changes in revision R01 compared to R00:

1. The HLA-Cw alleles amplified by primer mix 84 have been corrected in the Specificity and Interpretation Tables.

Changes in revision R02 compared to R01:

1. Size of internal positive control band corrected to 800 bp for well 72.

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The **HLA-C low resolution** specificity and interpretation tables have been updated for the HLA-DRB alleles described since the previous *Olerup* SSP® HLA-A-B-C SSP Combi Tray lot was made (**Lot No. 01E**).

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

Well	5'-primer	3'-primer	rationale
73	-	Added	Primer added for the Cw*0121 allele.
74	-	Removed	Increased resolution.
82	Added	Added	Primer pair added for the Cw*0813 allele.
84	Exchanged	-	Primer exchanged to not amplify the Cw*040105 allele.
85	Exchange	-	Primer exchanged to not amplify the Cw*0753 allele.
91	Added	Added	Primer pair added for the Cw*0433 allele.
94	Exchanged	Added	Increased resolution.

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

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

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

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

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

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PRODUCT DESCRIPTION

HLA-A-B-C 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 HLA-Cw*0102 to Cw*1802 alleles into the groups Cw*01xx to Cw*18xx.

PLATE LAYOUT

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

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

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

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

Wells 73 to 95 – HLA-Cw low resolution primers.

Well 96 – Negative Control.

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

Well No. 1 is marked with the Lot No. '04F'.

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

INTERPRETATION

Only HLA-A alleles will be amplified by the 24 wells of the HLA-A low resolution primer set, **wells 1 to 24**, except that primer mix 6 will amplify the B*1827 allele. Thus, the interpretation of HLA-A low resolution is only influenced by this HLA-B allele and not by other HLA Class I genes.

Only HLA-B alleles will be amplified by the 48 wells of the HLA-B low resolution, primer set, **wells 25 to 72**, except that the HLA-Cw*0305, 0325 and 0327 alleles will be amplified by primer mix 27, that the Cw*0746 allele will be amplified by primer mix 32, that the Cw*0206 allele will be weakly amplified by primer mixes 34 and 67 and that the Cw*150204 allele will be amplified by primer mix 64. Thus, the

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interpretation of HLA-B low resolution typings is only influenced by these six HLA-Cw alleles and not by other alleles of other HLA class I genes.

Only HLA-Cw alleles will be amplified by the HLA-C low resolution primer set, **wells 73 to 95**, except that primer mix 85 will amplify the B*6702 allele and primer mix 92 will amplify the B*1403 allele. Thus, the interpretation of HLA-C low resolution typings is only influenced by these HLA-B alleles and not by other HLA class I genes.

UNIQUELY IDENTIFIED ALLELES

All the HLA-A alleles, i.e. **A*0101 to A*8001**, recognized by the HLA Nomenclature Committee in July 2008¹ will be amplified by the primers in the HLA-A low resolution primer set, **wells 1 to 24**. The HLA-A alleles will be grouped into their corresponding serological specificities³.

All the HLA-B alleles², i.e. **B*0702 to B*8301**, recognized by the HLA Nomenclature Committee in July 2008¹ will be amplified by the primers in the HLA-B low resolution primer set, **wells 25 to 72**. The HLA-B alleles will be grouped into their corresponding serological specificities⁴.

All the HLA-Cw alleles, i.e. **Cw*0102 to Cw*1802**, recognized by the HLA Nomenclature Committee in July 2008¹ will be amplified by the primers in the HLA-C low resolution primer set, **wells 73 to 95**. The HLA-Cw alleles will be grouped into the Cw*01xx to Cw*18xx groups.

¹HLA-A, HLA-B and HLA-Cw alleles listed on the IMGT/HLA web page 2008-July-11, release 2.22.0, www.ebi.ac.uk/imgt/hla.

²The nucleotide sequences of the B*3589 and 4093 alleles are not yet retrievable from the GenBank or EMBL data banks.

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

⁴The B*0826 and the B*4207 alleles give rise to identical amplification patterns with the HLA-B low resolution primer set. These alleles can be separated by the respective high resolution primer sets.

The B*1408 and the B*3925N, B*3930 and B*3932 to 3934 alleles give rise to identical amplification patterns with the HLA-B low resolution primer set. These alleles can be separated by the respective high resolution primer sets.

The B*1829 and the B*3523, B*3537, B*3553N, B*3564, B*3566 and B*356801-356802 alleles give rise to identical amplification patterns with the HLA-B low resolution primer set. These alleles can be separated by the respective high resolution primer sets.

The B*5504, B*5508, B*5513, B*5527 and the B*5615, B*5619N and B*5622 give rise to identical amplification patterns with the HLA-B low resolution primer set. These alleles can be separated by the respective high resolution primer sets.

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

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SPECIFICITY TABLE

HLA-A low resolution primer set

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

Primer Mix	Size of spec. PCR product ¹	Size of control band ²	HLA-A serology ³	Amplified HLA-A alleles ^{4,11,12}
1⁵	120, 145 bp	800 bp	A1, A36	01010101-0104N, 0106-0130, 3601-3604
2⁶	135, 200, 255 bp	1070 bp	A2	02010101-020115, 020117-0222, 0224-023501, 023503-0247, 0249-0297, 0299, 9201-9221, 9223-9228, 9230-9248
3⁷	205, 235 bp	1070 bp	A1, A3, A11, A32, A34, A36	0112, 0119, 0121, 03010101-0317, 0319-0339, 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, 0120-0129, 0278, 0312, 0318, 110101-1127, 1129-1136, 2619, 3008, 3604
5	160, 535 bp	800 bp	A3, A23, A24, A31, A32	0330, 2301-2319Q, 24020101-2411N, 241301-2415, 2417-2464, 2466-2488, 2490N, 2491, 3108, 3205, 3213
6	165, 200 bp	800 bp	A2, A23, A24, A29, A80	9222, 2301-2319Q, 2405, 241302, 2424, 2907, 8001, B*1827
7	175, 205 bp	1070 bp	A2, A23, A24, A26, A33	021701-021702 ^{weakly} , 2314, 24020101-2411N, 241301-241302, 2417-2450, 2454-2456, 2458-2463, 2466-2491, 2616, 3319
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, 2620-2637, 3215, 340101-3408, 6601-6607, 680101-6843, 6901
9⁵	75 bp	800 bp	A25, A32	250101-2506, 320101-3202, 3204, 3206-3216
10⁵	85 bp	1070 bp	A2, A26, A33	9246, 260101-2602, 2604, 260701-2618, 2620, 2622-2629, 2632-2637, 3313

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11 ^{5,7,8}	80, 175, 500 bp	1070 bp	A1, A11, A24, A26, A31, A34, A66	0113, 0128, 110101-1127, 1129-1136, 2419, 2444, 2603, 2606, 2621, 3103, 340101-3408, 6601, 6604-6607
12	185 bp	800 bp	A11, A25, A26, A31, A34, A43, A66	1111, 2506, 2609, 3103, 3104, 340101-3408, 4301, 6602, 6603
13 ⁷	175, 225 bp	1070 bp	A1, A2, A3, A25, A26, A34, A43, A66	0113, 0234-023503, 0256, 0262, 9203, 9235, 03010101-0307, 0309-0311N, 0313-0331, 0333-0335, 0337-0339, 250101-2505, 260101-260106, 2602 ^{weakly} , 2603, 2605-2608, 2610-2633, 2635-2637, 3408, 4301, 6601, 6604-6607
14	200, 240 bp	1070 bp	A29, A33	29010101-2917, 3313
15 ⁵	90, 135 bp	1070 bp	A1, A30	0113, 0128, 300101-3004, 3006-3020, 3022-3025
16	370, 400 bp	1070 bp	A31, A32	2914, 310102-3122, 3205
17	180 bp	1070 bp	A29, A32	2913, 320101-3203, 3205-3216
18	200 bp	1070 bp	A33, A68	3301, 330301-3319, 6829
19	160, 200 bp	800 bp	A74	7401-7412N
20 ⁹	155, 240 bp	800 bp	A2, A210, A25, A30, A68	0210, 0234-023503, 0239, 0246, 0248, 0250, 0252, 0256, 0262, 0270, 0273, 0278, 0293, 0295, 9203, 9210, 9214, 9217, 9222, 9229, 2505, 3008, 680101-6843
21	240, 375 bp	800 bp	A2, A24, A26, A68, A69	0255, 2482, 2622, 6829, 6901
22 ^{5,10}	85, 240 bp	800 bp	A2, A30, A36	0234-023503, 0246, 0248, 0256, 0262, 0270, 0278, 9203, 9229, 3008, 3601-3604
23 ⁵	75, 160 bp	800 bp	A2, A26, A68, A80	0255, 2603, 2605, 2606, 2621, 2630, 6805, 6815, 6820, 8001
24	360 bp	1070 bp	A1, A11, A33, A36, A74, A80	01010101-0104N, 0106, 0108-0129, 110101-1111, 1113-1117, 1119-1127, 1129-1136, 3313, 3601-3604, 7410, 8001

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

⁹ Primer mix 20 will give rise to nonspecific amplifications.

¹⁰ Primer mix 22 might faintly amplify most A*11 alleles.

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

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

¹² Primer mix 6 will amplify the B*1827 allele.

'w', might be weakly amplified.

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SPECIFICITY TABLE

HLA-B low resolution primer set

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

Primer Mix	Size of spec. PCR product ¹	Size of control band ²	HLA-B serol. ³	Amplified HLA-B alleles ⁴
25^{5,6}	110 bp	800 bp	7, 15, 37, 40, 41, 42, 48	070201-071802, 0720-0732, 0734-0739, 0741-0747, 0749N, 0750, 0752, 0754-0759, 0761-0766, 9538, 3707, 4015, 4016, 4023, 4032, 4108, 420501-420502, 4805, 4808, 4815
26	215 bp	1070 bp	8, 15, 44	080101-0825, 0827-0836, 9542, 4449
27⁷	140, 235 bp	1070 bp	7, 8, 13, 15, 35, 40, 4005, 44, 46, 53, 57, 58	0720, 0724, 0760, 0821, 0825, 1301-1304, 1306-1308Q, 1310-1322, 150106-150108, 1507, 152702-152703, 1536, 1545, 1555, 1568, 1589, 9526, 9535-9537, 9539-9542, 9544-9549N, 3505, 3516, 3517, 3522, 3530, 3551, 3558, 3572, 4005, 4071, 4408, 4454, 4457, 4460, 4611- 4616, 5314, 5714, 5715, 5717, 5818, Cw*0305, Cw*0325, Cw*0327
28⁸	130, 265 bp	1070 bp	13, 14, 15, 35, 40, 41, 44, 45, 47, 49, 50	1301-1304, 1306-1313, 1315-1322, 1401-1404, 1407N, 1409, 1546, 1553, 9506, 3547, 3563, 400101-400106, 4007, 4010, 401401-4016, 4022N, 4023, 4025, 4030-4034, 4036, 4038, 4042, 4043, 4045, 4047-4049, 4051-4055, 4058-4063, 4065-4067, 4069, 407201-4073, 4076, 4077, 4079-4081, 4084, 4087, 4088, 4092, 4101-4108, 44020101-4405, 4409-4439, 4441-4443, 4445-4456N, 4458N-446402, 4501-4509, 47010101-4705, 4901, 4902, 4904, 4905, 5001, 5002, 5004
29⁹	185, 235 bp	1070 bp	14, 16, 27, 37, 38, 39,	1401, 1407N, 1408, 2701-270402, 270502-2706, 2708-2710, 2712,

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			47, 64, 67	2713, 2716-2718, 2720, 2723, 2726, 2727, 2729, 2731, 2735-2737, 2739-2742, 3702, 380101-3803, 3807-3817, 39010101-39010102L, 390103-390201, 3903, 3905-390602, 3907 [?] , 3908, 3909, 3911, 3914, 3915, 3918, 391902, 3922, 3924-3944, 4704, 4705, 670101
30⁹	185 bp	800 bp	14, 35, 38, 39, 65	140201-140602, 1409, 3526, 3805, 3904, 3907 [?]
31	290 bp	1070 bp	15, 62, 63, 75, 76, 77, 46	15010101-150103, 150106-150107, 1502, 1504-1508, 151101-1515, 15170101-151702, 1519-1521, 1524-152701, 152703, 1528, 1530-1536, 1538-1540, 1542-1546, 1548, 1550, 1555-1558, 1560, 1563, 1565, 1566, 1568, 1570, 1571, 1573, 1575-1579N, 1581-1589, 1592, 1594N, 1596, 1597, 9501, 9502, 9504-9507, 9509-9513, 9516-9518, 9520-9522, 9525, 9526, 9528, 9529, 9535-9549N, 460101-4616
32	165, 220, 330 bp	1070 bp	8, 15, 35, 37, 40, 41, 42, 44, 45, 51, 56, 57, 70, 71, 72	080101-0805, 0808N-0812, 0815-0819N, 0821-0824, 0826, 0827, 0829-0836, 1503, 1509, 1510, 1518, 1523, 1529, 1537, 1546, 1547, 1549, 1551-1554, 1561, 1562, 1564, 1568, 1569, 1572, 1574, 1580, 1583, 1590, 1591, 1593, 1598, 1599, 9503, 9506, 9508, 9514, 9515, 9519, 9523, 9524, 9527, 9531-9534, 9543, 3587, 3712, 4012, 4101-410302, 4105-4108, 4201, 4202, 4204-4208, 4414, 4415, 4418, 4420, 4462, 4501-4509, 5108, 5120, 5136, 5144N, 5613, 5709, 8201, 8202, Cw*0746
33^{5,9,10}	165, 390 bp	800 bp	15, 35, 40, 44, 51, 52, 56, 58, 62, 63, 70, 78	150102, 1509, 1516-151702, 1567, 1595, 350402, 4026, 4028, 4462, 510101-510103, 510105-510902, 5111N, 5112, 511302, 5114, 5117-5120, 5122, 5123, 5126-5130, 5132, 5133, 5137-5141N, 5143, 5144N, 5146, 5148-5157, 520101-

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34⁹	180, 395 bp	800 bp	13, 15, 40, 55, 62, 70, 71, 72, 75	5207, 5209-5213, 560501-5606, 5621, 5808, 7801-7806
				1301-130204, 1307N-1309, 1311, 1314-1320, 1322, 1509, 1510, 1518, 1521, 1523, 1537, 1544, 1551, 1552, 1566, 1572, 1580, 1590, 1593, 1599, 9508, 9514, 9515, 9519, 9524, 9533, 9534, 4048, 5522, 5524, Cw*0206 ^{weakly}
35^{5,6}	105, 195 bp	1070 bp	7, 8, 15, 27, 38, 39, 40, 44, 45, 48, 55, 72	0727, 0750, 0804, 0817, 1503, 1547, 1549, 1554, 1561, 1562, 1564, 1568, 1569, 1591, 1598, 9503, 9523, 9527, 9531, 9532, 2718, 2729, 3803, 390201-390202, 3908, 391301-391302, 3923, 3939, 4012, 4046, 4410, 4415, 4418, 4440, 4444, 4501, 4505-4507, 480101-4805, 4807-4819, 5002, 5518, 8201, 8202
36	275 bp	1070 bp	7, 8, 13, 15, 18, 27, 35, 39, 40, 42, 44, 46, 48, 49, 51, 53, 54, 55, 56, 57, 58, 62, 63, 70, 71, 72, 75, 76, 77	0709, 0711, 0717, 0828, 0835, 1304, 1310, 15010101-150104, 150106-1508, 151101-1516, 1518- 1521, 1523-1529, 1531-1536, 1538-1540, 1543, 1544, 1546, 1547, 1549-1557, 1560-1562, 1564-1572, 1574-1576, 1578-1582, 1584, 1585, 1587-1589, 1591-1598, 9501-9529, 9531, 9532, 9534-9536, 9538-9549N, 180101-1815, 1817N- 1825, 1827-1829, 2741, 350101- 350107, 3505, 3507-350803, 3510, 3511, 351401-3517, 3519-3521, 3523-3530, 3532, 3535, 3537, 3540N-3543, 3545-3554, 3557, 3558, 3561-3564, 3566-3569, 3571, 3572, 3576-3580, 3582, 3586, 3590-3594, 3907, 3943, 4003, 4020, 4038, 4052, 4059, 4060, 4209, 4417, 4443, 4509, 460101- 4610, 4612-4616, 4802, 4814, 4904, 4905, 5137, 5145, 530101- 5303, 5305, 5306, 5308-5316, 5406, 5409, 5414, 5514, 5523, 5532, 5603, 5609, 5618, 570101- 570103, 5706, 5708, 5710, 5711, 5713-5716, 580101-5802, 5804- 5807, 5809-5819

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37	195 bp	1070 bp	15, 35, 37, 38, 44, 45, 58, 76	1512, 1514, 1519, 1591, 9531, 3545, 3571, 370101-3709, 3712, 3713, 3817, 4417, 4443, 4509, 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-1828
40⁶	80 bp	1070 bp	27, 40, 44	2701-270402, 270502-2721, 2723- 2743, 4046, 4440, 4444
41	150 bp	1070 bp	13, 15, 18, 27, 35, 37, 39, 40, 44, 48, 51, 53, 55, 56, 57, 58, 62, 75, 77	1301, 1306, 1307N, 1312, 1313, 1317, 1320, 1322, 1502, 1513, 1520, 1521, 1525, 1536, 1544, 1562, 1577, 1580, 1585, 1588, 1589, 9506, 9512, 9521, 9539, 9544, 1822, 2719, 2730, 350101- 350403, 3506-350803, 3510-3517, 3519-3521, 3523-3530, 3533-3536, 3538-3542, 3545-3550, 3552, 3554-3557, 3559, 3561-3563, 3565Q, 3569-3571, 3574, 3576- 3578, 3580-3585, 3590-3594, 370101-370104, 3703N-3706, 3708, 3710, 3711, 3713, 3942, 4028, 44020101-4414, 4416, 4417, 4419N, 4421-4430, 4432-4440, 4442-4446, 4448-4452N, 4455- 446402, 4802, 5104, 5142, 5146, 5156, 530101-5313, 5315, 5316, 5514, 5609, 5611, 5612, 570101- 5710, 5712, 5714-5717, 580101- 580102, 5804, 5805, 5809-5815, 5817N, 5819, 8301
42	135 bp	1070 bp	7, 8, 18, 35, 37, 39, 56, 78	0765, 0832, 180101-1808, 1810- 1815, 1817N-1829, 350101-3518, 352001-3524, 3528-3545, 3548, 3550-3555, 3557-3562, 3564-3572, 3774-3588, 3590-3594, 3711, 3714, 391901-391902, 5606, 7801-7805
43^{5,6}	245, 400 bp	1070 bp	15, 62, 63, 70, 71, 72, 75, 76, 77, 40, 44	15010101-150104, 150106-1521, 1523-1540, 1542-1558, 1560-1599, 9501-9529, 9531-9549N, 4012, 4410, 8201, 8202
44^{5,9,11}	205 bp	800 bp	7, 8, 15, 18, 37, 38	0727, 0802, 9515, 1809, 370101- 3704, 3705 ^{weakly} , 3706-3710, 3712, 3713, 380201-3804, 3808, 3815, 3817

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Lot-specific information

45	170 bp	800 bp	15, 35, 38, 39, 67	1569, 9536, 3535, 380101-3809, 3811-3817, 39010101-39010102L, 390103-3920, 3922-3924, 3926-3929, 3931, 3935, 3937-3942, 3944, 3945, 670101-6702
46⁶	110 bp	1070 bp	38	380101-3803, 3805, 3808-3817
47	400 bp	1070 bp	14, 38, 39, 64, 65	1401-1409, 380101-380202, 3804, 3805, 3808-3817, 39010101-39010102L, 390103-390105, 3903-3907, 3909, 3911, 3912, 3914, 3915, 3918-391902, 3922, 3924-3938Q, 3940N, 3941, 3944, 3945
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, 0739-0764, 0766, 080101-080105, 0804-0835, 1401-1409, 39010101-39010102L, 390103-3920, 3922-3945, 400101-400106, 4007, 4009-4011 [?] , 401401-4016 [?] , 4018 [?] , 4021 [?] , 4022N [?] , 4023, 4024-4038 [?] , 4040 [?] , 4042-4046 [?] , 4048-4050 [?] , 4051, 4052-4058 [?] , 4059, 4060, 4061-4069 [?] , 4071 [?] , 407201 [?] , 407202, 4073-4076 [?] , 4077, 4078 [?] , 4079, 4080-4088 [?] , 4101-4108, 4201, 4202, 4204-4209, 4501-4509, 480101-4817, 4819, 5001, 5002, 5004, 670101-6702, 7301, 8102
49^{5,11}	175 bp	1070 bp	15, 40, 44, 46, 48, 60	9516, 9524, 400101-400106, 4007, 4010, 4012, 4021-4023, 4025, 4033, 4036, 4038, 4042, 4043, 4046-4049, 4051, 4052, 4054, 4055, 4060-4063, 4065-4067, 4069, 4073, 4074, 4076, 4079, 4081, 4084, 4087, 4088, 4092, 4431, 4606, 480301-480302, 4817
50	130 bp	1070 bp	40, 61	400201-400602, 4008, 4009, 4011, 4013, 4018-4020, 4024, 4026-4029, 4035, 4037, 4039, 4040, 4044, 4050, 4056, 4057, 4064, 4068, 4070, 4071, 4074, 4075, 4078, 4082, 4085, 4086, 4089-4091
51⁶	110 bp	1070 bp	7, 8, 35, 41, 42, 55	0704, 0719, 0725, 080101-0805, 0807-0812, 0814-0819N, 0821-0824, 0826-0836, 3587, 4101-4108, 4201, 4202, 4204-4207, 4209, 5520
52	325 bp	1070 bp	7, 15, 27, 35, 42, 45,	070201-070207, 0704-0707, 0709-0712, 0713 ^{weakly} , 0714, 0715 ^{weakly} ,

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Lot-specific information

			46, 54, 55, 56, 67, 73, 81	0717-0726, 0728-0731, 0733-0736, 0739-0749N, 0751-0766, 1576, 9501, 2701-270402, 270502-2711, 2713-2715, 2717, 2719-2721, 2724-2728, 2730-2738, 2740-2743, 3576, 4201, 4202, 4204-4206, 4208, 4209, 4506, 460101-460102, 4602 ^{weakly} , 4603-4616, 5401-5415, 550101-5505, 5507-5517, 5519- 5532, 5601-5616, 5618-5622, 670101-670102, 6702 ^{weakly} , 7301, 8101-8104N, 8201, 8202, 8301
53^{6,12}	110, 195, 225, 260 bp	1070 bp	35, 37, 44, 47, 51, 57	3538, 3545, 3571, 370101-370104, 3703N-3706, 3708, 3710-3713, 44020101-4414, 4416, 4417, 4419N-4436, 4438-4463, 5142, 5707, 5709, 8301
54	215 bp	800 bp	8, 12, 15, 41, 42, 44, 45, 51, 52, 53, 55, 56, 58	0809, 1583, 4101, 4105-4107, 4204, 4406, 4415, 4418, 4420, 4501-4509, 510101, 510103- 510108, 510201, 510203-5104, 5106-510901, 5110-5114, 5116- 512402, 5126-5146, 5148, 5149, 5151-5153, 5155-5157, 520102, 520104-5203, 520601-520602, 5209, 5306, 5520, 5613, 5808
55	130, 270 bp	1070 bp	18, 35, 37, 40, 46, 51, 53, 57, 58	1822, 3521, 3524, 3581, 3704, 4028, 460101-4616, 5104, 5146, 5156, 5302, 5306, 5714, 5809
56⁶	90, 410 bp	1070 bp	7, 27, 35, 47, 54, 55, 56, 81	0765, 2702-270402, 270502-2711, 2713-2715, 2717, 2719-2721, 2724-2728, 2730-2738, 2740-2743, 3576, 47010101-4703, 5401-5415, 550101-5505, 5507-5517, 5519- 5532, 5601-5616, 5618-5622, 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, 9539, 9544, 9548, 2724, 3546, 4031, 4045, 4080, 480101-480102, 4804, 4806, 4807, 4809, 4811, 4815, 4816, 4818, 4819, 8101-8104N
58	145 bp	1070 bp	40, 44, 49	4013, 4019, 4418, 4425, 4450, 4901, 4904, 4905
59⁶	120, 210 bp	800 bp	13, 15, 45, 49, 50, 51,	1316, 1504 ^{weakly} , 1516, 1542, 1567, 1595, 9537, 4901-4905, 5001,

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Lot-specific information

			52, 55, 56, 58, 62, 63, 78	5002, 5004, 510101-5103, 5105, 5107-510902, 5111N-5114, 5116- 152402, 5126-5141N, 5143, 5144N, 5148-5155, 5157, 520101-5214, 550101-550104, 5503, 5505, 5509, 5511, 5515, 5517, 5521, 5524, 5525, 5528, 5529, 5531, 560501- 5606, 5621, 5808, 7801-7806
60	430 bp	1070 bp	27, 40, 44, 45, 51, 52, 53, 57, 58, 59	2702, 2730, 4013, 4019, 4406, 4425, 4450, 510101-512402, 5126- 5146, 5148, 5149, 5151-5153, 5155, 520101-5212, 530101-5302, 5304-5308, 5310, 5314-5316, 570101-5711, 5713-5716, 580101- 5802, 5804-5816, 5902
61	145 bp	1070 bp	15, 35, 40, 41, 44, 45, 47, 50, 72	1546, 1553, 9506, 9543, 3519, 3547, 3563, 400101-4011, 401401- 4016, 4018, 4020, 4022N-4040, 4042-4045, 4048-4075, 4077-4092, 4101-4104, 4105 [?] , 4106-4108, 4409, 4446, 4501-4509, 4702, 5001, 5002, 5004
62⁹	300 bp	1070 bp	7, 8, 13, 15, 18, 27, 35, 37, 38, 39, 40, 41, 44, 45, 46, 47, 48, 49, 50, 52, 55, 57, 58, 62, 72, 76, 78	0754, 0817, 1301-1304, 1306, 1308Q-1322, 15010101-150104, 150106-150108, 1503-1507, 1512, 1514, 1519, 1520, 1524-152703, 1530, 1532-1536, 1538-1540, 1542, 1543, 1545-1550, 1553, 1554, 1556-1558, 1560-1563, 1565, 1566, 1568-1571, 1573-1575, 1577- 1579N, 1581-1587, 1591, 1592, 1594N, 1596-1598, 9502-9507, 9509-9511N, 9513, 9516-9518, 9522, 9523, 9525-9529, 9531, 9532, 9535-9538, 9540-9542, 9545-9547, 1812, 2701-270402, 270502-2721, 2724-2743, 3510, 3513, 3516, 3528, 3563, 3569, 3580, 370101-3707, 3709-3714, 3803, 3804, 390201-390202, 3908, 391301-391302, 3922, 3923, 400101-4007, 4009-4016, 4018- 4024, 4026-4040, 4042-4067, 4070-4092, 4101-4108, 44020101- 4405, 4407-4411, 4413-446402, 4501-4505, 4507-4509, 4610-4616, 47010101-4705, 480101-4805, 4807-4815, 4817-4819, 4901-4905,

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Lot-specific information

				5001, 5002, 5004, 520101-5214, 5518, 5712-5717, 580102, 5815-5819, 7805, 7806
63	160, 215 bp	1070 bp	15, 37, 44, 54	150104, 370104, 44020101-440205, 4406, 4408, 4409, 4411, 4412, 4416, 4419N-4424, 4427, 4433, 4434, 4441, 4444, 4448, 4449, 4451-4453, 4455, 4459, 4463, 5401-5415, 8301
64⁹	180, 210 bp	1070 bp	7, 13, 15, 18, 35, 39, 40, 45, 54, 55, 56, 59, 78	0765, 1306, 1542, 1586, 1804, 3560, 3917, 4058, 4508, 5401, 5402, 5405N, 5407, 5408N, 5410, 5412, 5413, 550101-5503, 5505, 5507, 5510-5512, 5515, 5516, 5518, 5519, 5521, 5525, 5526, 5529-5531, 560501, 5606, 5610, 5623, 5901, 7801, 780202, 7803, Cw*150204
65¹³	180 bp	1070 bp	13, 15, 40, 44, 45, 46, 49, 50, 51, 54, 56	1303, 1573, 4071, 4410, 4415, 4418, 4501, 4504-4507, 4611, 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, 570101-5715, 5717
67^{6,14}	90 bp	1070 bp	13, 15, 39, 40, 56, 58	1311, 1573, 3917, 4048, 4071, 5602, 5604, 5610, 580101-5802, 5804-5819, Cw*0206^{weakly}
68⁶	95 bp	1070 bp	7, 8, 18, 35, 37, 38, 39, 44, 51, 52, 53, 78	0765, 0832, 180101-1811, 1813-1815, 1817N-1829, 350101-350902, 3511, 3512, 351401-3515, 3517, 3518, 352001-3524, 3527, 3529-3545, 3548, 3550-3562, 3564-356802, 3570-3572, 3574-3579, 3581-3588, 3590-3594, 3708, 3806, 3807, 391901-391902, 4406, 510101-512402, 5126-5146, 5148-5157, 530101-5316, 7801-7804
69^{5,6}	115, 150 bp	1070 bp	15, 18, 27, 35, 39, 46, 54, 55, 56, 62, 73, 75, 76	15010101-150104, 150106-150108, 1504, 1507, 1508, 151101-1512, 1514, 1515, 1519, 1524, 1526N-1528, 1530, 1532, 1534, 1535, 1538, 1543, 1545, 1546, 1550, 1553, 1554, 1556-1558, 1560, 1563, 1566, 1568, 1570, 1571,

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Lot-specific information

				1573, 1575-1577, 1579N, 1581, 1582, 1585, 1587, 1592, 1594N, 1596, 1597, 9501, 9502, 9504, 9505, 9509-9511N, 9513, 9517, 9518, 9520, 9522, 9525, 9526, 9528, 9529, 9535, 9537, 9540, 9542-9549N, 1819, 2725, 351401-351402, 3543, 3544, 3562, 3567, 3579, 3586, 3918, 3936, 460101-4602, 4604, 4605, 4607N, 4609, 4610, 4612, 4614-4616, 5406, 5521, 5603, 7301
70	360 bp	1070 bp	Bw4 ¹⁶	
71	355 bp	1070 bp	Bw6	
72⁵	290 bp	800 bp	7, 8, 35, 37, 40, 41, 42, 48, 53, 81	070201-0706, 0708-0732, 0734-0741, 0743-0752, 0754-0759, 0761-0766, 080101-0808N, 0810, 0811, 0813-0815, 0817-0830N, 0832-0836, 3566, 3587, 3707, 4015, 4016, 4030-4032, 4034, 4045, 4059, 4080, 4102, 4104, 4201, 4202, 420501-4207, 4209, 480101-480102, 4805-4812, 4814-4819, 5315, 8101-8104N

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

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

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

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

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

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

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

In addition, wells number 30, 33, 34, 44, 45, 54, 59, 66 and 72 contain the primer pair giving rise to the shorter, 800 bp, internal positive control band in order to allow kit identification.

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

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

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Lot-specific information

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

The nucleotide sequences of the B*3589 and 4093 alleles are not yet retrievable from the GenBank or EMBL data banks.

The B*0826 and the B*4207 alleles give rise to identical amplification patterns with the HLA-B low resolution primer set. These alleles can be separated by the respective high resolution primer sets.

The B*1408 and the B*3925N, B*3930 and B*3932 to 3934 alleles give rise to identical amplification patterns with the HLA-B low resolution primer set. These alleles can be separated by the respective high resolution primer sets.

The B*1829 and the B*3523, B*3537, B*3553N, B*3564, B*3566 and B*356801-356802 alleles give rise to identical amplification patterns with the HLA-B low resolution primer set. These alleles can be separated by the respective high resolution primer sets.

The B*5504, B*5508, B*5513, B*5527 and the B*5615, B*5619N and B*5622 give rise to identical amplification patterns with the HLA-B low resolution primer set. These alleles can be separated by the respective high resolution primer sets.

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

⁵Primer mixes 25, 33, 35, 43, 44, 49, 69 and 72 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, 33, 34, 44, 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.

¹¹The Cw*1701 to Cw*1704 alleles might be faintly amplified by primer mix 49.

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

¹³The Cw*0312 allele might be faintly amplified by primer mix 65.

¹⁴Primer mix 67 will amplify the Cw*0206 allele.

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

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

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Lot-specific information

SPECIFICITY TABLE

HLA-C low resolution SSP typing

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

Primer Mix	Size of spec. PCR product ¹	Size of control band ²	Amplified HLA class I ³ alleles
73⁴	155, 370 bp	800 bp	010201-0122
74⁵	270 bp	800 bp	0110, 020201-020203, 020205-0222, 0432, 0608, 1701-1704, 1803
75	280 bp	800 bp	020201-020203, 020205-0203, 0204 ^{weakly} , 0205-0213, 0214 ^{weakly} , 0215-0222, 030201-030203, 030401-0310, 0314-0317, 0319, 0323-0329, 0332-033802, 0340-0342, 0344-0348, 0403, 0406, 0416, 0603, 150201-1509, 151002, 1511, 1513, 1515-1521
76⁶	155 bp	1070 bp	030201-030406, 0305-0315, 0317-0340, 0342-0350
77	280 bp	800 bp	030301-030305, 031101-0313, 0320N-0322Q, 0330, 0331, 0343, 0349, 0350, 1512
78⁷	125 bp	1070 bp	020201-020203, 020205-0220, 0222, 04010101-040105, 0403-041502, 0417-0420, 0423-0434, 1511
79	165 bp	1070 bp	050101-050104, 0503-0519, 0605, 0810, 1221
80⁴	130, 240, 355 bp	800 bp	0206, 0339, 06020101-06020102, 060203-0616N, 1215, 1216, 150201-1503, 1507, 1508, 151001-1513, 1515-1518, 1521
81⁴	245, 425 bp	800 bp	070101-0733N, 0735-0757
82^{6,7}	115, 175, 240 bp	800 bp	080101-0816
83	340 bp	1070 bp	0114, 020201-020203, 020205-0211, 0213-0222, 0307, 0315, 0345, 04010101-040105, 0403-0410, 0412-0420, 0423-0428, 0430-0434, 050101-050104, 0503-0519, 06020101-06020102, 060203-0610, 0612-0617, 0707, 0709, 0749, 0810, 120401-1205,

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Lot-specific information

			1209, 1221, 1404, 150201-1506, 1508-1513, 1515-1520, 1602, 1609, 1701-1704, 1801-1803
84	100, 160, 220 bp	1070 bp	0104, 0121, 120201-12030102, 120303-120306, 120402-1208, 1210-1213, 1215-1221
85⁶	130, 250 bp	800 bp	0121, 0212, 04010101-040105, 0403-0409N, 0412-0420, 0423-0434, 0805, 120201-120303, 120305, 120306, 120402, 1206-1208, 1210-1220, 1503, 1516, 160101-1602, 1606-1611, B*6702
86⁸	220 bp	800 bp	0104, 0109, 0205, 0217, 06020101-06020102, 060203, 0603, 0607-0613, 0615-0617, 12030101-1207, 1211-1213, 1215, 1219, 160401
87	255 bp	800 bp	020201 ^{weakly} , 020202-020203, 020205-0213, 0215-0222, 0307, 0310, 0315, 0329, 0345, 0403, 0406, 0416, 050101-050104, 0503-0519, 0603, 0810, 120401-1205, 1209, 1221, 150201-1506, 1508-1513, 1515-1521, 1602, 1609, 1701-1704
88^{6,7}	95, 255 bp	1070 bp	0411, 0429, 0511, 0517, 0804, 0813, 140201-1409
89^{5,6,7}	110, 335 bp	1070 bp	0206, 1208, 1215, 150201-1513, 1515-1521
90⁵	190, 250 bp	1070 bp	0213, 0218, 04010101-040105, 0403-0410, 0412-0420, 0423-0432, 0434, 0517, 0605, 0731, 080101-080102, 0803, 0806, 0808-0811, 0814, 0816, 1214, 160101-1602, 160401, 1606-1611
91	225, 260 bp	800 bp	0411, 0433, 0807, 1214, 1701-1704
92	220, 425 bp	800 bp	010201-0103, 0106-0108, 0110-0120, 0516, 0605, 0606, 0617, 0707, 0709, 0749, 0812, 1209, 140201-1405, 1407N, 1801-1803, B*1403
93	325, 380 bp	1070 bp	0103, 0222, 030301-030407, 0306-0312, 0314, 0318-0324, 0326, 0328-0332, 0334, 0337-0350, 04010101-040105, 0403-0420, 0424-0434, 050101-050104, 0503, 0505-0519, 0609, 0614, 0710,

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Lot-specific information

			0728, 0741, 0743, 080101-0808, 0810, 0812-0816, 150201-1513, 1515-1521, 1701-1704, 1801-1803
94⁷	135 bp	1070 bp	030201-0317, 0319-033802, 0340-0350, 0432, 0603, 1803
95	160, 235 bp	1070 bp	06020101-06020102, 060203, 0604, 0606-0617, 070101-0725, 072701-0732N, 0735-0738, 0741-0757, 1216, 160101-1602, 1606-1611, 1801-1803

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

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

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

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

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

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

Well number 73 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-C low resolution typing.

In addition, wells number 74, 75, 77, 80, 81, 82, 85, 86, 87, 91 and 92 contain the primer pair giving rise to the shorter, 800 bp, internal positive control band in order to allow kit identification.

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

³For several HLA-C alleles only partial 1st and 4th exon nucleotide sequences are available. In these instances it is not known whether some of the primers of the HLA-C low resolution SSP sets are completely matched with the target sequences or not. We assume that unknown sequences in these exons and in the introns are conserved within loci and within allelic groups.

⁴The primer pairs in vials 73, 80 and 81 will in most samples give rise to two specific PCR fragments.

⁵Primer mixes 74, 89 and 90 have a tendency of giving rise to primer oligomer artifacts.

⁶Primer mixes 76, 82, 85, 88 and 89 yield somewhat less intense specific PCR fragments than the other HLA-C low resolution primer mixes.

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

⁸Primer mix 86 might faintly amplify the Cw*010201 to 0103, the Cw*0105 to Cw*0121 and the Cw*140201 to 1408 alleles.

Lot No.: 04F

Lot-specific information

INTERPRETATION TABLE																									
HLA-A low resolution SSP typing																									
Amplification patterns of the A*0101 to A*8001 alleles																									
		Well ⁶																							
		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24
Length of spec.		120	135	205	190	160	165	175	165	75	85	80	185	175	200	90	370	180	200	160	155	240	85	75	360
PCR product(s)		145	200	235		535	200	205	200			175		225	240	135	400			200	240	375	240	160	
			255									500													
Length of int.		800	1070	1070	800	800	800	1070	800	800	1070	1070	800	1070	1070	1070	1070	1070	1070	800	800	800	800	800	1070
pos. control ¹																									
5'-primer(s) ²		98	78	363	98	144	106	98	98	266	257	302	103	98	98	203	41	180	98	180	78	28	78	176	341
		5'-CTT ³	5'-TCT ³	5'-ATA ³	5'-CTA ³	5'-gCC ³	5'-CCA 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'-gAA ³	5'-CTT 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
		123	106		413	317	176	368	102	266	261	385	423	423		363					391	261	527	261	
		5'-AgT ³	5'-CCA ³		5'-CCg ³	5'-gCT ³	5'-gCA ³	5'-gTT ³	5'-ACA ³	5'-ACg ³	5'-AAC ³	5'-ggC ³	5'-gCT ³	5'-gCT ³		5'-ATA ³					5'-ACg ³	5'-AAC ³	5'-TgC ³	5'-AAC ³	
			144				368		413												391				
			5'-gCA ³				5'-gTT ³		5'-CCg ³												5'-ACg ³				
			144																						
			5'-TCA ³																						
3'-primer(s) ³		203	240	527	256	265	256	259	259	302	299	341	257	282	257	299	238	317	256	299	265	97	265	292	418
		5'-TCT ³	5'-ggA ³	5'-CCA ³	5'-CTg ³	5'-CCC ³	5'-CCC 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'-CCA 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	292	502	538			521	559	559	299	411	265		259	299	282	355	282	292	
			5'-gTg ³	5'-CCT ³	5'-CCg ³	5'-CCg ³	5'-gTT ³	5'-CTT ³	5'-CCA ³			5'-ggg ³	5'-CTC ³	5'-CCg ³	5'-TCg ³	5'-TCA ³	5'-CCC ³		5'-gTT ³	5'-CCA ³	5'-gAC ³	5'-gAC ³	5'-gAC ³	5'-gTg ³	
				555			502	539					559								341	506		570	299
				5'-CCA ³			5'-CTg ³	5'-TCT ³					5'-CgT ³							5'-CgT ³	5'-TgT ³		5'-CAC ³	5'-TCT ³	
			555				538																		
			5'-gCA ³			5'-Cag ³																			
Well No.		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24
HLA-A allele ⁴	ser ⁵																								
*01010101-0104N, 0106, 0109-0111N, 0116N-0118N, 0120, 0122N-0127N, 0129	A1, null	1			4																				24
*0107	-	1			4																				
*0108, 0114, 0115N	1	1																							24
*0112, 0119	-	1		3																					24
Well No.		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24

Lot No.: **04F**

Lot-specific information

Well No.		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24
*0113	-	1			4							11		13		15									24
*0121	-	1		3	4																				24
*0128	-	1			4							11				15									24
*0130	-	1																							
*02010101-020115, 020117-0209, 0211- 0216, 0218-0222, 0224- 0233, 0236-0238, 0240- 0245, 0247, 0249, 0251, 0253N, 0254, 0257- 0261, 0263-0269, 0271, A2, 0272, 027401-0277, A203 0279-0292, 0294N, , null 0296, 0297, 0299, 9201, 9202, 9204-9209, 9211- 9213N, 9215, 9216, 9218-9221, 9223-9228, 9230-9234, 9236-9245, 9247, 9248																									
*0210, 0239, 0250, 0252, 0273, 0293, 0295, 9210, 9214, 9217	A210		2																		20				
*021701-021702	A2		2					w																	
*0234, 023501, 023503, 0256, 0262, 9203	-		2											13							20		22		
*023502	-													13							20		22		
*0246, 0270	-		2																		20		22		
*0248, 9229	-																				20		22		
*0255	-		2						8													21		23	
*0278	-		2		4																20		22		
*9222	-						6														20				
*9235	-		2											13											
*9246	-		2									10													
*03010101-0307, 0309- 0311N, 0313-0317, 0319- 0323, 0325-0329, 0331, 0333-0335, 0337-0339	A3			3										13											
*0308, 0332, 0336N	-			3																					
*0312	-			3	4																				
*0318, 2619 ⁷	-				4									13											
*0324	-			3				8						13											
*0330	-			3		5								13											
*110101-1109, 1113- 1117, 1119-112402, 1126, 1127, 1129-1136	A11				4							11													24
Well No.		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24

Lot No.: **04F**

Lot-specific information

Well No.		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24
*1110	-				4				8			11													24
*1111	-				4							11	12												24
*1112, 1118	-				4							11													
*1125	-			3	4							11													24
*2301-2313, 2315-2319Q	A23					5	6																		
*2314, 2405, 241302, 2424 ⁸	-					5	6	7																	
*24020101-2404, 2406-2411N, 241301, 2417, 2418, 2420-2423, 2425-2443, 2445N-2450, 2454-2456, 2458-2463, 2466-2481, 2483N-2488, 2490, 2491	A24					5			7																
*2414, 2415, 2451-2453, 2457, 2464	A24					5																			
*2419, 2444	-					5		7				11													
*2482	-					5		7														21			
*2489	-							7																	
*250101-2504	A25								8	9				13											
*2505	-								8	9				13							20				
*2506	-								8	9			12												
*260101-260106, 2608, 2610-2615, 2617, 2618, 2620, 2623-2629, 2632, 2633, 2635-2637	A26, null								8		10			13											
*2602	A26								8		10			w											
*2603, 2606, 2621	A26								8			11		13										23	
*2604, 2634	A26								8		10														
*2605, 2630	A26								8					13										23	
*260701-260702	A26										10			13											
*2609	A26								8		10		12												
*2616	-						7				10			13											
*2622	-								8		10			13								21			
*2631	-								8					13											
*29010101-2906, 2908N-2912, 2915-2917	A29														14										
*2907	-						6								14										
*2913	-														14				17						
*2914	-														14		16								
*300101-3004, 3006, 3007, 3009-3020, 3022-3025	A30															15									
Well No.		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24

Lot No.: **04F**

Lot-specific information

Well No.		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24			
*3008	-	4												15				20				22						
*310102-3102, 3105-3107, 3109-3122	A31																16											
*3103	-									11 12				16														
*3104	A31												12				16											
*3108	-					5								16														
*320101-3202, 3206-3212, 3214, 3216	A32									9								17										
*3203	-																	17										
*3204	A3			3						9																		
*3205	-					5								16				17										
*3213	-					5				9								17										
*3215	-									8				9								17						
*3301, 330301-3312, 3314-3318	A33																		18									
*3313	-									10				14				18				24						
*3319	-							7										18										
*340101-340102, 3405, 3406	A34									8				11 12														
*3402-3404, 3407	-			3					8			11	12															
*3408	-	3								8				11 12				13										
*3601, 3603	A36	1																					22		24			
*3602	-	1		3																			22		24			
*3604	-	1			4																			22		24		
*4301	A43													12				13										
*6601, 6604-6607	A66								8			11		13														
*6602, 6603	A66									8				12														
*680101-6804, 6806-6814, 6816-6819, 6821-6828, 6830-6843	A68								8												20							
*6805, 6815, 6820	-									8												20				23		
*6829	-								8										18		20	21						
*6901	A69									8																21		
*7401-7409, 7411, 7412N	A74																			19								
*7410	-																					19				24		
*8001	A80						6																	23	24			
HLA-A allele ⁴	ser ⁵																											
Well No.		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24			
B*1827							6																					
Well No.		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24			

Lot No.: 04F

Lot-specific information

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

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

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

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

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

⁴The sequence of the A*0105N has been shown to be identical to A*0104N.

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

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

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

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

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

The sequence of the A*2401 allele has been shown to be in error.

The sequence of the A*2412 allele has been shown to be identical to A*2408.

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

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

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

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

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

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

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

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

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

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

Lot No.: **04F**

Lot-specific information

Lot-specific information

CE
0088

Lot-specific information

CE
0088

Lot No.: **04F**

Lot-specific information

Well No.		25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48
*0703, 0708, 0716, 0732, 0737	B7, B703	25																							48
*0704, 0725	B7	25													38										48
*0707, 0742	B7	25																							48
*0709, 0711, 0717	B7	25											36												48
*0713, 0715	-	25																							48
*0719	-																								48
*0720, 0724	-	25		27																					48
*0727	-	25										35									44				
*0733, 0753	-																								48
*0736	-	25																							
*0738	-	25																							
*0740, 0748, 0751	-																								48
*0750	-	25										35													48
*0754	-	25																							48
*0760	-			27																					48
*0765	-	25																	42						
*080101-080105, 0805, 0808N, 0810, 0811, 0815, 0818, 0819N, 0822-0824, 0827, 0829, 0830N, 0833, 0834	B8, Null	26							32																48
*0802	B8		26						32											44					
*0803	B8		26						32																
*0804	-		26						32			35													48
*0806, 0813, 0820	B8		26																						48
*0807, 0814	-		26																						48
*0809	-		26						32																48
*0812, 0816, 0831	-		26						32																48
*0817			26						32			35													48
*0821	-		26	27					32																48
*0825	-		26	27																					48
*0826, 4207	-								32																48
*0828	-		26									36													48
*0832	-		26						32										42						48
*0835	-		26						32			36													48
*0836	-		26						32																
*1301, 1317, 1320, 1322	B13			27	28						34								41						
*130201-130204, 1308Q, 1315, 1318, 1319	B13				27	28					34														
*1303	-				27	28																			
Well No.		25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48

Lot No.: **04F**

Lot-specific information

49	50	51	52	53	54	55	56	57	58	59	60	61	62	63	64	65	66	67	68	69	70	71	72		Well No.
																				71 72		B7, B703	*0703, 0708, 0716, 0732, 0737		
		51	52																			71	72	B7	*0704, 0725
																				71		B7	*0707, 0742		
			52																			71	72	B7	*0709, 0711, 0717
																				71 72		-	*0713, 0715		
		51	52																			71	72	-	*0719
																				71 72		-	*0720, 0724		
																				70		72	-	*0727	
																				71		-	*0733, 0753		
			52																	70		72	-	*0736	
																				70 72		-	*0738		
			52																			71	72	-	*0740, 0748, 0751
																				71 72		-	*0750		
			52									62										71	72	-	*0754
																				71		-	*0760		
			52				56							64				68				71	72	-	*0765
51																				71 72		B8, Null	*080101-080105, 0805, 0808N, 0810, 0811, 0815, 0818, 0819N, 0822-0824, 0827, 0829, 0830N, 0833, 0834		
		51																		70		72	B8	*0802	
51																				70 72		B8	*0803		
		51																				71	72	-	*0804
																				71 72		B8	*0806, 0813, 0820		
		51																				71	72	-	*0807, 0814
51				54																71		-	*0809		
		51																				71		-	*0812, 0816, 0831
51												62								71 72		*0817			
		51																				71	72	-	*0821
																				71 72		-	*0825		
		51																				71	72	-	*0826, 4207
51																				71 72		-	*0828		
		51																68				71	72	-	*0832
51																				71 72		-	*0835		
		51																				71	72	-	*0836
												62								70		B13	*1301, 1317, 1320, 1322		
												62										70		B13	*130201-130204, 1308Q, 1315, 1318, 1319
												62				65				70		-	*1303		
49	50	51	52	53	54	55	56	57	58	59	60	61	62	63	64	65	66	67	68	69	70	71	72		Well No.

Lot No.: **04F**

Lot-specific information

Well No.		25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48
*1304, 1310	-			27	28								36												
*1306	-			27	28													41							
*1307N	Null			27	28						34							41							
*1309	-				28						34														
*1311	-			27	28						34														
*1312, 1313	-			27	28													41							
*1314	-			27							34														
*1316	-			27	28						34														
*1321	-			27	28																				
*1401, 1407N	B64				28	29																		47	48
*140201-1404, 1409	B65				28		30																	47	48
*1405-140602	-						30																	47	48
*1408, 3925N, 3930, 3932-3934	-					29																		47	48
*15010101-15010102N, 150103, 1526N, 152701, 1532, 1534, 1535, 1538, 1550, 1556, 1557, 1560, 1570, 1571, 1575, 1579N, 1581, 1582, 1592, 1594N, 1596, 1597, 9502, 9504, 9505, 9509-9511N, 9513, 9517, 9518, 9522, 9525, 9528, 9529	B62, Null, B15							31				36						43							
*150102	B62							31		33			36						43						
*150104	B62											36							43						
*150106-150107, 1507	B62			27				31				36							43						
*150108				27								36							43						
*1502, 1588, 9512, 9521	B75							31				36						41		43					
*1503, 1547, 1549, 1561, 1598, 9503, 9523, 9527, 9532	B72								32			35	36						43						
*1504								31				36								43					
*1505, 1506, 1533, 1539, 1540, 1565, 1578, 1584, 9507	B62, B15							31				36							43						
*1508, 151101-151103, 1515	B75							31				36								43					
*1509	B70								32	33	34								43						
Well No.		25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48

Lot No.: **04F**

Lot-specific information

49	50	51	52	53	54	55	56	57	58	59	60	61	62	63	64	65	66	67	68	69	70	71	72		Well No.
													62								70			-	*1304, 1310
													62		64						70			-	*1306
																					70			Null	*1307N
													62									71		-	*1309
													62					67			70			-	*1311
													62								70			-	*1312, 1313
													62								70			-	*1314
										59			62								70			-	*1316
													62								70			-	*1321
																					71			B64	*1401, 1407N
																					71			B65	*140201-1404, 1409
																					71			-	*1405-140602
																						71		-	*1408, 3925N, 3930, 3932-3934
													62								69	71		B62, Null, B15	*15010101-15010102N, 150103, 1526N, 152701, 1532, 1534, 1535, 1538, 1550, 1556, 1557, 1560, 1570, 1571, 1575, 1579N, 1581, 1582, 1592, 1594N, 1596, 1597, 9502, 9504, 9505, 9509-9511N, 9513, 9517, 9518, 9522, 9525, 9528, 9529
													62								69	71		B62	*150102
													62	63							69	71		B62	*150104
													62								69	71		B62	*150106-150107, 1507
													62								69	71			*150108
										57												71		B75	*1502, 1588, 9512, 9521
													62									71		B72	*1503, 1547, 1549, 1561, 1598, 9503, 9523, 9527, 9532
										w			62								69	71			*1504
													62									71		B62, B15	*1505, 1506, 1533, 1539, 1540, 1565, 1578, 1584, 9507
										57											69	71		B75	*1508, 151101-151103, 1515
																					71			B70	*1509
49	50	51	52	53	54	55	56	57	58	59	60	61	62	63	64	65	66	67	68	69	70	71	72		Well No.

Lot No.: 04F

Lot-specific information

Well No.		25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48
*1510, 1537, 1590, 1599, 9533	B71								32		34									43					
*1512, 1514, 1519	B76							31				36	37							43					
*1513	B77							31				36		38				41		43					
*1516, 1567, 1595	B63									33		36		38						43					
*15170101-151702	B63							31		33				38						43					
*1518, 1551, 1552, 1572, 1593, 9508, 9514, 9519, 9534	B71								32		34	36								43					
*1520, 1525	B62							31				36						41		43					
*1521, 1544	B75							31			34	36						41		43					
*1523	-								32		34	36		38						43					
*1524, 1587	B62							31				36		38						43					
*152702	-			27								36								43					
*152703	-			27				31				36								43					
*1528	B15							31				36								43					
*1529	B15								32			36								43					
*1530, 1558, 1563	B62, B15							31												43					
*1531	B75							31				36								43					
*1536	-			27				31				36						41		43					
*1542	-							31												43					
*1543	-							31				36								43					
*1545	B62			27				31												43					
*1546	B72				28			31	32			36								43					
*1548	B62							31												43					
*1553	-				28				32			36								43					
*1554	-								32			35	36							43					
*1555	-			27				31				36								43					
*1562	-								32			35	36					41		43					
*1564	-								32			35	36							43					
*1566	-							31			34	36								43					
*1568	-			27				31	32			35	36							43					
*1569	-								32			35	36							43		45			
*1573	-							31												43					
*1574	-								32			36								43					
*1576, 9501	-							31				36								43					
*1577	-							31										41		43					
*1580	-								32		34	36						41		43					
*1583	-							31	32											43					
*1585	-							31				36						41		43					
*1586	-							31												43					
*1589	-			27				31				36						41		43					
*1591, 9531	-								32			35	36	37						43					
Well No.		25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48

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Lot-specific information

49	50	51	52	53	54	55	56	57	58	59	60	61	62	63	64	65	66	67	68	69	70	71	72		Well No.
																						71		B71	*1510, 1537, 1590, 1599, 9533
												62								69	71			B76	*1512, 1514, 1519
								57													70			B77	*1513
									59												70			B63	*1516, 1567, 1595
																					70			B63	*15170101-151702
																						71		B71	*1518, 1551, 1552, 1572, 1593, 9508, 9514, 9519, 9534
												62										71		B62	*1520, 1525
								57														71		B75	*1521, 1544
																					70			-	*1523
												62								69	70			B62	*1524, 1587
												62								69		71		-	*152702
												62								69		71		-	*152703
																				69		71		B15	*1528
																						71		B15	*1529
												62								69		71		B62, B15	*1530, 1558, 1563
								57														71		B75	*1531
												62									70			-	*1536
									59			62		64								71		-	*1542
												62								69	70			-	*1543
												62								69		71		B62	*1545
												61	62							69		71		B72	*1546
												62										71		B62	*1548
												61	62							69		71		-	*1553
												62								69		71		-	*1554
								57														71		-	*1555
												62										71		-	*1562
																						71		-	*1564
												62								69		71		-	*1566
												62								69		71		-	*1568
												62										71		-	*1569
												62				65	67			69		71		-	*1573
												62										71		-	*1574
			52																	69		71		-	*1576, 9501
												62								69		71		-	*1577
																						71		-	*1580
				54								62										71		-	*1583
												62								69		71		-	*1585
												62		64								71		-	*1586
								57													70			-	*1589
												62										71		-	*1591, 9531
49	50	51	52	53	54	55	56	57	58	59	60	61	62	63	64	65	66	67	68	69	70	71	72		Well No.

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Lot-specific information

Well No.		25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48
*9506	-				28			31	32				36					41		43					
*9515	-								32		34		36							43	44				
*9516	-							31					36							43					
*9520	-							31					36							43					
*9524	-								32		34		36							43					
*9526, 9535, 9540, 9545-9547	-			27				31					36							43					
*9536	-			27				31					36							43		45			
*9537	-			27				31												43					
*9538	-	25						31					36							43					
*9539	-			27				31					36					41		43					
*9541	-			27				31					36							43					
*9542	-		26	27				31					36							43					
*9543	-							31	32				36							43					
*9544	-			27				31					36					41		43					
*9548	-			27				31					36							43					
*9549N	-			27				31					36							43					
*180101-1803, 1805-1808, 1810, 1811, 1813, 1815, 1817N, 1818, 1820, 1821, 1823N-1825, 1827, 1828	B18												36			39			42						
*1804	-												36			39			42						
*1809	-												36			39					44				
*1812	-												36			39			42						
*1819	-												36			39			42						
*1822	-												36			39		41	42						
*1826	-															39			42						
*1829, 3532, 3537, 3553N, 3564, 356801-356802													36						42						
*2701	B27					29											40								
*2702	B27					29											40								
*2703-270402, 270502-2706, 2709, 2710, 2713, 2717, 2720, 2727, 2731, 2735-2737	B27					29											40								
*2707, 2711, 2714, 2715, 2721, 2728, 2732, 2734, 2738, 2743	B27																40								
*2708, 2726, 2740, 2742	B2708					29											40								
*2712	-					29											40								
*2716, 2739	-					29											40								
Well No.		25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48

Lot No.: **04F**

Lot-specific information

49	50	51	52	53	54	55	56	57	58	59	60	61	62	63	64	65	66	67	68	69	70	71	72		Well No.
												61	62									71		-	*9506
																					70		-	*9515	
49													62									71		-	*9516
																				69		71		-	*9520
49																						71		-	*9524
													62								69		71	-	*9526, 9535, 9540, 9545-9547
													62									71		-	*9536
									59				62								69		71	-	*9537
													62									71		-	*9538
								57														71		-	*9539
													62									71		-	*9541
													62								69		71	-	*9542
												61									69		71	-	*9543
								57													69		71	-	*9544
								57													69		71	-	*9548
																					69		71	-	*9549N
																			68			71		B18	*180101-1803, 1805-1808, 1810, 1811, 1813 1815, 1817N, 1818, 1820, 1821, 1823N-1825, 1827, 1828
														64					68			71		-	*1804
																			68		70			-	*1809
													62									71		-	*1812
																			68	69		71		-	*1819
						55														68		71		-	*1822
																				68		71		-	*1826
																			68			71		-	*1829, 3532, 3537, 3553N, 3564, 356801-356802
			52										62								70			B27	*2701
			52				56			60		62									70			B27	*2702
													62									70		B27	*2703-270402, 270502-2706, 2709, 2710, 2713, 2717, 2720, 2727, 2731, 2735-2737
			52				56						62											B27	*2707, 2711, 2714, 2715, 2721, 2728, 2732, 2734, 2738, 2743
													62									71		B2708	*2708, 2726, 2740, 2742
			52				56						62									71		-	*2712
													62								70			-	*2716, 2739
49	50	51	52	53	54	55	56	57	58	59	60	61	62	63	64	65	66	67	68	69	70	71	72		Well No.

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Lot-specific information

Well No.		25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48
*2718	-					29						35					40								
*2719	-																40	41							
*2723	-					29											40								
*2724	-																40								
*2725	-																40								
*2729	-					29						35					40								
*2730	-																40	41							
*2733	-																40								
*2741	-					29						36					40								
*350101-350107, 3507-350803, 3511, 3515, 352001-352002, 3523, 3529, 3540N-3542, 3548, 3550, 3552, 3554, 3557, 3561, 3577, 3578, 3582, 3590-3594	B35											36						41	42						
*350201-350401, 350403, 3506, 3512, 3533, 3534, 3536, 3539, 3555, 3559, 3565Q, 3570, 3574, 3583-3585	B35																	41	42						
*350402	-									33								41	42						
*3505, 3551, 3558, 3572	B35			27								36						42							
*350901-350902, 3518, 3531, 3575, 3588	B35																	42							
*3510, 3528, 3569, 3580	-											36						41	42						
*3513	B35																	41	42						
*351401-351402, 3562	B35											36						41	42						
*3516	-			27								36						41	42						
*3517, 3530	B35			27								36						41	42						
*3519	B35											36						41							
*3521, 3524	-											36						41	42						
*3522	-			27															42						
*3525, 3549	-											36						41							
*3526	-					30						36						41							
*3527	B35											36						41							
*3535	-											36						41	42			45			
*3538	-																	41	42						
*3543, 3567, 3579, 3586	B35											36						42							
Well No.		25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48

Lot No.: **04F**

Lot-specific information

49	50	51	52	53	54	55	56	57	58	59	60	61	62	63	64	65	66	67	68	69	70	71	72		Well No.
													62									71		-	*2718
			52				56						62								70			-	*2719
																					70			-	*2723
			52				56	57					62								70			-	*2724
			52				56						62							69	70			-	*2725
													62								70			-	*2729
			52				56				60		62								70			-	*2730
			52				56						62									71		-	*2733
			52				56						62								70			-	*2741
																			68			71		B35	*350101-350107, 3507-350803, 3511, 3515, 352001-352002, 3523, 3529, 3540N-3542, 3548, 3550, 3552, 3554, 3557, 3561, 3577, 3578, 3582, 3590 3594
																			68			71		B35	*350201-350401, 350403, 3506, 3512, 3533, 3534, 3536, 3539, 3555, 3559, 3565Q, 3570, 3574, 3583-3585
																			68			71		-	*350402
																			68			71		B35	*3505, 3551, 3558, 3572
																			68			71		B35	*350901-350902, 3518, 3531, 3575, 3588
													62									71		-	*3510, 3528, 3569, 3580
													62									71		B35	*3513
																			68	69		71		B35	*351401-351402, 3562
													62									71		-	*3516
																			68			71		B35	*3517, 3530
												61										71		B35	*3519
						55														68		71		-	*3521, 3524
																				68		71		-	*3522
																						71		-	*3525, 3549
																						71		-	*3526
																			68			71		B35	*3527
																			68			71		-	*3535
						53													68			71		-	*3538
																			68	69		71		B35	*3543, 3567, 3579, 3586
49	50	51	52	53	54	55	56	57	58	59	60	61	62	63	64	65	66	67	68	69	70	71	72		Well No.

Lot No.: **04F**

Lot-specific information

Well No.		25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48
*3544	-																	42							
*3545, 3571	-											36	37					41	42						
*3546	-											36						41							
*3547	-				28							36						41							
*3556	-																	41							
*3560	-																		42						
*3563	-				28							36						41							
*3566	-											36							42						
3576	-											36						41	42						
*3581	-																	41	42						
*3587	-								32									42							
*370101-370103, 3703N, 3706, 3713	B37, Null													37				41			44				
*370104	-													37				41			44				
*3702	-					29								37							44				
*3704	-													37				41			44				
*3705	-													37				41			w				
*3707	-	25												37							44				
*3708	-													37				41			44				
*3709	-													37							44				
*3710	-																	41			44				
*3711	-																	41	42						
*3712	-								32					37							44				
*3714	-																	42							
*380101-380102, 3809, 3811-3814, 3816	B38					29																45	46	47	
*380201-380202, 3808, 3815	B38					29														44		45	46	47	
*3803	B16					29						35								44		45	46		
*3804	-																			44		45		47	
*3805	-						30															45	46	47	
*3806	-																					45			
*3807	-					29																45			
*3810	-					29																	46	47	
*3817	-					29								37							44	45	46	47	
*39010101-39010102L, 390103-390105, 3903, 3905-390602, 3909, 3911, 3914, 3915, 3924, 3926-3929, 3931, 3935, 3937, 3938Q, 3940N, 3941, 3944	B3901, B39					29																45		47	48
Well No.		25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48

Lot No.: **04F**

Lot-specific information

49	50	51	52	53	54	55	56	57	58	59	60	61	62	63	64	65	66	67	68	69	70	71	72		Well No.
																			68	69	71			-	*3544
				53															68		71			-	*3545, 3571
								57													71			-	*3546
												61									71			-	*3547
																			68		71			-	*3556
															64				68		71			-	*3560
												61	62								71			-	*3563
																			68		71	72		-	*3566
			52				56												68		71			-	3576
						55													68		71			-	*3581
		51																	68		71	72		-	*3587
				53								62									70			B37, Null	*370101-370103, 3703N, 3706, 3713
				53								62	63								70			-	*370104
												62									70			-	*3702
				53		55						62									70			-	*3704
				53								62										71		-	*3705
												62									70	72		-	*3707
				53															68		70			-	*3708
												62									70			-	*3709
				53								62									70			-	*3710
				53								62										71		-	*3711
				53								62									70			-	*3712
												62									70	71		-	*3714
																					70			B38	*380101-380102, 3809, 3811-3814, 3816
																					70			B38	*380201-380202, 3808, 3815
												62									70			B16	*3803
												62									70			-	*3804
																					70			-	*3805
																			68		70			-	*3806
																			68		70			-	*3807
																					70			-	*3810
																					70			-	*3817
																						71		B3901, B39	*39010101-39010102L, 390103-390105, 3903, 3905-390602, 3909, 3911, 3914, 3915, 3924, 3926-3929, 3931, 3935, 3937, 3938Q, 3940N, 3941, 3944
49	50	51	52	53	54	55	56	57	58	59	60	61	62	63	64	65	66	67	68	69	70	71	72		Well No.

Lot No.: 04F

Lot-specific information

Well No.		25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48
*390201, 3908	B3902, B39					29						35										45			48
*390202, 391301-391302, 3923	B3902, B39											35										45			48
*3904	B39						30															45		47	48
*3907	-					?	?					36										45		47	48
*3910, 3916, 3920	B39																					45			48
*3912, 3945	-																					45		47	48
*3917	-																					45			48
*3918	-					29																45		47	48
*391901	-																	42				45		47	48
*391902	-					29												42				45		47	48
*3922	-					29																45		47	48
*3936	-					29																		47	48
*3939	-					29						35										45			48
*3942	-					29												41				45			48
*3943	-					29						36													48
*400101-400106, 4007	B60, B40				28																				48
*400201-400203, 4004, 40060101-400602, 4039	B61, B40																								
*4003, 4020	B40											36													
*4005	B4005			27																					
*4008	-																								
*4009, 4011, 4018, 4024, 4027, 4029, 4035, 4037, 4040, 4044, 4050, 4056, 4057, 4064, 4075, 4078, 4082, 4085, 4086	B61, B40																								?
*4010, 4022N, 4033, 4036, 4042, 4043, 4049, 4054, 4055, 4061, 4063, 4065-4067, 4073, 4081, 4084, 4087, 4088	Null, B40, B60				28																				?
*4012	-								32			35							43						
*4013, 4019	-																								
*401401-401403, 4053, 407201	-				28																				?
*4015, 4016, 4032	B61	25			28																				?
*4021	-																								?
*4023	-	25			28																				48
Well No.		25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48

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Lot-specific information

49	50	51	52	53	54	55	56	57	58	59	60	61	62	63	64	65	66	67	68	69	70	71	72		Well No.
												62										71		B3902, B39	*390201, 3908
												62										71		B3902, B39	*390202, 391301-391302, 3923
																						71		B39	*3904
																						71		-	*3907
																						71		B39	*3910, 3916, 3920
																						71		-	*3912, 3945
														64			67					71		-	*3917
																			69			71		-	*3918
																			68			71		-	*391901
																			68			71		-	*391902
												62										71		-	*3922
																					69	71		-	*3936
																						71		-	*3939
																						71		-	*3942
																						71		-	*3943
49												61	62									71		B60, B40	*400101-400106, 4007
	50											61	62									71		B61, B40	*400201-400203, 4004, 40060101-400602, 4039
	50											61	62									71		B40	*4003, 4020
	50											61	62									71		B4005	*4005
	50											61										71		-	*4008
	50											61	62									71		B61, B40	*4009, 4011, 4018, 4024, 4027, 4029, 4035, 4037, 4040, 4044, 4050, 4056, 4057, 4064, 4075, 4078, 4082, 4085, 4086
49												61	62									71		Null, B40, B60	*4010, 4022N, 4033, 4036, 4042, 4043, 4049, 4054, 4055, 4061 4063, 4065-4067, 4073, 4081, 4084, 4087, 4088
49												62										71		-	*4012
	50							58	60			62									70		-	*4013, 4019	
												61	62									71		-	*401401-401403, 4053, 407201
												61	62									71	72	B61	*4015, 4016, 4032
49												62										71		-	*4021
49												61	62									71		-	*4023
49	50	51	52	53	54	55	56	57	58	59	60	61	62	63	64	65	66	67	68	69	70	71	72		Well No.

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Lot-specific information

Well No.		25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48
*4025	-				28																				?
*4026	B21									33															?
*4028	-									33								41							?
*4030, 4034	-				28																				?
*4031, 4045, 4080	-				28																				?
*4038, 4052	-				28								36												?
*4046	-											35					40								?
*4047	-				28																				
*4048	-				28						34														?
*4051, 4079	-				28																				48
*4058	-				28																				?
*4059	-				28								36												48
*4060	-				28								36												48
*4068	-																								?
*4069	-				28																				?
*4070, 4089-4091	-																								
*4071	-			27																					?
*407202, 4077	-				28																				48
*4074	-																								?
*4076	-				28																				?
*4083	-																								?
*4092	-				28																				
*4101, 4106, 4107	B41				28				32																48
*4102	B41				28				32																48
*410301-410302	B41				28				32																48
*4104	-				28																				48
*4105	-				28				32																48
*4108	-	25			28				32							38									48
*4201, 4202, 4206	B42								32																48
*4204	-								32																48
*420501-420502	-	25							32							38									48
*4208	-								32																48
*4209	-												36												48
*44020101-440205, 4411, 4416, 4419N, 4421-4424, 4427, 4433, 4434, 4448, 4451, 4452N, 4455, 4459, 4463	B44, B47, Null				28													41							
*440301-4405, 4413, 4426, 442801-4430, 4432, 4435, 4436, 4438, 4439, 4442, 4445, 4456N, 4458N, 4461N	B44				28													41							
Well No.		25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48

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49	50	51	52	53	54	55	56	57	58	59	60	61	62	63	64	65	66	67	68	69	70	71	72		Well No.
49												61										71		-	*4025
	50											61	62									71		B21	*4026
	50					55						61	62									71		-	*4028
												61	62									71	72	-	*4030, 4034
								57				61	62									71	72	-	*4031, 4045, 4080
49												61	62									71		-	*4038, 4052
49													62									71		-	*4046
49													62								70		-	*4047	
49												61	62					67				71		-	*4048
49												61	62									71		-	*4051, 4079
												61	62		64							71		-	*4058
												61	62									71	72	-	*4059
49												61	62									71		-	*4060
	50											61										71		-	*4068
49												61										71		-	*4069
	50											61	62									71		-	*4070, 4089-4091
	50											61	62			65		67				71		-	*4071
												61	62									71		-	*407202, 4077
49	50											61	62									71		-	*4074
49													62											-	*4076
												61	62									71		-	*4083
49												61	62									71		-	*4092
		51			54							61	62									71		B41	*4101, 4106, 4107
		51										61	62									71	72	B41	*4102
		51										61	62									71		B41	*410301-410302
		51										61	62									71	72	-	*4104
		51			54							?	62									71		-	*4105
		51										61	62									71		-	*4108
		51	52																			71	72	B42	*4201, 4202, 4206
		51	52		54																	71		-	*4204
		51	52																			71	72	-	*420501-420502
			52																			71		-	*4208
		51	52																			71	72	-	*4209
					53								62	63								70		B44, B47, Null	*44020101-440205, 4411, 4416, 4419N, 4421-4424, 4427, 4433, 4434, 4448, 4451, 4452N, 4455, 4459, 4463
					53								62									70		B44	*440301-4405, 4413, 4426, 442801-4430, 4432, 4435, 4436, 4438, 4439, 4442, 4445, 4456N, 4458N, 4461N
49	50	51	52	53	54	55	56	57	58	59	60	61	62	63	64	65	66	67	68	69	70	71	72		Well No.

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Well No.		25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48
*4406	B44																	41							
*4407																		41							
*4408	B44			27														41							
*4409	B12				28													41							
*4410	-				28							35						41		43					
*4412	-				28													41							
*4414	-				28				32									41							
*4415	-				28				32			35													
*4417, 4443	-				28								36	37				41							
*4418	-				28				32			35													
*4420	-				28				32																
*4425, 4450	-				28													41							
*4431	-				28																				
*4437	-				28													41							
*4440	-											35					40	41							
*4441	-				28																				
*4444	-											35					40	41							
*4446	-				28													41							
*4447	-				28																				
*4449	-			26	28													41							
*4450	-				28													41							
*4453	-				28																				
*4454	-				27 28																				
*4457	-				27													41							
*4460	-				27 28													41							
*4462	-				28				32	33								41							
*446401-446402	-				28													41							
*4501, 4505, 4507	B45				28				32			35													48
*4502, 4503	-				28				32																48
*4504	-				28				32																48
*4506	-				28				32			35													48
*4508	-				28				32																48
*4509	-				28				32				36	37											48
*460101-460102, 4604, 4605, 4607N, 4609	B46								31				36												
*4602	-								31				36												
*4603, 4608	-								31				36												
*4606	-								31				36												
*4610	-								31				36												
*4611	-				27				31																
*4612, 4614-4616	-				27				31				36												
*4613	-				27				31				36												
*47010101-47010102	B47				28																				
Well No.		25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48

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49	50	51	52	53	54	55	56	57	58	59	60	61	62	63	64	65	66	67	68	69	70	71	72		Well No.
49				53	54						60			63					68		70			B44	*4406
				53									62								70				*4407
				53									62	63							70			B44	*4408
				53								61	62	63								71		B12	*4409
				53									62				65				70			-	*4410
				53											63						70			-	*4412
				53									62								70			-	*4414
					54								62				65				70			-	*4415
				53									62								70			-	*4417, 4443
					54				58				62				65				70			-	*4418
				53	54								62	63							70			-	*4420
				53					58		60		62								70			-	*4425, 4450
				53									62								70			-	*4431
													62								70			-	*4437
				53									62								70			-	*4440
				53									62	63							70			-	*4441
				53									62	63							70			-	*4444
				53								61	62									71		-	*4446
				53									62								70			-	*4447
				53									62	63							70			-	*4449
				53					58		60		62								70			-	*4450
				53									62	63							70			-	*4453
				53									62								70			-	*4454
				53									62								70			-	*4457
				53									62								70			-	*4460
				53									62								70			-	*4462
													62								70			-	*446401-446402
						54							61	62			65						71		B45
					54							61	62								71			-	*4502, 4503
					54							61	62			65					71			-	*4504
			52		54							61				65					71			-	*4506
					54							61	62		64						71			-	*4508
					54							61	62								71			-	*4509
			52			55														69		71		B46	*460101-460102, 4604, 4605, 4607N, 4609
			w			55														69		71		-	*4602
			52			55																71		-	*4603, 4608
49			52			55																71		-	*4606
			52			55							62							69		71		-	*4610
			52			55							62			65					71		-	*4611	
			52			55							62							69		71		-	*4612, 4614-4616
			52			55							62								71		-	*4613	
							56						62								70			B47	*47010101-47010102
49	50	51	52	53	54	55	56	57	58	59	60	61	62	63	64	65	66	67	68	69	70	71	72		Well No.

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Well No.		25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48
*4702	-				28																				
*4703	-				28																				
*4704, 4705	-				28	29																			
*480101-480102, 4807, 4809, 4811, 4819	B48											35													48
*4802	-											35	36					41							48
*480301-480302	B48											35													48
*4804	B48											35													48
*4805, 4808	B48	25										35													48
*4806	-																								48
*4810, 4812	-											35													48
*4813	-											35													48
*4814	-											35	36												48
*4815	-	25										35													48
*4816	-											35													48
*4817	-											35													48
*4818	-											35													
*4901	B49				28																				
*4902	-				28																				
*4903	-																								
*4904, 4905	-				28								36												
*5001, 5004	B50				28																				48
*5002	B45				28							35													48
*510101, 510103, 510105-510108, 510201, 510203, 5103, 5107, 510901, 5111N, 5112, 511302, 5114, 5117-5119, 5122, 5123, 5126-5130, 5132, 5133, 5138- 5141N, 5143, 5148, 5149, 5151-5153, 5155	B51, B5102, B5103, Null									33															
*510102, 510109, 510202, 5105, 510902	B51									33															
*510104, 511301, 5116, 5121, 512401- 512402, 5131, 5134, 5135	B51, B52																								
*5104, 5146	B51									33								41							
*5106	B51									33															
*5108, 5120, 5144N	B51								32	33															
*5110	-																								
*5115	-																								
Well No.		25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48

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49	50	51	52	53	54	55	56	57	58	59	60	61	62	63	64	65	66	67	68	69	70	71	72		Well No.
							56					61	62								71			-	*4702
							56					62									70	w		-	*4703
												62									70			-	*4704, 4705
								57				62										71	72	B48	*480101-480102, 4807, 4809, 4811, 4819
												62									71			-	*4802
49												62									71			B48	*480301-480302
								57				62									71			B48	*4804
												62									71	72		B48	*4805, 4808
								57													71	72		-	*4806
												62									71	72		-	*4810, 4812
												62									71			-	*4813
												62									71	72		-	*4814
								57				62									71	72		-	*4815
								57													71	72		-	*4816
49												62									71	72		-	*4817
								57				62									70		72	-	*4818
								58	59			62				65					70			B49	*4901
									59			62				65					70			-	*4902
									59			62				65					70			-	*4903
								58	59			62									70			-	*4904, 4905
								59				61	62			65					71			B50	*5001, 5004
									59			61	62			65					71			B45	*5002
					54					59	60							68			70			B51, B5102, B5103, Null	*510101, 510103, 510105-510108, 510201, 510203, 5103, 5107, 510901, 5111N, 5112, 511302, 5114, 5117-5119, 5122, 5123, 5126-5130, 5132, 5133, 5138-5141N, 5143, 5148, 5149, 5151-5153, 5155
									59	60								68			70			B51	*510102, 510109, 510202, 5105, 510902
					54					59	60							68			70			B51, B52	*510104, 511301, 5116, 5121, 512401-512402, 5131, 5134, 5135
					54	55				60								68			70			B51	*5104, 5146
					54					60								68			70			B51	*5106
					54					59	60							68			70			B51	*5108, 5120, 5144N
					54					60								68			70			-	*5110
										60						65				68	70			-	*5115
49	50	51	52	53	54	55	56	57	58	59	60	61	62	63	64	65	66	67	68	69	70	71	72		Well No.

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Well No.		25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48
*5136	-								32																
*5137	-									33			36												
*5142	-																	41							
*5145	-												36												
*5150, 5154	-									33															
*5156	-									33								41							
*5157	-									33															
*520101, 520103, 5204, 5205, 5207, 5210 5212	B52									33															
*520102, 520104-5203, 520601-520602, 5209	B52									33															
*5208	-																								
*5213										33															
*5214	-																								
*530101-530104, 5305, 5308, 5310, 5316	B53												36					41							
*5302	B53												36					41							
*5303, 5309, 5311- 5313	-												36					41							
*5304, 5307	-																	41							
*5306	B53												36					41							
*5314	-			27									36												
*5315	-												36					41							
*5401, 5402, 5405N, 5407, 5408N, 5410, 5413	B54																								
*5403	-																								
*5404, 5411, 5415	-																								
*5406	-												36												
*5409, 5414	-												36												
*5412	-																								
*550101-550104, 5503, 5505, 5511, 5515, 5525, 5529, 5531	B55																								
*550201-550202, 5507, 5510, 5512, 5516, 5519, 5526, 5530	B54, B55																								
*5504, 5508, 5513, 5527, 5615, 5619N, 5622	B55																								
*5509, 5517, 5528	-																								
*5514	-												36					41							
*5518	-												35												
Well No.		25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48

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49	50	51	52	53	54	55	56	57	58	59	60	61	62	63	64	65	66	67	68	69	70	71	72		Well No.
				54				59	60							68			70					-	*5136
				54				59	60							68			70					-	*5137
				53	54				60							68			70					-	*5142
				54					60							68			70					-	*5145
								59								68			70					-	*5150, 5154
				54	55											68			70					-	*5156
				54				59								68			70					-	*5157
								59	60			62							70					B52	*520101, 520103, 5204, 5205, 5207, 5210 5212
				54				59	60			62							70					B52	*520102, 520104-5203, 520601-520602, 5209
								59	60			62							70					-	*5208
								59				62							70					-	*5213
								59				62							70					-	*5214
								60								68			70					B53	*530101-530104, 5305, 5308, 5310, 5316
					55			60								68			70					B53	*5302
																68			70					-	*5303, 5309, 5311- 5313
								60								68			70					-	*5304, 5307
				54	55			60								68			70					B53	*5306
								60								68			70					-	*5314
								60								68			70			72		-	*5315
			52				56					63	64								71			B54	*5401, 5402, 5405N, 5407, 5408N, 5410, 5413
			52				56					63				65					71			-	*5403
			52				56					63									71			-	*5404, 5411, 5415
			52				56					63							69		71			-	*5406
			52				56					63									71			-	*5409, 5414
			52				56					63	64							70				-	*5412
			52				56		59				64								71			B55	*550101-550104, 5503, 5505, 5511, 5515, 5525, 5529, 5531
			52				56						64								71			B54, B55	*550201-550202, 5507, 5510, 5512, 5516, 5519, 5526, 5530
			52				56														71			B55	*5504, 5508, 5513, 5527, 5615, 5619N, 5622
			52				56		59											71				-	*5509, 5517, 5528
			52				56									66					71			-	*5514
												62	64								71			-	*5518
49	50	51	52	53	54	55	56	57	58	59	60	61	62	63	64	65	66	67	68	69	70	71	72		Well No.

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Well No.		25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48
*5520	-																								
*5521	-																								
*5522	-										34														
*5523, 5532, 5618	-												36												
*5524	-										34														
*5601, 5608, 5614, 5616, 5620	B56																								
*5602, 5604	B56																								
*5603	B22												36												
*560501	-										33														
*560502	-										33														
*5606	B78										33								42						
*5607	-																								
*5609	-												36						41						
*5610	-																								
*5611, 5612	-																		41						
*5613	-										32														
*5617	-																								
*5621	-										33														
*5623	-																								
*570101-570103, 5706, 5708, 5710	B57												36						41						
*5702-5705	B57																		41						
*5707	-																		41						
*5709	-										32								41						
*5711	-												36												
*5712	-																		41						
*5713	-												36												
*5714	-			27									36						41						
*5715	-			27									36						41						
*5716	-												36						41						
*5717	-			27															41						
*580101, 5804, 5805, 5810N-5814	B58												36						41						
*580102, 5815	-												36						41						
*5802, 5806	B58												36												
*5807	-												36	37											
*5808	-										33														
*5809	-												36						41						
*5816													36												
*5817N, 5819													36						41						
*5818				27									36												
*5901	B59																								
*5902	-																								
Well No.		25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48

Lot No.: **04F**

Lot-specific information

49	50	51	52	53	54	55	56	57	58	59	60	61	62	63	64	65	66	67	68	69	70	71	72		Well No.
		51	52		54		56															71		-	*5520
			52				56			59				64						69		71		-	*5521
			52				56															71		-	*5522
			52				56															71		-	*5523, 5532, 5618
			52				56			59												71		-	*5524
			52				56									65						71		B56	*5601, 5608, 5614, 5616, 5620
			52				56									65		67				71		B56	*5602, 5604
			52				56													69		71		B22	*5603
			52				56			59				64								71		-	*560501
			52				56			59												71		-	*560502
			52				56			59				64								71		B78	*5606
			52				56									65					70			-	*5607
			52				56															71		-	*5609
			52				56							64				67				71		-	*5610
			52				56															71		-	*5611, 5612
			52		54		56									65						71		-	*5613
																65						71		-	*5617
			52				56			59											70			-	*5621
														64								71		-	*5623
										60							66				70			B57	*570101-570103, 5706, 5708, 5710
										60							66				70			B57	*5702-5705
				53						60							66				70			-	*5707
				53						60							66				70			-	*5709
										60							66				70			-	*5711
													62				66					71		-	*5712
										60			62				66				70			-	*5713
						55				60			62				66				70			-	*5714
										60			62				66				70			-	*5715
										60			62								70			-	*5716
													62				66				70			-	*5717
										60								67			70			B58	*580101, 5804, 5805, 5810N-5814
										60			62					67			70			-	*580102, 5815
										60								67			70			B58	*5802, 5806
										60								67			70			-	*5807
					54					59	60							67			70			-	*5808
						55				60								67			70			-	*5809
										60			62					67			70				*5816
													62					67			70				*5817N, 5819
													62					67			70				*5818
														64							70			B59	*5901
										60											70			-	*5902
49	50	51	52	53	54	55	56	57	58	59	60	61	62	63	64	65	66	67	68	69	70	71	72		Well No.

Lot No.: 04F

Lot-specific information

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

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

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

In addition, wells number 30, 33, 34, 44, 45, 54, 59, 66 and 72 contain the primer pair giving rise to the shorter, 800 bp, internal positive control band in order to allow kit identification.

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

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

⁴The nucleotide sequences of the B*3589 and B*4093 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 B*1559 allele has been renamed B*3544.

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

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

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

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

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

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

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

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

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

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

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

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

Lot No.: **04F**

Lot-specific information

49	50	51	52	53	54	55	56	57	58	59	60	61	62	63	64	65	66	67	68	69	70	71	72		Well No.
																				70				-	*5903
			52																			71		B67	*670101
			52																			71		B67	*670102
			w																			71		-	*6702
			52																	69	71			B73	*7301
										59					64				68			71		B78	*7801, 780202, 7803
										59									68			71		B78	*780201, 7804
										59			62									71		-	*7805
										59			62									71		-	*7806
			52				56	57														71	72	B81	*8101
			52					57														71	72	-	*8102
			52					57														71	72	-	*8103, 8104N
			52				56									65						71		-	*8201, 8202
			52	53			56							63								71		-	*8301
																								ser. ⁵	HLA-B allele ⁴
49	50	51	52	53	54	55	56	57	58	59	60	61	62	63	64	65	66	67	68	69	70	71	72		Well No.
																									Cw*0206
																									Cw*0305, 0325, 0327
																									Cw*0746
															64										Cw*150204
49	50	51	52	53	54	55	56	57	58	59	60	61	62	63	64	65	66	67	68	69	70	71	72		Well No.

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

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

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

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

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

The B*0826 and the B*4207 alleles give rise to identical amplification patterns with the HLA-B low resolution primer set. These alleles can be separated by the respective high resolution primer sets.

The B*1408 and the B*3925N, B*3930 and B*3932 to 3934 alleles give rise to identical amplification patterns with the HLA-B low resolution primer set. These alleles can be separated by the respective high resolution primer sets.

The B*1829 and the B*3523, B*3537, B*3553N, B*3564, B*3566 and B*356801-356802 alleles give rise to identical amplification patterns with the HLA-B low resolution primer set. These alleles can be separated by the respective high resolution primer sets.

The B*5504, B*5508, B*5513, B*5527 and the B*5615, B*5619N and B*5622 give rise to identical amplification patterns with the HLA-B low resolution primer set. These alleles can be separated by the respective high resolution primer sets.

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

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

'ser', serological HLA specificity.

'w', might be weakly amplified.

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

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Lot-specific information

INTERPRETATION TABLE																									
HLA-Cw low resolution SSP typing																									
Amplification patterns of the Cw*0102 to Cw*1802 alleles																									
	Well																								
	73	74	75	76	77	78	79	80	81	82	83	84	85	86	87	88	89	90	91	92	93	94	95		
Length of spec.	155	270	280	155	280	125	165	130	245	115	340	100	130	220	255	95	110	190	225	220	325	135	160		
PCR product(s)	370							240	425	175		160	250			255	335	250	260	425	380		235		
								355		240		220													
Length of int.	800	800	800	1070	800	1070	1070	800	800	800	1070	1070	800	800	800	1070	1070	1070	800	800	1070	1070	1070		
pos. control ¹																									
5'-primer(s) ²	89	2 nd	106	477	105	112	176	28	47	1 st	1 st	361	201	361	98	98	201	201	2 nd	47	355	105	97		
	5'-gAA ^{3'}	5'-CCA ^{3'}	5'-CTg ^{3'}	5'-gCC ^{3'}	5'-gCT ^{3'}	5'-CCT ^{3'}	5'-gCA ^{3'}	5'-TCA ^{3'}	5'-Agg ^{3'}	5'-CgA ^{3'}	5'-CgA ^{3'}	5'-AgT ^{3'}	5'-CCA ^{3'}	5'-AgT ^{3'}	5'-CTA ^{3'}	5'-CTC ^{3'}	5'-CCA ^{3'}	5'-CCA ^{3'}	5'-CCA ^{3'}	5'-Agg ^{3'}	5'-TCA ^{3'}	5'-gCT ^{3'}	5'-TCg ^{3'}		
	368					118		2 nd	648	176		419	2 nd			485	409	2 nd	112	361	412	459	418		
	5'-gTg ^{3'}					5'-CCA ^{3'}		5'-CCA ^{3'}	5'-CAC ^{3'}	5'-gCA ^{3'}		5'-gTC ^{3'}	5'-CCA ^{3'}			5'-CAA ^{3'}	5'-ggC ^{3'}	5'-CCA ^{3'}	5'-CCT ^{3'}	5'-AgT ^{3'}	5'-ATA ^{3'}	5'-gAT ^{3'}	5'-Agg ^{3'}		
										527									361				419		
										5'-TAC ^{3'}								5'-AgT ^{3'}					5'-gTC ^{3'}		
3'-primer(s) ³	201	559	343	589	343	201	302	97	302	175	302	474	289	538	312	311	270	341	341	302	3 rd	201	289		
	5'-CTC ^{3'}	5'-CTC ^{3'}	5'-ACC ^{3'}	5'-CTT ^{3'}	5'-ACT ^{3'}	5'-CTT ^{3'}	5'-ggT ^{3'}	5'-gTC ^{3'}	5'-ggC ^{3'}	5'-CCg ^{3'}	5'-ggT ^{3'}	5'-gCA ^{3'}	5'-AgC ^{3'}	5'-CCA ^{3'}	5'-AgT ^{3'}	5'-ggT ^{3'}	5'-TAG ^{3'}	5'-CgT ^{3'}	5'-Cgg ^{3'}	5'-ggT ^{3'}	5'-CTC ^{3'}	5'-CTC ^{3'}	5'-AgC ^{3'}		
	201							213	853	311		477	539	538		539	3 rd	341	512	538		559	539		
	5'-CTT ^{3'}							5'-Cgg ^{3'}	5'-CAT ^{3'}	5'-ggT ^{3'}		5'-gCA ^{3'}	5'-TCT ^{3'}	5'-gCA ^{3'}		5'-TCA ^{3'}	5'-CTC ^{3'}	5'-ggT ^{3'}	5'-CCA ^{3'}	5'-CCg ^{3'}		5'-CTC ^{3'}	5'-TCT ^{3'}		
	3 rd							420		601		538						527							
	5'-CTC ^{3'}							5'-gCT ^{3'}		5'-CTT ^{3'}		5'-gCA ^{3'}						5'-CCg ^{3'}							
Well No.	73	74	75	76	77	78	79	80	81	82	83	84	85	86	87	88	89	90	91	92	93	94	95		
HLA-Cw allele ⁴																									
*010201-010205, 0106-0108, 0111-0113, 0115-0120	73																			92					
*0103	73																			92	93				
*0104	73											84		86											
*0105, 0122	73																								
*0109	73													86											
*0110	73	74																			92				
*0114	73										83										92				
*0121	73											84	85												
*020201		74	75			78					83				w										
Well No.	73	74	75	76	77	78	79	80	81	82	83	84	85	86	87	88	89	90	91	92	93	94	95		

Lot No.: **04F**

Lot-specific information

Well No.	73	74	75	76	77	78	79	80	81	82	83	84	85	86	87	88	89	90	91	92	93	94	95
*020202-020203, 020205-0203, 0207-0211, 0215, 0216, 0219, 0220		74	75			78					83				87								
*0204		74	w			78					83				87								
*0205, 0217		74	75			78					83			86	87								
*0206		74	75			78		80			83				87		89						
*0212		74	75			78							85		87								
*0213, 0218		74	75			78					83				87		90						
*0214		74	w			78					83												
*0221		74	75								83				87								
*0222		74	75			78					83				87						93		
*030201-030203, 0305, 0317, 0325, 0327, 0333, 0335, 0336			75	76																		94	
*030301-030305, 031101-0312, 0320N-0322Q, 0330, 0331, 0343, 0349, 0350				76	77																93	94	
*030401-030406, 0306, 0308, 0309, 0314, 0319, 0323, 0324, 0326, 0328, 0332, 0334, 0337-033802, 0340, 0342, 0344, 0346-0348				75	76																93	94	
*030407, 0341			75																		93	94	
*0307, 0345			75	76							83				87						93	94	
*0310, 0329			75	76											87						93	94	
*0313				76	77																	94	
*0315			75	76							83				87							94	
*0316			75																			94	
*0318				76																	93		
*0339				76				80													93		
*04010101-040105, 040401-0405, 0407-0409N, 0412-041502, 0417-0420, 0424-0428, 0430, 0431, 0434						78					83		85				90				93		
*0403, 0406			75			78					83		85		87		90				93		
*0410						78					83						90				93		
*0411						78									88		91				93		
*0416			75								83		85		87		90				93		
*0423						78					83		85				90						
*0429						78							85		88		90				93		
*0432		74				78					83		85				90				93	94	
*0433						78					83		85					91			93		
*050101-050104, 0503, 0505-0510, 0512-0515, 0518, 0519						79					83				87						93		
*0504							79				83				87								
Well No.	73	74	75	76	77	78	79	80	81	82	83	84	85	86	87	88	89	90	91	92	93	94	95

Lot No.: **04F**

Lot-specific information

Well No.	73	74	75	76	77	78	79	80	81	82	83	84	85	86	87	88	89	90	91	92	93	94	95
*0511							79				83				87	88					93		
*0516							79				83				87					92	93		
*0517							79				83				87	88		90			93		
*06020101-06020102, 060203, 0607, 0610, 0612, 0613, 0615, 0616N								80			83			86									95
*0603			75					80			83			86	87							94	
*0604								80			83												95
*0605							79	80			83							90		92			
*0606								80			83									92			95
*0608			74					80			83			86									95
*0609								80			83			86							93		95
*0611								80						86									95
*0614								80			83										93		95
*0617											83			86						92			95
*070101-0706, 0708, 0711-0725, 072701-072702, 0729, 0730, 0732N, 0735-0738, 0742, 0744-0748, 0750-0757										81													95
*0707, 0709, 0749										81		83								92			95
*0710, 0728, 0741, 0743										81											93		95
*0726, 0733N, 0739, 0740										81													
*0731										81								90					95
*080101-080102, 0803, 0808, 0814, 0816											82							90				93	
*0802, 0815											82											93	
*0804, 0813											82					88						93	
*0805											82			85								93	
*0806											82							90				93	
*0807											82								91			93	
*0809, 0811											82							90					
*0810							79				82	83			87			90				93	
*0812											82									92		93	
*120201-120203, 1210, 1217, 1218												84	85										
*12030101-12030102, 120303, 120305-120306, 1206, 1207, 1211-1213, 1219												84	85	86									
*120302													85	86									
*120304												84		86									
*120401											83			86	87								
*120402											83	84	85	86	87								
*1205											83	84		86	87								
*1208												84	85					89					
Well No.	73	74	75	76	77	78	79	80	81	82	83	84	85	86	87	88	89	90	91	92	93	94	95

Lot No.: **04F**

Lot-specific information

Well No.	73	74	75	76	77	78	79	80	81	82	83	84	85	86	87	88	89	90	91	92	93	94	95
*1209											83				87					92			
*1214													85					90	91				
*1215								80				84	85	86			89						
*1216								80				84	85										95
*1220												84	85										
*1221							79				83	84			87								
*140201-1403, 1405, 1407N																88				92			
*1404											83					88				92			
*1406, 1408, 1409																88							
*150201-150204, 1508, 151002, 1513, 1515, 1517, 1518			75					80			83				87		89					93	
*1503, 1516			75					80			83		85		87		89				93		
*1504-1506, 1509, 1519, 1520			75								83				87		89				93		
*1507			75					80									89				93		
*151001								80			83				87		89				93		
*1511			75			78		80			83				87		89				93		
*1512					77			80			83				87		89				93		
*1521			75					80							87		89				93		
*160101-160103, 1606-1608, 1610, 1611													85					90					95
*1602, 1609											83		85		87			90					95
*160401														86				90					
*1701-1704		74									83				87				91		93		
*1801, 1802											83									92	93		95
*1803		74									83									92	93	94	95
HLA-Cw allele ⁴																							
Well No.	73	74	75	76	77	78	79	80	81	82	83	84	85	86	87	88	89	90	91	92	93	94	95
B*1403																				92			
B*6702													85										
Well No.	73	74	75	76	77	78	79	80	81	82	83	84	85	86	87	88	89	90	91	92	93	94	95

Lot No.: 04F

Lot-specific information

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

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

In addition, wells number 73, 74, 77, 80, 81, 82, 85, 86, 87, 91 and 92 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, 3rd or 4th exon or the 1st or 2nd intron, matching the specificity-determining 3'-end of the primer is given. Codon numbering as on the www.ebi.ac.uk/imgt/hla web site. The sequence of the 3 terminal nucleotides of the primer is given.

³The nucleotide position, in the 1st, 2nd, 3rd or 4th exon or the 3rd intron, matching the specificity-determining 3'-end of the primer is given in the anti-sense direction. Codon numbering as on the www.ebi.ac.uk/imgt/hla web site. The sequence of the 3 terminal nucleotides of the primer is given.

⁴The sequence of the Cw*0101 allele has been shown to be identical to Cw*0102.

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

The sequence of the Cw*020204 allele has been shown to be identical to Cw*0210.

The sequence of the Cw*0301 allele has been shown to be identical to Cw*0304.

The sequence of the Cw*0402 allele has been shown to be identical to Cw*04011.

The sequence of the Cw*0421 allele has been shown to be identical to Cw*041502.

The sequence of the Cw*0422 allele has been shown to be identical to Cw*0421.

The sequence of the Cw*0601 allele has been shown to be identical to Cw*0602.

The sequence of the Cw*0601 allele has been shown to be identical to Cw*0602.

The sequence of the Cw*0734 allele has been shown to be identical to Cw*072702.

The sequence of the Cw*1101 allele has been shown to be in error.

The sequence of the Cw*1201 allele has been shown to be identical to Cw*12022.

The nucleotide sequence of Cw*1301 has been shown to be in error.

The sequence of the Cw*1401 allele has been shown to be identical to Cw*1402.

The sequence of the Cw*1501 allele has been shown to be identical to Cw*1502.

The sequence of the Cw*1514 allele has been shown to be identical to Cw*151002.

The sequence of the Cw*1603 allele has been shown to be identical to Cw*1403.

The sequence of the Cw*16042 allele has been shown to be identical to Cw*16041.

The sequence of the Cw*1605 allele has been shown to be identical to Cw*16041.

Lot No.: **04F**

Lot-specific information

CELL LINE VALIDATION SHEET																				
HLA-A low resolution primer set																				
					Well															
					1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
				Lot No.:	200739101	200739102	200739103	200739104	200847005	200739106	200739107	200739108	200739109	200739110	200739111	200739112	200739113	200739114	20847015	200847016
	IHWC cell line		A*	A*																
1	9001	SA	*2402		-	-	-	-	+	-	+	-	-	-	-	-	-	-	-	-
2	9280	LK707	*0201		-	+	-	-	-	-	-	-	-	-	-	-	-	-	-	-
3	9011	E4181324	*0101		+	-	-	+	-	-	-	-	-	-	-	-	-	-	-	-
4	9275	GU373	*3001		-	-	-	-	-	-	-	-	-	-	-	-	-	-	+	+
5	9009	KAS011	*0101		+	-	-	+	-	-	-	-	-	-	-	-	-	-	-	-
6	9353	SM	*0201	*2603	-	+	-	-	-	-	-	+	-	-	+	-	+	-	-	-
7	9020	QBL	*2601		-	-	-	-	-	-	-	+	-	+	-	-	+	-	-	-
8	9007	DEM	*0201		-	+	-	-	-	-	-	-	-	-	-	-	-	-	-	-
9	9026	YAR	*2601		-	-	-	-	-	-	-	+	-	+	-	-	+	-	-	-
10	9107	LKT3	*2402		-	-	-	-	+	-	+	-	-	-	-	-	-	-	-	-
11	9051	PITOUT	*2902		-	-	-	-	-	-	-	-	-	-	-	-	-	+	-	-
12	9052	DBB	*0201		-	+	-	-	-	-	-	-	-	-	-	-	-	-	-	-
13	9067	BTB	*0201		-	+	-	-	-	-	-	-	-	-	-	-	-	-	-	-
14	9071	OLGA	*3101		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
15	9075	DKB	*2402		-	-	-	-	+	-	+	-	-	-	-	-	-	-	-	-
16	9037	SWEIG007	*2902		-	-	-	-	-	-	-	-	-	-	-	-	-	+	-	-
17	9008	WILJON	*2501		-	-	-	-	-	-	-	+	+	-	-	-	+	-	-	-
18	9257	32367	*3303	*7401	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
19	9038	BM16	*0201		-	+	-	-	-	-	-	-	-	-	-	-	-	-	-	-
20	9059	SLE005	*0201		-	+	-	-	-	-	-	-	-	-	-	-	-	-	-	-
21	9064	AMALA	*0217		-	+	-	-	-	-	W	-	-	-	-	-	-	-	-	-
22	9056	KOSE	*0201		-	+	-	-	-	-	-	-	-	-	-	-	-	-	-	-
23	9124	IHL	*0201	*3401	-	+	-	-	-	-	-	+	-	-	+	+	-	-	-	-
24	9035	JBUSH	*3201		-	-	-	-	-	-	-	-	+	-	-	-	-	-	-	-
25	9049	IBW9	*3301		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
26	9285	WT49	*0205		-	+	-	-	-	-	-	-	-	-	-	-	-	-	-	-
27	9191	CH1007	*2410	*2901	-	-	-	-	+	-	+	-	-	-	-	-	-	+	-	-
28	9320	BEL5GB	*0201	*2902	-	+	-	-	-	-	-	-	-	-	-	-	-	+	-	-
29	9050	MOU	*2902		-	-	-	-	-	-	-	-	-	-	-	-	-	+	-	-
30	9021	RSH	*3001	*6802	-	-	-	-	-	-	-	+	-	-	-	-	-	-	+	+
31	9019	DUCAF	*3002		-	-	-	-	-	-	-	-	-	-	-	-	-	-	+	+
32	9297	HAG	*0201		-	+	-	-	-	-	-	-	-	-	-	-	-	-	-	-
33	9098	MT14B	*3101		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
34	9104	DHIF	*3101		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
35	9302	SSTO	*3201		-	-	-	-	-	-	-	-	+	-	-	-	-	-	-	-
36	9024	KT17	*0206	*1101	-	+	-	+	-	-	-	-	-	-	+	-	-	-	-	-
37	9065	HHKB	*0301		-	-	+	-	-	-	-	-	-	-	-	-	+	-	-	-
38	9099	LZL	*0217		-	+	-	-	-	-	W	-	-	-	-	-	-	-	-	-
39	9315	CML	*0101	*0301	+	-	+	+	-	-	-	-	-	-	-	-	+	-	-	-
40	9134	WHONP199	*0207	*3001	-	+	-	-	-	-	-	-	-	-	-	-	-	-	+	+
41	9055	H0301	*0301		-	-	+	-	-	-	-	-	-	-	-	-	+	-	-	-
42	9066	TAB089	*0207		-	+	-	-	-	-	-	-	-	-	-	-	-	-	-	-
43	9076	T7526	*0207		-	+	-	-	-	-	-	-	-	-	-	-	-	-	-	-
44	9057	TEM	*6601		-	-	-	-	-	-	-	+	-	-	+	-	+	-	-	-
45	9239	SHJO	*2301	*2402	-	-	-	-	+	+	+	-	-	-	-	-	-	-	-	-
46	9013	SCHU	*0301		-	-	+	-	-	-	-	-	-	-	-	-	+	-	-	-
47	9045	TUBO	*0216	*0301	-	+	+	-	-	-	-	-	-	-	-	-	+	-	-	-
48	9303	TER-ND	*0201	*1101	-	+	-	+	-	-	-	-	-	-	+	-	-	-	-	-

Lot No.: **04F**

Lot-specific information

CELL LINE VALIDATION SHEET												
HLA-A low resolution primer set												
					Well							
					17	18	19	20	21	22	23	24
				Lot No.:	200739717	200739718	200739719	200739720	200739721	200739722	200739723	200739724
	IHWC cell line		A*	A*								
1	9001	SA	*2402		-	-	-	-	-	-	-	-
2	9280	LK707	*0201		-	-	-	-	-	-	-	-
3	9011	E4181324	*0101		-	-	-	-	-	-	-	+
4	9275	GU373	*3001		-	-	-	-	-	-	-	-
5	9009	KAS011	*0101		-	-	-	-	-	-	-	+
6	9353	SM	*0201	*2603	-	-	-	-	-	-	+	-
7	9020	QBL	*2601		-	-	-	-	-	-	-	-
8	9007	DEM	*0201		-	-	-	-	-	-	-	-
9	9026	YAR	*2601		-	-	-	-	-	-	-	-
10	9107	LKT3	*2402		-	-	-	-	-	-	-	-
11	9051	PITOUT	*2902		-	-	-	-	-	-	-	-
12	9052	DBB	*0201		-	-	-	-	-	-	-	-
13	9067	BTB	*0201		-	-	-	-	-	-	-	-
14	9071	OLGA	*3101		-	-	-	-	-	-	-	-
15	9075	DKB	*2402		-	-	-	-	-	-	-	-
16	9037	SWEIG007	*2902		-	-	-	-	-	-	-	-
17	9008	WILJON	*2501		-	-	-	-	-	-	-	-
18	9257	32367	*3303	*7401	-	+	+	-	-	-	-	-
19	9038	BM16	*0201		-	-	-	-	-	-	-	-
20	9059	SLE005	*0201		-	-	-	-	-	-	-	-
21	9064	AMALA	*0217		-	-	-	-	-	-	-	-
22	9056	KOSE	*0201		-	-	-	-	-	-	-	-
23	9124	IHL	*0201	*3401	-	-	-	-	-	-	-	-
24	9035	JBUSH	*3201		+	-	-	-	-	-	-	-
25	9049	IBW9	*3301		-	+	-	-	-	-	-	-
26	9285	WT49	*0205		-	-	-	-	-	-	-	-
27	9191	CH1007	*2410	*2901	-	-	-	-	-	-	-	-
28	9320	BEL5GB	*0201	*2902	-	-	-	-	-	-	-	-
29	9050	MOU	*2902		-	-	-	-	-	-	-	-
30	9021	RSH	*3001	*6802	-	-	-	+	-	-	-	-
31	9019	DUCAF	*3002		-	-	-	-	-	-	-	-
32	9297	HAG	*0201		-	-	-	-	-	-	-	-
33	9098	MT14B	*3101		-	-	-	-	-	-	-	-
34	9104	DHIF	*3101		-	-	-	-	-	-	-	-
35	9302	SSTO	*3201		+	-	-	-	-	-	-	-
36	9024	KT17	*0206	*1101	-	-	-	-	-	-	-	+
37	9065	HHKB	*0301		-	-	-	-	-	-	-	-
38	9099	LZL	*0217		-	-	-	-	-	-	-	-
39	9315	CML	*0101	*0301	-	-	-	-	-	-	-	+
40	9134	WHONP199	*0207	*3001	-	-	-	-	-	-	-	-
41	9055	H0301	*0301		-	-	-	-	-	-	-	-
42	9066	TAB089	*0207		-	-	-	-	-	-	-	-
43	9076	T7526	*0207		-	-	-	-	-	-	-	-
44	9057	TEM	*6601		-	-	-	-	-	-	-	-
45	9239	SHJO	*2301	*2402	-	-	-	-	-	-	-	-
46	9013	SCHU	*0301		-	-	-	-	-	-	-	-
47	9045	TUBO	*0216	*0301	-	-	-	-	-	-	-	-
48	9303	TER-ND	*0201	*1101	-	-	-	-	-	-	-	+

Lot-specific information

May 2009
Rev. No.: 03u



Lot-specific information

May 2009
Rev. No.: 03u



Lot-specific information

CE
0088

Lot-specific information

CE
0088

Lot No.: **04F**

Lot-specific Information

CELL LINE VALIDATION SHEET											
HLA-C low resolution SSP primer set											
					Tube						
					89	90	91	92	93	94	95
				Prod. No.:	200848417	200848418	200848419	200848420	200848421	200848422	200848423
	IHWMC cell line		Cw*								
1	9001	SA	*0702		-	-	-	-	-	-	+
2	9280	LK707	*0701	*1505	+	-	-	-	+	-	+
3	9011	E4181324	*1202		-	-	-	-	-	-	-
4	9275	GU373	*0304	*0401	-	+	-	-	+	+	-
5	9009	KAS011	*0602		-	-	-	-	-	-	+
6	9353	SM	*0304	*0702	-	-	-	-	+	+	-
7	9020	QBL	*0501		-	-	-	-	+	-	-
8	9007	DEM	*0602		-	-	-	-	-	-	+
9	9026	YAR	*1203		-	-	-	-	-	-	-
10	9107	LKT3	*0102		-	-	-	+	-	-	-
11	9051	PITOUT	*1601		-	+	-	-	-	-	+
12	9052	DBB	*0602		-	-	-	-	-	-	+
13	9004	JESTHOM	*0102		-	-	-	+	-	-	-
14	9071	OLGA	*0102	*0304	-	-	-	+	+	+	-
15	9075	DKB	*0304		-	-	-	-	+	+	-
16	9037	SWEIG007	*0202		-	-	-	-	-	-	-
17	9282	CTM395354	*0303	*0701	-	-	-	-	+	+	-
18	9257	32367	*0102	*0705	-	-	-	+	-	-	+
19	9038	BM16	*0701		-	-	-	-	-	-	+
20	9059	SLE005	*0304		-	-	-	-	+	+	-
21	9064	AMALA	*0303		-	-	-	-	+	+	-
22	9056	KOSE	*1203		-	-	-	-	-	-	-
23	9124	IHL	*0102	*1502	+	-	-	+	+	-	-
24	9035	JBUSH	*1203		-	-	-	-	-	-	-
25	9049	IBW9	*0802		-	-	-	-	+	-	-
26	9285	WT49	*0701		-	-	-	-	-	-	+
27	9191	CH1007	*0704	*1505	+	-	-	-	+	-	+
28	9320	BEL5GB	*0501	*1601	-	+	-	-	+	-	+
29	9050	MOU	*1601		-	+	-	-	-	-	+
30	9021	RSH	*1701		-	-	+	-	+	-	-
31	9019	DUCAF	*0501		-	-	-	-	+	-	-
32	9297	HAG	*1701	*1703	-	-	+	-	+	-	-
33	9098	MT14B	*0304		-	-	-	-	+	+	-
34	9104	DHIF	*1203		-	-	-	-	-	-	-
35	9302	SSTO	*0501		-	-	-	-	+	-	-
36	9024	KT17	*0303	*0401	-	+	-	-	+	+	-
37	9065	HHKB	*0702		-	-	-	-	-	-	+
38	9099	LZL	*0303		-	-	-	-	+	+	-
39	9315	CML	*0202	*0701	-	-	-	-	-	-	+
40	9134	WHONP199	*0102	*0602	-	-	-	+	-	-	+
41	9055	H0301	*0802		-	-	-	-	+	-	-
42	9066	TAB089	*0102		-	-	-	+	-	-	-
43	9076	T7526	*0102	*0801	-	+	-	+	+	-	-
44	9057	TEM	*1203		-	-	-	-	-	-	-
45	9239	SHJO	*0602	*1701	-	-	+	-	+	-	+
46	9013	SCHU	*0702		-	-	-	-	-	-	-
47	9045	TUBO	*0704	*1502	+	-	-	-	+	-	+
48	9303	TER-ND	*0401	*1601	-	+	-	-	+	-	+

Lot No.: **04F**

Lot-specific Information

CERTIFICATE OF ANALYSIS

Olerup SSP® HLA-A-B-C SSP Combi Tray

Product number: 101.702-24u/06u – without *Taq* pol.

Lot number: 04F

Expiry date: 2010-September-01

Number of tests: 24 tests – Product No. 101.702-24u

6 tests – Product No. 101.702-06u

Number of wells per test: 95 + 1

Well specifications:

Well No.	Production No.	Well No.	Production No.	Well No.	Production No.
1	2007-397-01	9	2007-397-09	17	2007-397-17
2	2007-397-02	10	2007-397-10	18	2007-397-18
3	2007-397-03	11	2007-332-11	19	2007-397-29
4	2007-397-04	12	2007-397-12	20	2007-397-20
5	2008-470-05	13	2007-397-13	21	2007-397-21
6	2007-332-06	14	2007-397-14	22	2007-397-22
7	2007-397-07	15	2008-470-15	23	2007-397-23
8	2007-397-08	16	2008-470-16	24	2007-397-24

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

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

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

Lot No.: **04F**

Lot-specific Information

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

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

Well No.	Production No.	Well No.	Production No.	Well No.	Production No.
73	2008-484-01	81	2008-484-09	89	2008-484-17
74	2008-484-02	82	2008-484-10	90	2008-484-18
75	2008-484-03	83	2008-484-11	91	2008-484-19
76	2008-484-04	84	2008-484-12	92	2008-484-20
77	2008-484-05	85	2008-484-13	93	2008-484-21
78	2008-484-06	86	2008-484-14	94	2008-484-22
79	2008-484-07	87	2008-484-15	95	2008-484-23
80	2008-484-08	88	2008-484-16		

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

Additional 5'-primers and 3'-primers in primer solutions 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. 2008-417-01**, can detect contamination with PCR products diluted 10^{-7} .

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

Date of approval: 2009-May-25

Approved by:

Quality Control, Supervisor

Lot No.: **04F**

Lot-specific Information

Declaration of Conformity

Product name: *Olerup* SSP® HLA-A-B-C SSP Combi Tray
Product number: 101.702-24u/06u
Lot number: 04F

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

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

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

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

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

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

Saltsjöbaden, Sweden
2009-May-25

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Managing Director

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