

Olerup SSP® HLA-B low resolution

Product number:	101.501-48/12 – including <i>Taq</i> pol.
Lot number:	20K
Expiry date:	2012-May-01
Number of tests:	48 tests – Product No. 101.501-48 12 tests – Product No. 101.501-12
Number of wells per test:	47 + 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. 20K.

CHANGES COMPARED TO THE PREVIOUS *OLERUP SSP*® HLA-B LOW RESOLUTION LOT

The HLA-B low resolution specificity and interpretation tables have been updated for the HLA-B alleles reported since the previous *Olerup SSP*® HLA-B low resolution lot (**Lot No. 63G**) was made.

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

Well	5'-primer	3'-primer	rationale
5	-	-	This primer mix gives a low yield of specific PCR product.
6	Added	Added	Improved allelic resolution of B*13 and B*44 alleles.
9	-	Added	Primer added for the B*78:07 allele.
15	-	Added	Improved allelic resolution of B*35 alleles.
19	Added	Added	Improved allelic resolution of B*15 and B*46 alleles. Primer added for the B*82:03 allele.
28	-	Added	Improved allelic resolution of B*39 alleles.
38	-	Added	Primer added for the B*52:18 allele.
39	Exchanged	-	Improved allelic resolution.
42	Added	Added	Primer pair added for the B*57:16 and B*57:20 alleles. Improved allelic resolution.

Change in revision R01 compared to R00:

1. The HLA-B*51:50 allele is amplified in primer mix 36.

Change in revision R02 compared to R01:

1. The HLA-C*03:12 and 03:19 alleles are amplified in primer mix 41.

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Lot-specific information

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Well **48** 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*	+	+	+			
C*	+	+	+			
DRB1				+	+	
DRB3				+	+	
DRB5				+		
DQB1					+	
DPB1						+

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

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

PRODUCT DESCRIPTION

HLA-B low resolution SSP typing

CONTENT

The primer set contains 5'- and 3'-primers for grouping the B*07:02 to B*83:01 alleles into the corresponding serological groups B7 to B81 as well as primer pairs for recognizing the Bw4 and Bw6 sequence motifs.

PLATE LAYOUT

Each test consists of 48 PCR reactions in a 48 well cut 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

Wells 1 to 47 – HLA-B low resolution primers.

Well 48 – Negative Control.

The 48 well cut PCR plate is marked with ‘HLA-B low’ in silver/gray ink.

Well No. 1 is marked with the Lot No. ‘20K’.

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

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

Please note: When removing each 48 well PCR plate, make sure that the remaining plates stay covered. Use a scalpel or a similar instrument to carefully cut the foil between the plates.

INTERPRETATION

Only HLA-B alleles will be amplified by the HLA-B low resolution typing kit, except that primer mix 1 will amplify the C*02:23 allele, primer mix 3 will amplify the HLA-C*03:05, C*03:25 and C*03:27 alleles, primer mix 4 will amplify the C*01:30 allele, primer mix 6 will amplify the C*16:10 allele, the C*07:46 allele will be amplified by primer mix 8, primer mix 29 will amplify the C*15:25 allele, primer mix 40 will amplify the C*15:02:04 allele, primer mix 41 will amplify the C*03:12 and C*03:19 alleles, primer mix 43 will weakly amplify the C*02:06 allele and primer mix 45 will amplify the C*06:20 allele. Thus, the interpretation of HLA-B low resolution typings is only influenced by the C*01:30, C*02:06, C*02:23, C*03:05, C*03:12, C*03:19, C*03:25, C*03:27, C*06:20, C*07:46, C*15:02:04, C*15:25 and C*16:10 alleles and not by other alleles of other HLA class I genes.

UNIQUELY IDENTIFIED ALLELES

All the HLA-B alleles recognized by the HLA Nomenclature Committee in April 2010¹ will be amplified by the primers in the HLA-B low resolution SSP kit. The HLA-B alleles will be grouped into their corresponding serological specificities².

¹HLA-B alleles listed on the IMGT/HLA web page 2010-April-01, release 3.0.0, www.ebi.ac.uk/imgt/hla.

²It is not possible to identify all serological splits and combinations of the B15 group of alleles, as the serological reactivity of several of the B*15 alleles is not known.

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

DNA-based HLA-B typing resolution required:

B*07:xx, B*08:xx, B*13:xx, B*14:xx, B*18:xx, B*27:xx, B*15:22, B*35:xx, B*37:xx, B*38:xx, B*39:xx, B*40:05, B*41:xx, B*42:xx, B*44:xx, B*45:xx, B*46:xx, B*47:xx, B*48:xx, B*49:xx, B*50:xx, B*51:xx, B*52:xx, B*53:xx, B*54:xx, B*55:xx, B*56:xx, B*57:xx, B*58:xx, B*59:xx, B*67:xx, B*73:xx, B*78:xx, B*81:xx, B*82:xx,
B*40EJD^a 40:01, 40:07, 40:10, 40:12, 40:14, 40:15, 40:16
B*40EJB^b 40:02, 40:03, 40:04, 40:06, 40:08, 40:09, 40:11, 40:13,
40:18, 40:19, 40:20
B*15EJA^c 15:01, 15:04, 15:05, 15:06, 15:07, 15:20, 15:24, 15:25,
15:26N, 15:27, 15:28, 15:30, 15:32, 15:33, 15:34, 15:35,
15:36, 15:38, 15:39, 15:40, 15:43, 15:45
B*15AHM^d 15:16, 15:17
B*15EHZ^e 15:03, 15:09, 15:10, 15:18, 15:23, 15:29, 15:37, 15:47
B*15CYP^f 15:02, 15:08, 15:11, 15:15, 15:21, 15:31, 15:44
B*15AND^g 15:12, 15:14, 15:19
B*1513^h

^aB60 serologic equivalent cluster.

^bB61 serologic equivalent cluster.

^cB62 serologic equivalent cluster.

^dB63 serologic equivalent cluster.

^eB70 serologic equivalent cluster.

^fB75 serologic equivalent cluster.

^gB76 serologic equivalent cluster.

^hB77 serologic equivalent cluster.

The B*08:26, B*08:50 and the B*42:07 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*14:08 and the B*39:25N, B*39:30, B*39:32 to 39:34, 39:47 and 39:50 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*18:07:02, B*18:29 and the B*35:32, B*35:37, B*35:53N, B*35:64, B*35:66, B*35:68:01-35:68:02 and B*35:99 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*41:09 and the B*45:02 and B*45:03 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*55:04, B*55:08, B*55:13, B*55:27 and the B*56:15, B*56:19N and B*56:22 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*55:23, B*55:32 and the B*56:18 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.

SPECIFICITY TABLE

HLA-B low resolution SSP typing

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 Class I ^{4,5} alleles
1^{6,7}	110 bp	800 bp	7, 703, 40, 41, 42, 48, 61	*07:02:01-07:18:02, 07:20-07:32, 07:34-07:39, 07:41-07:47, 07:49N-07:50, 07:52, 07:54-07:59, 07:61-07:99, 15:138, 37:07, 40:15-40:16, 40:23, 40:32, 40:98, 41:08, 42:05:01-42:05:02, 48:05, 48:08, 48:15, C*02:23
2	215 bp	1070 bp	8, 44	*08:01:01-08:25, 08:27-08:49, 08:51-08:61, 15:142, 15:180, 44:49, 51:68
3	140 bp, 235 bp	1070 bp	7, 8, 13, 15, 35, 4005, 44, 49, 61, 62, 77	*07:20, 07:24, 07:60, 08:21, 08:25, 13:01:01-13:04, 13:06-13:08Q, 13:10-13:23, 13:25-13:37, 15:07, 15:36 ^W , 15:45, 15:55, 15:68, 15:89 ^W , 15:126, 35:05:01-35:05:02, 35:16-35:17, 35:22, 35:30, 35:51, 35:58, 35:72, 35:89, 35:97, 40:05, 40:71, 44:08 ^W , 44:54, 44:57 ^W , 44:60, 46:12, 46:20, 51:64, 53:14, 58:18, C*03:05, C*03:25, C*03:27
4⁸	130 bp, 265 bp	1070 bp	12, 13, 14, 17, 21, 35, 40, 41, 44, 45, 47, 49, 50, 60, 61, 64, 65	*13:01:01-13:04, 13:06-13:13, 13:15-13:23, 13:25-13:37, 14:01-14:04, 14:07N, 14:09, 14:11-14:12, 14:14-14:18, 15:46, 15:53, 15:106, 18:44, 35:46-35:47, 35:63, 40:01:01-40:01:10, 40:07, 40:10, 40:14:01-40:16, 40:22N-40:23, 40:25, 40:30-40:34, 40:36, 40:38, 40:42-40:43, 40:45, 40:47-40:49, 40:51-40:55, 40:58-40:63, 40:65-40:67, 40:69, 40:72:01-40:73, 40:76-40:77, 40:79-40:81, 40:84, 40:87-40:88, 40:92, 41:01-41:12, 44:02:01:01-44:03:06, 44:03:08-44:05:02, 44:09-44:39, 44:41-44:43, 44:45-44:56N, 44:58N-44:80, 44:82, 44:84-44:99, 45:01-45:11, 47:01:01:01-47:07, 49:01:01-49:02, 49:04-49:10, 50:01:01-50:02, 50:04-50:06, 50:08-50:09, C*01:30
5⁹	185 bp, 235 bp	800 bp	7, 16, 17, 27, 2708, 37, 38,	*14:01, 14:07N-14:08, 14:10, 14:12, 14:14, 27:01-27:06, 27:08-27:10, 27:12-27:13, 27:16-27:18, 27:20, 27:23, 27:26-

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6	190 bp	800 bp	14, 35, 38, 39, 65	*07:28, 14:02:01-14:02:02, 14:02:04- 14:06:02, 14:09, 14:11, 14:13, 14:15- 14:18, 15:77, 15:189, 35:26, 38:05, 39:04, 44:16, 44:37, 44:64:01-44:64:02, 44:91, 57:04, C*16:10
7¹⁰	290 bp	1070 bp	15, 22, 46, 62, 63, 71, 72, 75, 76, 77	*15:01:01:01-15:01:03, 15:01:06- 15:02:04, 15:03:03-15:08, 15:10:02- 15:11:03, 15:12-15:15, 15:17:01:01- 15:17:02, 15:19-15:21, 15:24-15:28, 15:30-15:36, 15:38:01-15:40, 15:42- 15:46, 15:48, 15:50, 15:55-15:58, 15:60, 15:63, 15:65-15:66, 15:70-15:71, 15:73, 15:75-15:79N, 15:81-15:89, 15:92, 15:94N, 15:96-15:97, 15:101-15:102, 15:104-15:107, 15:109-15:113, 15:116- 15:118, 15:120-15:122, 15:125-15:126, 15:128-15:129, 15:135-15:150, 15:152, 15:154-15:155, 15:157, 15:159-15:160, 15:162-15:172, 15:174-15:175, 15:177- 15:179, 15:181N-15:185, 15:187-15:191, 46:01:01-46:22
8	165 bp, 220 bp, 330 bp	1070 bp	5, 8, 12, 21, 22, 37, 41, 42, 44, 45, 48, 51, 56, 57, 60, 62, 70, 71, 72, 82	*08:01:01-08:05, 08:08N-08:12:03, 08:15- 08:19N, 08:21-08:24, 08:26-08:27, 08:29- 08:36, 08:38-08:39, 08:41-08:48, 08:50- 08:54, 08:56-08:61, 15:03:01-15:03:03, 15:09-15:10:02, 15:18:01-15:18:04, 15:23, 15:29, 15:37, 15:46-15:47, 15:49, 15:51-15:54, 15:61-15:62, 15:64, 15:69, 15:72, 15:74, 15:80, 15:83, 15:90-15:91, 15:93, 15:98-15:99, 15:103, 15:106, 15:108, 15:114-15:115, 15:119, 15:123- 15:124, 15:127, 15:131-15:134, 15:143, 15:151, 15:153, 15:156, 15:158, 15:161, 15:173, 15:176, 15:180, 15:186, 35:87, 37:12, 40:12, 41:01-41:03:02, 41:05- 41:09, 41:11-41:12, 42:01:01-42:02, 42:04-42:08, 42:10-42:13, 44:14-44:15, 44:18, 44:20, 44:62, 45:01-45:11, 51:08,

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9¹¹	165 bp, 190 bp, 390 bp	1070 bp	5, 17, 21, 35, 51, 5102, 5103, 52, 56, 62, 63, 70, 78	*15:01:02, 15:09, 15:16-15:17:02, 15:67, 15:95, 15:162, 15:168, 15:177, 35:01:10, 35:04:02, 40:26, 40:28, 44:62, 51:01:01- 51:01:03, 51:01:05-51:02:03, 51:03- 51:09:02, 51:11N-51:12, 51:13:02-51:14, 51:16-51:23, 51:24:03, 51:26-51:33, 51:37-51:41N, 51:43-51:44N, 51:46, 51:48-51:61, 51:63-51:80, 51:82-51:91, 51:94-51:95, 52:01:01-52:01:04, 52:02- 52:13, 52:15-52:20, 56:05:01-56:06, 56:21, 58:08, 78:01-78:07
10¹⁰	180 bp	800 bp	13, 22, 55, 60	*07:78, 13:01:01-13:02:07, 13:07N-13:09, 13:11, 13:14-13:20, 13:22:01-13:23, 13:25, 13:27-13:34, 13:36-13:37, 40:48, 45:10, 49:07, 55:09, 55:22, 55:24
11⁶	105 bp, 195 bp	1070 bp	8, 12, 27, 38, 39, 3902, 40, 44, 45, 48, 60, 70, 71, 72, 82	*07:27, 07:50, 08:04, 08:17, 08:54, 15:03:01-15:03:03, 15:47, 15:49, 15:54, 15:61-15:62, 15:64, 15:68-15:69, 15:91, 15:98, 15:103, 15:123, 15:127, 15:131- 15:132, 15:151, 15:156, 15:158, 15:173, 18:37, 27:18, 27:29, 38:03, 39:02:01- 39:02:02, 39:08, 39:13:01-39:13:02, 39:23, 39:39, 39:49, 40:12, 40:46, 40:93, 42:11, 44:10, 44:15, 44:18, 44:40, 44:44, 45:01, 45:05-45:07, 45:11, 48:01:01- 48:05, 48:07-48:22, 50:02, 52:16, 55:18, 82:01-82:03
12	280 bp	1070 bp	5, 7, 8, 13, 15, 16, 17, 18, 22, 35, 40, 42, 44, 46, 48, 49, 51, 53, 55, 56, 57, 58, 60, 61, 62, 63, 70, 71, 72, 75, 76, 77, 78	*07:09, 07:11, 07:17, 08:28, 08:35, 08:37, 13:04, 13:10, 13:26, 15:01:01:01- 15:01:04, 15:01:06-15:08, 15:11:01- 15:16, 15:18:01-15:21, 15:23-15:29, 15:31-15:36, 15:38:01-15:40, 15:43- 15:44, 15:46-15:47, 15:49-15:57, 15:60- 15:62, 15:64-15:72, 15:74-15:76, 15:78:01-15:82, 15:84-15:85, 15:87- 15:89, 15:91-15:98, 15:101-15:129, 15:131-15:132, 15:134-15:136, 15:138- 15:149N, 15:151-15:161, 15:163-15:167, 15:169-15:176, 15:178-15:187, 15:189- 15:191, 18:01:01-18:15, 18:17N-18:25, 18:27-18:40, 18:42-18:49, 27:41, 35:01:01-35:01:19, 35:05:01-35:05:02, 35:07-35:08:04, 35:10-35:11, 35:14:01- 35:17, 35:19-35:21, 35:23-35:30, 35:32, 35:35, 35:37, 35:40N-35:43, 35:45-35:54,

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15⁶	115 bp, 150 bp	1070 bp	18	*18:01:01-18:15, 18:17N-18:28, 18:30-18:36, 18:38-18:47, 18:49
16⁶	80 bp	1070 bp	7, 27, 2708, 44, 60	*07:73, 27:01-27:21, 27:23-27:51, 27:53-27:65N, 38:22, 40:46, 40:93, 44:40, 44:44
17	150 bp	800 bp	12, 13, 17, 18, 22, 27, 35, 37, 39, 44, 45, 47, 48, 51, 53, 56, 57, 58, 62, 70, 75, 77, 78	*08:49, 13:01:01-13:01:03, 13:06-13:07N, 13:12-13:13, 13:17, 13:20, 13:22:01-13:23, 13:25-13:26, 13:28-13:29, 13:36, 14:10, 15:02:01-15:02:04, 15:13, 15:20-15:21, 15:25:01-15:25:02, 15:36, 15:44, 15:62, 15:77, 15:80, 15:85, 15:88-15:89, 15:106, 15:112, 15:121, 15:139, 15:144, 15:154, 15:165, 15:170, 18:22, 27:19, 27:30, 35:01:01-35:04:03, 35:06-35:08:04, 35:10-35:17, 35:19-35:21, 35:23-35:30, 35:33-35:36, 35:38-35:42:02, 35:45-35:50, 35:52, 35:54-35:57, 35:59, 35:61-35:63, 35:65Q, 35:69-35:71, 35:74, 35:76-35:78, 35:80-35:85, 35:90-35:96, 35:98, 37:01:01-

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35⁶	120 bp, 210 bp	800 bp	5, 13, 15, 17, 22, 35, 45, 49, 50, 51, 5102, 5103, 52, 55, 56, 62, 63, 78	*07:78, 07:84, 13:16, 13:31 ^w , 15:04 ^w , 15:16, 15:42, 15:67, 15:95, 15:137 ^w , 40:95, 49:01:01, 49:02-49:10, 50:01:01- 50:02, 50:04-50:09, 51:01:01-51:03, 51:05, 51:07:01-51:09:02, 51:11N-51:14, 51:16-51:24:03, 51:26-51:41N, 51:43- 51:44N, 51:48-51:55, 51:57-51:58, 51:60,

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39	160 bp, 330 bp	1070 bp	22, 44, 45, 47, 54	*44:02:01:01-44:02:13, 44:06, 44:08-44:09, 44:11-44:12, 44:16, 44:19N-44:24, 44:27, 44:33-44:34, 44:41, 44:44, 44:48-44:49, 44:52N-44:53, 44:55, 44:59, 44:63, 44:66-44:68, 44:71-44:74, 44:80, 44:83-44:84, 44:86-44:87, 44:89-44:91, 44:93, 44:95, 44:97, 44:99, 54:01-54:22, 83:01
40	180 bp, 210 bp	1070 bp	13, 15, 18, 35, 39, 40, 54, 55, 56, 59, 78	*07:65, 13:06, 15:42, 15:86, 18:04, 35:42:02, 35:60, 39:17, 40:58, 45:08, 46:18, 54:01-54:02, 54:05N, 54:07-54:08N, 54:10, 54:12-54:13, 54:16-54:22, 55:01:01-55:03, 55:05, 55:07, 55:10-55:12, 55:15-55:16, 55:18-55:19, 55:21, 55:25-55:26, 55:29-55:31, 55:33-55:40, 56:05:01, 56:06, 56:10, 56:23, 59:01, 59:05, 78:01, 78:02:02-78:03, 78:07, C*15:02:04
41	180 bp	1070 bp	12, 15, 21, 22, 44, 45, 49, 50, 51, 56, 61, 62, 82	*13:03, 15:73, 40:71, 44:10, 44:15, 44:18, 45:01, 45:04-45:07, 45:11, 46:11, 49:01:01-49:03, 49:06, 49:08-49:10, 50:01:01-50:02, 50:04-50:08, 51:15, 51:62, 54:03, 56:01:01-56:02, 56:04, 56:07-56:08, 56:13-56:14, 56:16-56:17, 56:20, 56:24-56:29, 59:04, 82:01-82:03, C*03:12, C*03:19
42^{6,7}	90 bp, 240 bp	800 bp	57	*55:14, 57:01:01-57:31
43^{6,12}	90 bp	1070 bp	5, 13, 15, 17, 39, 55, 56, 58, 60, 61, 62, 71	*13:11, 15:18:03, 15:73, 39:17, 40:48, 40:71, 51:62, 56:02, 56:04, 56:10, 58:01:01-58:02, 58:04-58:28, C*02:06^w
44⁶	95 bp	1070 bp	8, 18, 22, 35, 37, 38, 39, 44, 51, 5102, 5103, 53, 78	*07:65 ^w , 08:32, 18:01:01-18:11, 18:13-18:15, 18:17N-18:36, 18:38-18:47, 18:49, 35:01:01-35:09:02, 35:11-35:12:02, 35:14:01-35:15, 35:17-35:18, 35:20:01-35:24:02, 35:27, 35:29-35:45, 35:48, 35:50-35:62, 35:64-35:68:02, 35:70-35:72, 35:74-35:75, 35:76 ^w , 35:77-35:79, 35:81-35:99, 37:08, 38:06-38:07, 39:19:01-39:19:02, 44:06, 51:01:01-

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45^{6,7}	115 bp, 150 bp	1070 bp	15, 18,22, 27, 35, 39, 46, 55, 62, 72, 73, 75, 76	*13:31, 15:01:01:01-15:01:04, 15:01:06- 15:01:16, 15:04, 15:07-15:08, 15:11:01- 15:12, 15:14-15:15, 15:19, 15:24, 15:26N-15:28, 15:30, 15:32, 15:34-15:35, 15:38:01-15:38:02, 15:43, 15:45-15:46, 15:50, 15:53-15:54, 15:56-15:58, 15:60, 15:63, 15:66, 15:68, 15:70-15:71, 15:73, 15:75-15:77, 15:79N, 15:81-15:82, 15:85, 15:87, 15:92, 15:94N, 15:96-15:97, 15:101-15:102, 15:104-15:105, 15:109- 15:111N, 15:113, 15:117-15:118, 15:120, 15:122, 15:125-15:126, 15:128-15:129, 15:135, 15:137, 15:140, 15:142-15:149N, 15:152, 15:154, 15:157, 15:159-15:160, 15:163-15:167, 15:169, 15:171-15:172, 15:174-15:175, 15:178, 15:180-15:184, 15:187, 15:189-15:191, 18:19, 27:25, 35:14:01-35:14:02, 35:43-35:44, 35:62, 35:67, 35:79, 35:86, 39:18, 39:36, 46:01:01-46:02, 46:04-46:05, 46:07N, 46:09-46:10, 46:12, 46:14-46:17, 46:20, 46:22, 51:61, 54:06, 55:21, 56:03, 73:01, C*06:20
46	360 bp	1070 bp	Bw4 ¹²	
47	350 bp	1070 bp	Bw6	
48¹⁴	-	-		Negative Control

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

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

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

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

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

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

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

Well number 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 5, 6, 10, 17, 20, 21, 30, 35 and 42 contain the primer pair giving rise to the shorter,

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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, the information available at the www.worldmarrow.org web site and the expert-assigned serological grouping in Tissue Antigens (2009) 73:95-170.

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

The B*08:26, B*08:50 and the B*42:07 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*14:08 and the B*39:25N, B*39:30, B*39:32 to 39:34, 39:47 and 39:50 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*18:07:02, B*18:29 and the B*35:32, B*35:37, B*35:53N, B*35:64, B*35:66, B*35:68:01-35:68:02 and B*35:99 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*41:09 and the B*45:02 and B*45:03 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*55:04, B*55:08, B*55:13, B*55:27 and the B*56:15, B*56:19N and B*56:22 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*55:23, B*55:32 and the B*56:18 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.

⁵Due to sharing of sequence motifs, non-HLA-B alleles will be amplified by a few primer mixes; primer mix 1 will amplify the C*02:23 allele, primer mix 3 will amplify the HLA-C*03:05, C*03:25 and C*03:27 alleles, primer mix 4 will amplify the C*01:30 allele, primer mix 6 will amplify the C*16:10 allele, the C*07:46 allele will be amplified by primer mix 8, primer mix 29 will amplify the C*15:25 allele, primer mix 40 will amplify the C*15:02:04 allele, primer mix 41 will amplify the C*03:12 and C*03:19 alleles, primer mix 43 will weakly amplify the C*02:06 allele and primer mix 45 will amplify the C*06:20 allele. Furthermore, the C*17:01 and C*17:02 alleles might be faintly amplified by primer mix 25.

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

⁷Primer mixes 1, 19, 25, 42 and 45 may give rise to a primer oligomer artifact.

⁸Primer mix 4 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 mix 5 yields notably less specific PCR product than the other HLA-B low resolution primer mixes.

¹⁰Primer mixes 7, 10 and 26 might give rise to non-specific amplification products.

¹¹Primer 9 may yield less specific PCR product than the other HLA-B low resolution primer mixes. This primer mix may also give rise to non-specific amplification products, and may furthermore faintly amplify the B*57 and B*58 alleles.

¹²Primer mix 29, 32 and 43 might generate a false band of about 500 base pairs. This band should be disregarded when interpreting HLA-B low resolution typings.

¹³The Bw4-associated HLA-A specificities A23, A24, A2403, A25 and A32 are not amplified by the primer pair in primer mix 46.

¹⁴Primer mix 48 contains a negative control, which will amplify more than 95% of HLA amplicons as well as the amplicons generated by control primer pairs. PCR product sizes range from 75 to 200 base pairs. The PCR product generated by the control primer pair is 430 base pairs.

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

‘w’, might be weakly amplified.

INTERPRETATION TABLE																							
HLA-B low resolution SSP																							
Amplification patterns of the B*07:02 to B*83:01 alleles ⁶																							
		Well																					
		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22
Length of spec.		110	215	140	130	165	190	290	165	165	180	105	280	195	105	115	80	150	135	60	210	170	110
PCR product(s)				235	265	235			330	390		195			435	150				400			395
Length of int. pos. control ¹		800	1070	1070	1070	800	800	1070	1070	1070	800	1070	1070	1070	1070	1070	1070	800	1070	1070	800	800	1070
5'-primer(s) ²		5'-TgA [*] 527	5'-TCg [*] 97	5'-ggC [*] 209	5'-CCg [*] 103	5'-CCT [*] 103	5'-CCg [*] 103	5'-ggA [*] 45	5'-ggA [*] 45	5'-ggA [*] 45	5'-TTA [*] 420	5'-AgA [*] 206	5'-gTC [*] 419	5'-TCT [*] 142	5'-ggA [*] 45	5'-Cgg [*] 161	5'-gCT [*] 167	5'-TCA [*] 355	5'-gAC [*] 206	5'-ggA [*] 45	5'-TCT [*] 142	5'-ggC [*] 409	5'-gAA [*] 246
3'-primer(s) ³		5'-gCT [*] 605	5'-TgA [*] 272	5'-Cag [*] 559	5'-CgT [*] 193	5'-TAT [*] 246	5'-gCC [*] 572	5'-TgC [*] 538	5'-Cag [*] 559	5'-gCg [*] 572	5'-ATC [*] 309	5'-TgA [*] 272	5'-gCT [*] 570	5'-gCT [*] 570	5'-gCT [*] 570	5'-gCT [*] 570	5'-gCT [*] 570	5'-gCT [*] 570	5'-gCT [*] 570	5'-gCT [*] 570	5'-gCT [*] 570	5'-gCT [*] 570	5'-gCT [*] 570
Well No.		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22

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Well No.		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24
HLA-B allele ⁴	ser. ⁵																								
*07:02:01-07:02:19, 07:05:01-07:07, 07:10, 07:12-07:15, 07:18:01- 07:18:02, 07:21-07:23, 07:26, 07:29-07:31, 07:34- 07:35, 07:39, 07:41- 07:46, 07:49N, 07:52, 07:55-07:59, 07:61-07:64, 07:66-07:68, 07:70-07:72, 07:74-07:77, 07:79-07:80, 07:82-07:83, 07:86-07:99	B7, B42, Null, -	1																							24
*07:03, 07:08, 07:16, 07:32, 07:37	B703, B7, -	1																							24
*07:04, 07:25	B7	1													14										24
*07:09, 07:11, 07:17	B7	1											12												24
*07:19, 07:33, 07:40, 07:48, 07:51, 07:53	B7/42																								24
*07:20, 07:24	B7, -	1	3																						24
*07:27	-	1									11								20						
*07:28	B7	1				6																			24
*07:36, 07:81	B7, -	1																							
*07:38	-	1																							
*07:47	B7	1																							24
*07:50	-	1									11														24
*07:54	B7	1																							24
*07:60	-		3																						24
*07:65	-	1																	18						
*07:69, 07:85	-	1																					23	24	
*07:73	-	1														16									24
*07:78	-	1									10														24
*07:84	-	1																							24
*08:01:01-08:01:10, 08:05, 08:08N, 08:10- 08:12:03, 08:15-08:16, 08:18-08:19N, 08:22- 08:24, 08:27, 08:29- 08:31, 08:33-08:34, 08:39, 08:41-08:48, 08:51, 08:53, 08:56- 08:59, 08:61	B8, Null, -		2						8																24
*08:02-08:03, 08:52	B8, -		2						8																
*08:04	B8, -		2						8			11													24
*08:06, 08:13, 08:20, 08:40	B8, -		2																						24

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25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48		Well No.	
																								ser. ⁵	HLA-B allele ⁴	
			28																			47		Negative Control	B7, B42, Null, -	*07:02:01-07:02:19, 07:05:01-07:07, 07:10, 07:12-07:15, 07:18:01- 07:18:02, 07:21-07:23, 07:26, 07:29-07:31, 07:34 07:35, 07:39, 07:41- 07:46, 07:49N, 07:52, 07:55-07:59, 07:61-07:64, 07:66-07:68, 07:70-07:72, 07:74-07:77, 07:79-07:80, 07:82-07:83, 07:86-07:99
																						47			B703, B7, -	*07:03, 07:08, 07:16, 07:32, 07:37
		27	28																			47			B7	*07:04, 07:25
			28																			47			B7	*07:09, 07:11, 07:17
			28																			47			B7/42	*07:19, 07:33, 07:40, 07:48, 07:51, 07:53
			28																			47			B7, -	*07:20, 07:24
																					46		-		*07:27	
			28																			47			B7	*07:28
			28																			46			B7, -	*07:36, 07:81
																						46			-	*07:38
			w																			47			B7	*07:47
																						47			-	*07:50
			28									38										47			B7	*07:54
			28																			47			-	*07:60
			28				32								40				w			47			-	*07:65
																						47			-	*07:69, 07:85
			28																			47		-	*07:73	
			28							35												47		-	*07:78	
			28							35												47		-	*07:84	
			27																			47		B8, Null, -	*08:01:01-08:01:10, 08:05, 08:08N, 08:10- 08:12:03, 08:15-08:16, 08:18-08:19N, 08:22- 08:24, 08:27, 08:29- 08:31, 08:33-08:34, 08:39, 08:41-08:48, 08:51, 08:53, 08:56- 08:59, 08:61	
			27																			46			B8, -	*08:02-08:03, 08:52
			27																			47			B8, -	*08:04
																						47			B8, -	*08:06, 08:13, 08:20, 08:40

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27						47	B8	*08:07, 08:14
27	30					47	B8	*08:09
27				38		47	-	*08:17, 08:54
27						47	B8	*08:21
						47	B8	*08:25
27						47	B8, -	*08:26, 08:50, 42:07
27						47	B8, -	*08:28, 08:37
27					44	47	B8	*08:32
27						47	-	*08:35
27						47	-	*08:36
27				38		47	-	*08:38
27	29					47	-	*08:49
						47	-	*08:55
27	29					47	-	*08:60
				38		46	B13, -	*13:01:01-13:01:03, 13:17, 13:20, 13:22:01- 13:23, 13:25, 13:28-13:29
				38		46	B13, -	*13:02:01-13:02:07, 13:08Q, 13:15, 13:18- 13:19, 13:27, 13:30, 13:32-13:34, 13:37
				38	41	46	B49/ B15	*13:03
				38		46	B49/ B15, B13	*13:04, 13:10
				38	40	46	B13	*13:06
						46	Null	*13:07N
				38		47	-	*13:09
				38		46	B13	*13:11
				38	43	46	B13	*13:12-13:13
				38		46	B13	*13:14
			35	38		46	B13	*13:16
				38		46	-	*13:21, 13:35
				38		46	-	*13:26
			w	38		45 46	-	*13:31
		33				46	-	*13:36
						47	B64, Null, -	*14:01, 14:07N, 14:12, 14:14
						47	B65, B14, -	*14:02:01-14:02:02, 14:02:04, 14:03-14:04, 14:09, 14:11, 14:15-14:18
						47	B65	*14:02:03
						47	B65	*14:02:05
						47	B14, -	*14:05-14:06:02, 14:13

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*14:08, 39:25N, 39:30, 39:32-39:34, 39:47, 39:50	B16, B39, Null, -					5														23	24
*14:10	—					5								17						23	24
*15:01:01:01-15:01:01:02N, 15:01:03, 15:01:06-15:01:16, 15:26N-15:27:03, 15:32, 15:34-15:35, 15:38:01-15:38:02, 15:50, 15:56, 15:60, 15:70-15:71, 15:75, 15:79N, 15:81-15:82, 15:92, 15:94N, 15:96-15:97, 15:102, 15:104-15:105, 15:109-15:111N, 15:113, 15:117-15:118, 15:122, 15:125, 15:128-15:129, 15:135, 15:140, 15:145-15:147, 15:152, 15:159-15:160, 15:163-15:164, 15:166-15:167, 15:169, 15:171-15:172, 15:174-15:175, 15:178, 15:181N-15:184, 15:187, 15:190N	B62, Null, —						7			12				19							
*15:01:02	B62						7		9		12				19						
*15:01:04	B62										12				19						
*15:02:01-15:02:04, 15:88, 15:112, 15:121, 15:139, 15:170	B75, —						7				12			17	19						
*15:03:01-15:03:02, 15:47, 15:49, 15:61, 15:98, 15:103, 15:123, 15:127, 15:132, 15:151, 15:156, 15:158, 15:173	B72, B70, —							8			11	12			19						
*15:03:03	B72						7	8			11	12			19						
*15:04	B62						7				12				19						
*15:05:01-15:06, 15:33, 15:39-15:40, 15:65, 15:78:01-15:78:02, 15:84, 15:107, 15:136, 15:141, 15:155, 15:179, 15:185	B62, —						7				12				19						
*15:07, 15:126	B62			3			7				12				19						
*15:08, 15:11:01-15:11:03, 15:15, 15:148, 15:191	B75, B62, —						7				12				19						

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*15:09	B70					8	9				14			19				
*15:10:01, 15:37, 15:90, 15:99, 15:133	B71, B70, –					8					14			19				
*15:10:02	B71					7	8				14			19				
*15:11:04	B75									12				19				
*15:12, 15:14, 15:19	B76					7				12	13			19				
*15:13	B77					7				12	14		17	19				
*15:16, 15:67, 15:95	B63						9			12	14			19				
*15:17:01:01-15:17:02, 15:162, 15:168, 15:177	B63, –					7	9				14			19				
*15:18:01-15:18:02, 15:18:04, 15:51-15:52, 15:72, 15:93, 15:108, 15:114, 15:119, 15:134, 15:153, 15:176	B71, B70, –						8			12	14			19				
*15:18:03	B71					8				12	14			19				
*15:20, 15:25:01-15:25:02	B62					7				12			17	19				
*15:21, 15:44	B75					7				12	14		17	19				
*15:23, 15:115	B70, B5, -					8				12	14			19				
*15:24, 15:87, 15:157	B62, B15, –					7				12	14			19				
*15:28, 15:120, 15:149N	B62, Null					7				12				19				
*15:29	B70					8				12				19				
*15:30, 15:58, 15:63	B62					7								19				
*15:31	B75					7				12				19				
*15:36	-		w			7				12			17	19				
*15:42	B15					7								19				
*15:43	B15					7				12				19				
*15:45	B62		3			7								19				
*15:46	-			4		7	8			12				19				
*15:48, 15:150, 15:188	B62, –					7								19				
*15:53	-			4		8				12				19				
*15:54	B72					8			11	12				19				
*15:55	B15		3			7				12				19				
*15:57	B62					7				12				19				
*15:62	-					8			11	12			17	19				
*15:64	B71					8			11	12				19				
*15:66	B62					7				12	14			19				
*15:68	-		3						11	12								
*15:69	B72					8			11	12				19	21			
*15:73	B62					7								19				
*15:74	B72					8				12				19				
*15:76	-					7				12				19				
*15:77	B62				6	7							17	19				

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*15:80	B70					8			12	14		17	19				
*15:83	B62					7	8						19				
*15:85, 15:154, 15:165	B62, –					7			12			17	19				
*15:86	-					7							19				
*15:89	B77		w			7			12			17	19				
*15:91, 15:131	-					8		11	12	13			19				
*15:101	-					7			12				19				
*15:106	-			4		7	8		12			17	19				
*15:116	B62					7			12				19				
*15:124	B71					8			12	14			19				
*15:137	–					7							19				
*15:138	–	1				7			12				19				
*15:142	–		2			7			12				19				
*15:143	–					7	8		12				19				
*15:144	–					7			12			17	19				
*15:161	–					8			12	13	14		19				
*15:180	–		2			8			12				19				
*15:186	–					8			12	14			19	21			
*15:189	–					6	7		12	14			19				
*18:01:01-18:03, 18:05-18:08, 18:10-18:11, 18:13-18:15, 18:17N-18:18, 18:20-18:21, 18:23N-18:25, 18:27-18:28, 18:30-18:36, 18:38-18:40, 18:42-18:43, 18:45-18:47	B18, Null, –								12	15		18					
*18:04	B18								12	15		18					
*18:09	B18								12	15							
*18:12	B18								12	15		18					
*18:19	B18								12	15		18					
*18:22	B18								12	15	17	18					
*18:26, 18:41	B18, –									15		18					
*18:29, 35:32, 35:37, 35:53N, 35:64, 35:66, 35:68:01-35:68:02, 35:99	B35, Null, –								12			18					
*18:37	–							11	12								
*18:44	–			4					12	15		18					
*18:48	–								12								
*18:49	–								12	15							
*27:01	B27				5							16					
*27:02, 27:53, 27:57, 27:65N	B27, Null, –				5							16					

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										47		B70	*15:80
		30				38				47		B62	*15:83
						38				45	47	B62, -	*15:85, 15:154, 15:165
						38	40				47	-	*15:86
				33							46	B77	*15:89
						38					47	-	*15:91, 15:131
		28				38				45	47	-	*15:101
						37	38				47	-	*15:106
25						38					47	B62	*15:116
25											47	B71	*15:124
				w		38				45	47	-	*15:137
						38					47	-	*15:138
						38				45	47	-	*15:142
						37				45	47	-	*15:143
				33						45	47	-	*15:144
											47	-	*15:161
										45	47	-	*15:180
											47	-	*15:186
				33						45	47	-	*15:189
												Negative Control	
										44	47		*18:01:01-18:03, 18:05-18:08, 18:10-18:11, 18:13
													18:15, 18:17N-18:18,
													18:20-18:21, 18:23N-
													18:25, 18:27-18:28, 18:30
													18:36, 18:38-18:40, 18:42
													18:43, 18:45-18:47
						40				44	47		B18
										44	46		*18:04
						38							B18
													*18:09
										44	45		B18
													*18:12
										44	47		B18
													*18:19
				31						44	47		B18
										44	47		*18:22
													B18, -
													*18:26, 18:41
										44	47		B35,
													Null, -
													*18:29, 35:32, 35:37,
													35:53N, 35:64, 35:66,
													35:68:01-35:68:02, 35:99
											47	-	*18:37
										44	47	-	*18:44
26						37					47	-	*18:48
										44	47	-	*18:49
		28		w		38					46	B27	*27:01
		28		32		36	38				46	B27, Null, -	*27:02, 27:53, 27:57, 27:65N

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			28				32																	B27, Null, -	*27:03-27:06, 27:09- 27:10, 27:13, 27:17, 27:20, 27:27, 27:31, 27:35-27:37, 27:45-27:46, 27:48-27:51, 27:54-27:56, 27:58, 27:60-27:61, 27:64N
			28				32																	B27, –	*27:07, 27:11, 27:14 27:15, 27:21, 27:28, 27:32, 27:34, 27:38, 27:43, 27:47, 27:63
			28				32																	B2708 , B27, B7, –	*27:08, 27:26, 27:40, 27:42, 27:44
																								-	*27:12
																								B27, Null, -	*27:16, 27:39, 27:59N
																								-	*27:18
			28				32																	B27	*27:19
																								-	*27:23
			28				32	33																B27	*27:24
			28				32																	B27	*27:25
																								B27	*27:29
			28				32			36														B27	*27:30
			28				32																	-	*27:33
			28				32																	–	*27:41
			28				32																	–	*27:52
			28				32			36														–	*27:62
																								B35, Null, –	*35:01:01-35:01:09, 35:01:11-35:01:19, 35:07- 35:08:04, 35:11, 35:15, 35:20:01-35:20:02, 35:23, 35:29, 35:40N-35:42:01, 35:48, 35:50, 35:52, 35:54, 35:57, 35:61, 35:77-35:78, 35:82, 35:90 35:94
																								B35	*35:01:10
																								B35, –	*35:02:01-35:03:02, 35:03:04-35:04:01, 35:04:03, 35:06, 35:12:01 35:12:02, 35:33-35:34, 35:36, 35:39, 35:55, 35:59, 35:65Q, 35:70, 35:74, 35:83-35:85, 35:95, 35:98

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*35:03:03, 35:56	B35								17				
*35:04:02	B35					9			17	18			
*35:05:01-35:05:02, 35:51, 35:58, 35:72, 35:89, 35:97	B35, –		3				12			18			
*35:09:01-35:09:02, 35:18, 35:31, 35:75, 35:88	B35, –									18			
*35:10, 35:28, 35:69, 35:80	B35, –						12			17	18		
*35:13	B35									17	18		
*35:14:01-35:14:02, 35:62	B35						12			17	18		
*35:16	B35		3				12			17	18		
*35:17, 35:30	B35		3				12			17	18		
*35:19	B35, -						12			17			
*35:21, 35:24:01-35:24:02	B35, B78						12			17	18		
*35:22	B35		3							18			
*35:25, 35:49	B35						12			17			
*35:26	B35			6			12			17			
*35:27	B35						12			17			
*35:35	B35						12			17	18	21	
*35:38	B35									17	18		
*35:42:02	–						12			17	18		
*35:43, 35:67, 35:79, 35:86	B35, –						12			18			
*35:44	-									18			
*35:45, 35:71	B35						12	13		17	18		
*35:46	B35		4				12			17			
*35:47	B35		4				12			17			
*35:60	B35									18			
*35:63	-		4				12			17			
*35:76	B35/ 22						12			17	18		
*35:81, 35:96	–									17	18		
*35:87	–					8				18			
*37:01:01-37:01:07, 37:03N, 37:06, 37:13, 37:15-37:21	B37, Null, –							13		17		20	
*37:02	B37/ B27			5				13				20	
*37:04:01-37:04:02	B37, –							13		17		20	
*37:05	-							13		17		20	
*37:07	-	1						13				20	
*37:08	B37							13		17		20	
*37:09	B37							13				20	

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					44		47	B35	*35:04:02
					44		47	B35, –	*35:05:01-35:05:02, 35:51, 35:58, 35:72, 35:89, 35:97
					44		47	B35, –	*35:09:01-35:09:02, 35:18, 35:31, 35:75, 35:88
			38				47	B35, –	*35:10, 35:28, 35:69, 35:80
			38				47	B35	*35:13
					44	45	47	B35	*35:14:01-35:14:02, 35:62
			38				47	B35	*35:16
					44		47	B35	*35:17, 35:30
			37				47	B35, -	*35:19
		31			44		47	B35, B78	*35:21, 35:24:01-35:24:02
					44		47	B35	*35:22
							47	B35	*35:25, 35:49
							47	B35	*35:26
					44		47	B35	*35:27
					44		47	B35	*35:35
	29				44		47	B35	*35:38
				40	44		47	–	*35:42:02
					44	45	47	B35, –	*35:43, 35:67, 35:79, 35:86
					44	45	47	-	*35:44
	29				44		47	B35	*35:45, 35:71
			33				47	B35	*35:46
			37				47	B35	*35:47
				40	44		47	B35	*35:60
			37 38				47	-	*35:63
	28		32		w		47	B35/ 22	*35:76
		31			44		47	–	*35:81, 35:96
27					44		47	–	*35:87
	29			38			46	B37, Null, –	*37:01:01-37:01:07, 37:03N, 37:06, 37:13, 37:15-37:21
				38			46	B37/ B27	*37:02
	29	31		38			46	B37, –	*37:04:01-37:04:02
	29			38			47	-	*37:05
				38			46	-	*37:07
	29				44		46	B37	*37:08
				38			46	B37	*37:09

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*37:10, 37:22	B37, –											17		20				
*37:11	-											17	18	20				
*37:12	B37					8				13				20				
*37:14	-											17		20				
*38:01:01-38:02:02, 38:08-38:09, 38:11-38:16, 38:18-38:19, 38:21	B38, –				5											21	22	23
*38:03	B38				5				11							21	22	
*38:04	B38															21		23
*38:05	B38				6											21	22	23
*38:06	B38															21		
*38:07	B38				5											21		
*38:10	B38				5												22	23
*38:17	-				5					13					20	21	22	23
*38:20	-				5							17				21	22	23
*38:22	-				5							16					22	23
*39:01:01:01-39:01:01:02L, 39:01:03-39:01:08, 39:01:10-39:01:11, 39:03, 39:05:01-39:06:02, 39:09, 39:11, 39:14-39:15, 39:24, 39:26-39:29, 39:31, 39:35, 39:37-39:38Q, 39:40N-39:41, 39:44, 39:46, 39:48, 39:51-39:57	B3901, B39, Null, -				5											21		23 24
*39:01:09, 39:12, 39:45	B3901, B39, -															21		23 24
*39:02:01, 39:08	B3902, B39				5				11							21		24
*39:02:02, 39:13:01-39:13:02, 39:23, 39:49	B3902, B39, -								11							21		24
*39:04	B39				6											21		23 24
*39:07	B16				?				12							21		23 24
*39:10, 39:16, 39:20	B39															21		24
*39:17	B39															21		24
*39:18	B39				5											21		23 24
*39:19:01	B39											18				21		23 24
*39:19:02	B39				5							18				21		23 24
*39:22	B39				5											21		23 24
*39:36	-				5												23	24
*39:39	B39				5				11							21		24
*39:42	B39				5							17				21		23 24
*39:43	-				5				12								23	24

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		29				38					47	–	*37:11
		29				38				46		B37	*37:12
		29				38				46	w	–	*37:14
											46	B38, –	*38:01:01-38:02:02, 38:08:38:09, 38:11-38:16, 38:18:38:19, 38:21
						38				46		B38	*38:03
						38				46		B38	*38:04
										46		B38	*38:05
									44	46		B38	*38:06
									44	46		B38	*38:07
										46		B38	*38:10
										46		–	*38:17
										46		–	*38:20
										46		–	*38:22
											47	B3901, B39, Null, –	*39:01:01:01-39:01:01:02L, 39:01:03-39:01:08, 39:01:10-39:01:11, 39:03, 39:05:01-39:06:02, 39:09, 39:11, 39:14-39:15, 39:24, 39:26-39:29, 39:31, 39:35, 39:37-39:38Q, 39:40N-39:41, 39:44, 39:46, 39:48, 39:51-39:57
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						38					47	B3902, B39	*39:02:01, 39:08
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						38					47	B39	*39:22
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								37	38							47		B60	*40:01:07, 40:72:01- 40:72:02, 40:77
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26								37	38							47		B61, –	*40:09, 40:11, 40:18, 40:24, 40:27, 40:29, 40:35, 40:37, 40:44, 40:50, 40:56-40:57, 40:64, 40:75, 40:78, 40:82, 40:85-40:86, 40:90- 40:91, 40:99
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26						34	36		38							46		B61, -	*40:13, 40:19
								37	38							47		B60, B61	*40:14:01-40:14:03, 40:30, 40:34, 40:53
								37	38							47		B40, -	*40:15, 40:32
								37	38							47		B61	*40:16
25									38							47		B40/ B15	*40:21
25								37	38							47		B40	*40:23
25								37								47		B40, B60	*40:25, 40:69
	26							37	38							47		B21	*40:26
	26			31				37	38							47		-	*40:28
					33			37	38							47		B60, –	*40:31, 40:45, 40:80
25								37	38							47		B60	*40:38, 40:52
25									38							47	B60	*40:46	
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25								37	38			43			47	B60	*40:48		

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*40:58	B40			4															?
*40:59	B40			4					12										24
*40:60	-			4					12										24
*40:68	-																		?
*40:71	B61			3															?
*40:74	B60																		?
*40:76	B60			4															
*40:83	-																		?
*40:93	-								11			16							?
*40:95	-																		?
*40:96	-																		
*40:98	-	1																	?
*41:01, 41:06-41:07, 41:12	B41, -			4			8												24
*41:02:01-41:03:02, 41:11	B41, -			4			8												24
*41:04, 41:10	B41, -			4															24
*41:05	B41			4			8												24
*41:08	B41	1		4			8				14								24
*41:09, 45:02-45:03	B45, -			4			8												24
*42:01:01-42:02, 42:06, 42:10, 42:12	B42, -						8												24
*42:04	B42						8												24
*42:05:01-42:05:02	B42	1					8				14								24
*42:08	B42						8												24
*42:09	B42								12										24
*42:11	-						8		11										24
*42:13	-						8												24
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*44:03:07, 44:07, 44:81	B44, -											17							

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						37	38							47	B40	*40:59
25						37	38							47	-	*40:60
	26					37								47	-	*40:68
	26					37	38		41	43				47	B61	*40:71
25	26					37	38							47	B60	*40:74
25							38								B60	*40:76
						37	38							47	-	*40:83
							38							47	-	*40:93
	26				35	37	38							47	-	*40:95
	26						38						46		-	*40:96
	26					37	38							47	-	*40:98
	27		30			37	38							47	B41, -	*41:01, 41:06-41:07, 41:12
	27					37	38							47	B41, -	*41:02:01-41:03:02, 41:11
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	27	28												47	B42, -	*42:01:01-42:02, 42:06, 42:10, 42:12
	27	28	30											47	B42	*42:04
	27	28												47	B42	*42:05:01-42:05:02
		28												47	B42	*42:08
	27	28												47	B42	*42:09
	27						38							47	-	*42:11
	27	28	29											47	-	*42:13
			29				38	39					46		B44, Null, -	*44:02:01:01-44:02:13, 44:11, 44:19N, 44:21- 44:24, 44:27, 44:33- 44:34, 44:48, 44:52N, 44:55, 44:59, 44:63, 44:66-44:68, 44:71-44:74, 44:80, 44:84, 44:86- 44:87, 44:89, 44:93
			29				38						46		B44, Null, -	*44:03:01-44:03:06, 44:03:08-44:05:02, 44:13, 44:26, 44:28:01-44:30, 44:32, 44:35-44:36, 44:38- 44:39, 44:42, 44:45, 44:51, 44:56N, 44:58N, 44:61N, 44:69-44:70, 44:76-44:79, 44:82, 44:85, 44:88, 44:92, 44:94, 44:96, 44:98
			29				38						46		B44, -	*44:03:07, 44:07, 44:81

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*44:08	B44		w							17							
*44:09	B45			4						17							
*44:10	B44			4				11		17	19						
*44:12	B44			4						17							
*44:14	B44			4			8			17							
*44:15	B12			4			8	11									
*44:16, 44:91	B47/ B44, –			4		6				17							
*44:17, 44:43	B44			4				12	13	17							
*44:18	B44			4			8	11									
*44:20	B44			4			8										
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*44:31	B44			4													
*44:37, 44:64:01-44:64:02	B44, –			4		6				17							
*44:40	B44							11		16	17						
*44:41, 44:53, 44:99	B44, –			4													
*44:44	B44							11		16	17						
*44:46, 44:75	B12, –			4						17							
*44:47, 44:65	B44, –			4													
*44:49	B44	2		4						17							
*44:54	B44		3	4													
*44:57	–		w							17							
*44:60	–		3	4						17							
*44:62	–			4			8	9		17							
*44:83	–									17							
*44:90	–			4						17							
*44:95	–			4						17							
*44:97	–			4						17							
*45:01, 45:05, 45:07, 45:11	B45, –			4			8	11									24
*45:04	B21			4			8										24
*45:06	B45			4			8	11									24
*45:08	–			4			8										24
*45:09	–			4			8		12	13							24
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*46:02	B46					7		12									
*46:03, 46:08, 46:13:01- 46:13:03, 46:19, 46:21	B46, –					7		12									
*46:06	–					7		12									
*46:11	B22					7											
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*46:17	–					7		12	13								
*46:18	–					7											

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		29						38	39			46		B44	*44:08
		29						37	38	39			47	B45	*44:09
		29						38			41	46		B44	*44:10
		29							39			46		B44	*44:12
		29						38				46		B44	*44:14
			30					38			41	46		B12	*44:15
		29						38	39			46		B47/ B44, –	*44:16, 44:91
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		29	30					38	39			46		B44	*44:20
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25		29						38				46		B44	*44:31
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		29						38				46		B44	*44:40
		29						38	39			46		B44, –	*44:41, 44:53, 44:99
		29						38	39			46		B44	*44:44
		29						37	38			47		B12, –	*44:46, 44:75
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		29						38	39			46		B44	*44:49
		29						38				46		B44	*44:54
		29						38				46		–	*44:57
		29						38				46		–	*44:60
		29						38				46		–	*44:62
		29						38	39			46		–	*44:83
	28	29		32				37	38	39		47		–	*44:90
		29			34	36		38	39			46		–	*44:95
	28	29		32				38	39			46		–	*44:97
			30					37	38		41	47		B45, –	*45:01, 45:05, 45:07, 45:11
			30					37	38		41	47		B21	*45:04
	28		30					37	38		41	47		B45	*45:06
			30					37	38	40		47		–	*45:08
			30					37	38			47		–	*45:09
			30					37	38			47		–	*45:10
	28		31									45	47	B46, Null, -	*46:01:01-46:01:04, 46:04 46:05, 46:07N, 46:09- 46:10, 46:14-46:16, 46:22
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	28		31										47	B46, –	*46:03, 46:08, 46:13:01- 46:13:03, 46:19, 46:21
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	28		31									45	47	–	*46:12, 46:20
	28		31									45	47	–	*46:17
	28		31							40			47	–	*46:18

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																			B51, -	*51:04, 51:46, 51:56
																			B51, -	*51:06, 51:59
																			B51, Null	*51:08, 51:20, 51:44N
																			B51, -	*51:10, 51:81
																			-	*51:15
																			B51	*51:36
																			B51, -	*51:37, 51:63
																			-	*51:42
																			-	*51:45
																			-	*51:54, 51:78
																			-	*51:61
																			-	*51:62
																			-	*51:64
																			-	*51:68
																			-	*51:93
																			B52, -	*52:01:01, 52:01:03, 52:04-52:05, 52:07-52:08, 52:10-52:13, 52:15, 52:17 52:18
																			B52	*52:01:02, 52:01:04, 52:02-52:03, 52:06:01- 52:06:02, 52:09

Lot No.: **20K**

Lot-specific information

www.olerup-ssp.com

[illegible]

Lot No.: **20K**

Lot-specific information

www.olerup-ssp.com

	28		32		w		40			45	47	B55	*55:21
	28		32								47	B22	*55:22
	28		32								47	B55, –	*55:23, 55:32, 56:18
	28		32			38	40				47	–	*55:34
	28		32	w			40				47	–	*55:35
	28		32		35	38	40				47	–	*55:40
	28		32					41			47	B56, Null, –	*56:01:01-56:01:04, 56:08, 56:14, 56:16, 56:20, 56:24, 56:26-56:29
	28		32					41	43		47	B56	*56:02, 56:04
	28		32							45	47	B22/ 15	*56:03
	28		32		35		40				47	B56	*56:05:01
	28		32		35						47	B56	*56:05:02
	28		32		35		40			w	47	B78	*56:06
	28		32					41			46	B56	*56:07
	28		32								47	B56	*56:09
	28		32				40		43		47	B55	*56:10
	28		32								47	B56, B22	*56:11-56:12
	28	30	32					41			47	B56	*56:13
								41			47	B56	*56:17
	28		32	34	35						46	–	*56:21
							40				47	–	*56:23
	28		32		35			41			47	–	*56:25
						36			42		46	B57, –	*57:01:01-57:01:04, 57:01:06-57:01:07, 57:06, 57:08, 57:10, 57:15- 57:16, 57:18-57:20, 57:22 57:23, 57:25-57:27, 57:29 57:30
						36			42		46	B57, –	*57:01:05, 57:11, 57:13, 57:21, 57:31
						36			42		46	B57, Null, –	*57:02:01-57:03:02, 57:05, 57:17, 57:28N
						36			42		46	B57	*57:04
	29					36			42		46	B57	*57:07
	29					36			42		46	B57	*57:09
									42		47	B57	*57:12
			31			36			42		46	–	*57:14
	29					36			42		46	–	*57:24
						36			43		46	B58, Null, –	*58:01:01-58:01:02, 58:01:04, 58:04-58:05, 58:10N-58:15, 58:19, 58:21-58:24

Negative Control

Lot No.: **20K**

Lot-specific information

www.olerup-ssp.com

*58:01:03, 58:02, 58:06, 58:16, 58:25-58:26	B58, –											12													
*58:07	B58											12	13												
*58:08	B17/ B5								9																
*58:09	B17											12				17									
*58:17N	Null											12				17									
*58:18	–			3								12													
*58:20	–																	21							
*58:27	–																								
*58:28	–															17									
*59:01, 59:05	B59, –																								
*59:02-59:03	B59, –																								
*59:04	–																								
*67:01:01	B67					5												21	24						
*67:01:02-67:02	B67, -																	21	24						
*73:01	B73																		24						
*78:01, 78:02:02-78:03, 78:07	B78, –								9							18									
*78:02:01, 78:04	B78, B35								9							18									
*78:05	-								9							18									
*78:06	–								9																
*81:01	B81																								
*81:02	B81																		24						
*81:03-81:04N	Null, -																								
*82:01-82:03	B82, –					8			11							19									
*83:01	-															17									
HLA-B 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
C*01:30					4																				
C*02:06																									
C*02:23		1																							
C*03:05, 03:25, 03:27				3																					
C*03:12, 03:19																									
C*06:20																									
C*07:46									8																
C*15:02:04																									
C*15:25																									
C*16:10						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.: **20K**

Lot-specific information

www.olerup-ssp.com

[illegible]

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 5, 6, 10, 17, 20, 21, 30, 35 and 42 contain the primer pair giving rise to the shorter, 800 bp, internal positive control band in order to allow kit identification.

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

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

⁴The sequence of the B*07:01 allele has been shown to be in error.

The sequence of the B*13:05 allele has been shown to be identical to B*13:04.

The B*13:24 allele has been renamed B*13:22:02.

The sequence of the B*15:01:05 allele has been corrected and renamed B*15:120.

The B*15:22 allele has been renamed B*35:43.

The sequence of the B*15:41 allele has been shown to be identical to B*15:39.

The B*15:59 allele has been renamed B*35:44.

The B*9530 allele has been renamed B*15:27:02.

The sequence of the B*18:16 allele has been shown to be identical to B*18:14.

The sequence of the B*27:05:01 allele has been shown to be identical to B*27:05:02.

The sequence of the B*27:22 allele has been shown to be identical to the corrected B*27:06 sequence.

The B*35:73 allele has been renamed B*35:08:03.

The sequence of the B*39:01:02 allele has been shown to be identical to B*39:01:01:01.

The sequence of the B*39:21 allele has been shown to be identical to B*39:24.

The sequence of the B*40:17 allele has been shown to be identical to B*40:16.

The sequence of the B*40:41 allele has been shown to be identical to B*40:40.

The sequence of the B*42:03 allele has never been assigned.

The sequence of the B*44:01 allele has been shown to be identical to B*44:02:01:01.

The sequence of the B*50:03 allele has been shown to be identical to B*50:02.

The sequence of the B*51:25 allele has been shown to be identical to B*51:22.

The B*51:47 allele has been renamed B*51:09:02.

The sequence of the B*55:06 allele has been shown to be identical to B*55:04.

The sequence of the B*58:03 allele has never been assigned.

The B*79:01 allele has been renamed B*15:18.

The B*9530 allele has been renamed B*15:27:02.

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, the information available at the www.worldmarrow.org web site and the expert-assigned serological grouping in Tissue Antigens (2009) 73:95-170.

⁶The B*08:26, B*08:50 and the B*42:07 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*14:08 and the B*39:25N, B*39:30, B*39:32 to 39:34, 39:47 and 39:50 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*18:07:02, B*18:29 and the B*35:32, B*35:37, B*35:53N, B*35:64, B*35:66, B*35:68:01-35:68:02 and B*35:99 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*41:09 and the B*45:02 and B*45:03 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*55:04, B*55:08, B*55:13, B*55:27 and the B*56:15, B*56:19N and B*56:22 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*55:23, B*55:32 and the B*56:18 give rise to identical amplification patterns with the HLA-B low resolution primer set. These alleles can be separated by the respective high resolution primer sets.

'ser', serological HLA specificity. 'w', might be weakly amplified. '?', nucleotide sequence information not available for the primer matching sequence.

CELL LINE VALIDATION SHEET																					
HLA-B low resolution SSP kit																					
					Well																
						1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
				Prod. No.:		200959401	200959402	200963303	201068804	200963305	201071706	200959407	200959408	201071709	201068810	200959411	200959412	200963313	200967014	201071715	200959416
	IHC cell line		B*																		
1	9001	SA	*07:02		+	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
2	9280	LK707	*52:01	*73:01	-	-	-	-	-	-	-	-	-	+	-	-	-	-	-	-	-
3	9011	E4181324	*52:01		-	-	-	-	-	-	-	-	-	+	-	-	-	-	-	-	-
4	9275	GU373	*15:10	*53:01	-	-	-	-	-	-	-	-	+	-	-	-	+	-	+	-	-
5	9009	KAS011	*37:01		-	-	-	-	-	-	-	-	-	-	-	-	-	+	-	-	-
6	9353	SM	*39:01	*51:01	-	-	-	-	+	-	-	-	-	+	-	-	-	-	-	-	-
7	9020	QBL	*18:01		-	-	-	-	-	-	-	-	-	-	-	-	+	-	-	+	-
8	9025	DEU	*35:01		-	-	-	-	-	-	-	-	-	-	-	-	+	-	-	-	-
9	9026	YAR	*38:01		-	-	-	-	+	-	-	-	-	-	-	-	-	-	-	-	-
10	9107	LKT3	*54:01		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
11	9051	PITOUT	*44:03		-	-	-	+	-	-	-	-	-	-	-	-	-	-	-	-	-
12	9052	DBB	*57:01		-	-	-	-	-	-	-	-	-	-	-	-	+	-	-	-	-
13	9004	JESTHOM	*27:05		-	-	-	-	+	-	-	-	-	-	-	-	-	-	-	-	+
14	9071	OLGA	*15:01	*15:20	-	-	-	-	-	-	-	+	-	-	-	-	+	-	-	-	-
15	9075	DKB	*40:01		-	-	-	+	-	-	-	-	-	-	-	-	-	-	-	-	-
16	9037	SWEIG007	*40:02		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
17	9282	CTM3953540	*08:01	*55:01	-	+	-	-	-	-	-	-	+	-	-	-	-	-	-	-	-
18	9257	32367	*14:01	*56:01	-	-	-	+	+	-	-	-	-	-	-	-	-	-	-	-	-
19	9038	BM16	*18:01		-	-	-	-	-	-	-	-	-	-	-	-	+	-	-	+	-
20	9059	SLE005	*40:01		-	-	-	+	-	-	-	-	-	-	-	-	-	-	-	-	-
21	9064	AMALA	*15:01		-	-	-	-	-	-	-	+	-	-	-	-	+	-	-	-	-
22	9056	KOSE	*35:03		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
23	9124	IHL	*40:02	*56:02	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
24	9035	JBUSH	*38:01		-	-	-	-	+	-	-	-	-	-	-	-	-	-	-	-	-
25	9049	IBW9	*14:02		-	-	-	+	-	+	-	-	-	-	-	-	-	-	-	-	-
26	9285	WT49	*58:01		-	-	-	-	-	-	-	-	-	-	-	-	+	-	-	-	-
27	9191	CH1007	*07:05	*51:01	+	-	-	-	-	-	-	-	-	+	-	-	-	-	-	-	-
28	9320	BEL5GB	*44:02	*44:03	-	-	-	+	-	-	-	-	-	-	-	-	-	-	-	-	-
29	9050	MOU	*44:03		-	-	-	+	-	-	-	-	-	-	-	-	-	-	-	-	-
30	9021	RSH	*42:01		-	-	-	-	-	-	-	-	+	-	-	-	-	-	-	-	-
31	9019	DUCAF	*18:01		-	-	-	-	-	-	-	-	-	-	-	-	+	-	-	+	-
32	9297	HAG	*41:02		-	-	-	+	-	-	-	-	+	-	-	-	-	-	-	-	-
33	9098	MT14B	*40:01		-	-	-	+	-	-	-	-	-	-	-	-	-	-	-	-	-
34	9104	DHIF	*38:01		-	-	-	-	+	-	-	-	-	-	-	-	-	-	-	-	-
35	9302	SSTO	*44:02		-	-	-	+	-	-	-	-	-	-	-	-	-	-	-	-	-
36	9024	KT17	*15:01	*35:01	-	-	-	-	-	-	-	+	-	-	-	-	+	-	-	-	-
37	9065	HHKB	*07:02		+	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
38	9099	LZL	*15:01		-	-	-	-	-	-	-	+	-	-	-	-	+	-	-	-	-
39	9315	CML	*08:01	*27:05	-	+	-	-	+	-	-	+	-	-	-	-	-	-	-	-	+
40	9134	WHONP199	*13:02	*46:01	-	-	+	+	-	-	+	-	-	-	+	-	+	-	-	-	-
41	9055	H0301	*14:02		-	-	-	+	-	+	-	-	-	-	-	-	-	-	-	-	-
42	9066	TAB089	*46:01		-	-	-	-	-	-	-	+	-	-	-	-	+	-	-	-	-
43	9076	T7526	*46:01		-	-	-	-	-	-	-	+	-	-	-	-	+	-	-	-	-
44	9057	TEM	*38:01		-	-	-	-	+	-	-	-	-	-	-	-	-	-	-	-	-
45	9239	SHJO	*42:01	*50:01	-	-	-	+	-	-	-	-	+	-	-	-	-	-	-	-	-
46	9013	SCHU	*07:02		+	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
47	9045	TUBO	*51:01		-	-	-	-	-	-	-	-	-	+	-	-	-	-	-	-	-
48	9303	TER-ND	*35:01	*44:03	-	-	-	+	-	-	-	-	-	-	-	-	+	-	-	-	-

CELL LINE VALIDATION SHEET																																			
HLA-B low resolution SSP kit																																			
					Prod. No.:	Well																													
						17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32														
						200963317	200959418	201071719	200963320	200959421	200959422	200959423	200959424	200959425	200963326	200963327	201071728	200963329	200959430	200959431	200963332														
	IHWC cell line	B*																																	
1	9001 SA	*07:02				-	-	-	+	-	-	-	+	-	-	-	+	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
2	9280 LK707	*52:01	*73:01			-	-	-	-	-	-	-	+	-	-	-	+	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
3	9011 E4181324	*52:01				-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
4	9275 GU373	*15:10	*53:01			+	-	+	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
5	9009 KAS011	*37:01				+	-	-	+	-	-	-	-	-	-	-	-	+	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
6	9353 SM	*39:01	*51:01			-	-	-	-	+	-	+	+	-	-	-	-	-	+	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
7	9020 QBL	*18:01				-	+	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
8	9025 DEU	*35:01				+	+	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
9	9026 YAR	*38:01				-	-	-	-	-	+	+	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
10	9107 LKT3	*54:01				-	-	-	-	-	-	-	-	-	-	-	-	+	-	-	-	-	-	-	-	-	-	-	-	-	-	-	+	-	
11	9051 PITOUT	*44:03				+	-	-	-	-	-	-	-	-	-	-	-	+	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
12	9052 DBB	*57:01				+	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
13	9004 JESTHOM	*27:05				-	-	-	-	-	-	-	-	-	-	-	-	+	-	-	-	-	-	-	-	-	-	-	-	-	-	-	+	-	
14	9071 OLGA	*15:01	*15:20			+	-	+	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
15	9075 DKB	*40:01				-	-	-	-	-	-	-	+	+	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
16	9037 SWEIG007	*40:02				-	-	-	-	-	-	-	-	-	+	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
17	9282 CTM3953540	*08:01	*55:01			-	-	-	-	-	-	-	+	-	-	+	+	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	+	-	
18	9257 32367	*14:01	*56:01			-	-	-	-	-	-	+	+	-	-	-	+	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	+	-	
19	9038 BM16	*18:01				-	+	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
20	9059 SLE005	*40:01				-	-	-	-	-	-	-	+	+	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
21	9064 AMALA	*15:01				-	-	+	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
22	9056 KOSE	*35:03				+	+	-	-	-	-	-	-	-	-	-	+	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
23	9124 IHL	*40:02	*56:02			-	-	-	-	-	-	-	-	-	-	+	-	+	-	-	-	-	-	-	-	-	-	-	-	-	-	-	+	-	
24	9035 JBUSH	*38:01				-	-	-	-	+	+	+	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
25	9049 IBW9	*14:02				-	-	-	-	-	-	+	+	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
26	9285 WT49	*58:01				+	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
27	9191 CH1007	*07:05	*51:01			-	-	-	-	-	-	-	+	-	-	-	+	-	-	+	-	+	-	+	-	-	-	-	-	-	-	-	-	-	
28	9320 BEL5GB	*44:02	*44:03			+	-	-	-	-	-	-	-	-	-	-	-	-	+	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
29	9050 MOU	*44:03				+	-	-	-	-	-	-	-	-	-	-	-	+	-	-	-	+	-	-	-	-	-	-	-	-	-	-	-	-	
30	9021 RSH	*42:01				-	-	-	-	-	-	-	+	-	-	+	+	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
31	9019 DUCAF	*18:01				-	+	-	-	-	-	-	-	-	-	-	+	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
32	9297 HAG	*41:02				-	-	-	-	-	-	-	+	-	-	+	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
33	9098 MT14B	*40:01				-	-	-	-	-	-	-	+	+	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
34	9104 DHIF	*38:01				-	-	-	-	+	+	+	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
35	9302 SSTO	*44:02				+	-	-	-	-	-	-	-	-	-	-	-	-	+	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
36	9024 KT17	*15:01	*35:01			+	+	+	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
37	9065 HHKB	*07:02				-	-	-	-	-	-	-	+	-	-	-	+	-	-	+	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
38	9099 LZL	*15:01				-	-	+	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
39	9315 CML	*08:01	*27:05			-	-	-	-	-	-	-	+	-	-	+	+	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	+	-	
40	9134 WHONP199	*13:02	*46:01			-	-	-	-	-	-	-	-	-	-	-	+	-	-	-	-	-	-	-	-	-	-	-	-	-	-	+	-	-	
41	9055 H0301	*14:02				-	-	-	-	-	-	+	+	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
42	9066 TAB089	*46:01				-	-	-	-	-	-	-	-	-	-	-	+	-	-	-	-	-	-	-	-	-	-	-	-	-	-	+	-	-	
43	9076 T7526	*46:01				-	-	-	-	-	-	-	-	-	-	-	+	-	-	-	-	-	-	-	-	-	-	-	-	-	-	+	-	-	
44	9057 TEM	*38:01				-	-	-	-	+	+	+	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
45	9239 SHJO	*42:01	*50:01			-	-	-	-	-	-	-	+	-	-	+	+	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
46	9013 SCHU	*07:02				-	-	-	-	-	-	-	+	-	-	-	+	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
47	9045 TUBO	*51:01				-	-	-	-	-	-	-	-	-	-	-	-	-	+	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
48	9303 TER-ND	*35:01	*44:03			+	+	-	-	-	-	-	-	-	-	-	-	+	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	

CELL LINE VALIDATION SHEET																						
HLA-B low resolution SSP kit																						
					Well																	
						33	34	35	36	37	38	39	40	41	42	43	44	45	46	47		
				Prod. No.:		200959433	200959434	200959435	200959436	200959437	201068838	201068839	201068840	200959441	201071742	200963343	200959444	200959445	200959446	200959447		
	IHC cell line		B*																			
1	9001	SA	*07:02		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	+		
2	9280	LK707	*52:01	*73:01	-	-	+	+	-	+	-	-	-	-	-	-	-	-	+	-		
3	9011	E4181324	*52:01		-	-	+	+	-	+	-	-	-	-	-	-	-	+	+	+		
4	9275	GU373	*15:10	*53:01	-	-	-	+	-	-	-	-	-	-	-	-	+	-	+	+		
5	9009	KAS011	*37:01		-	-	-	-	-	+	-	-	-	-	-	-	-	-	+	-		
6	9353	SM	*39:01	*51:01	-	-	+	+	-	-	-	-	-	-	-	-	+	-	+	+		
7	9020	QBL	*18:01		-	-	-	-	-	-	-	-	-	-	-	-	+	-	-	+		
8	9025	DEU	*35:01		-	-	-	-	-	-	-	-	-	-	-	-	-	-	+	-		
9	9026	YAR	*38:01		-	-	-	-	-	-	-	-	-	-	-	-	-	-	+	-		
10	9107	LKT3	*54:01		-	-	-	-	-	-	-	+	+	-	-	-	-	-	-	+		
11	9051	PITOUT	*44:03		-	-	-	-	-	+	-	-	-	-	-	-	-	-	+	-		
12	9052	DBB	*57:01		-	-	-	+	-	-	-	-	-	-	+	-	-	-	+	-		
13	9004	JESTHOM	*27:05		-	-	-	-	-	+	-	-	-	-	-	-	-	-	+	-		
14	9071	OLGA	*15:01	*15:20	-	-	-	-	-	+	-	-	-	-	-	-	-	+	-	+		
15	9075	DKB	*40:01		-	-	-	-	+	+	-	-	-	-	-	-	-	-	-	+		
16	9037	SWEIG007	*40:02		-	-	-	-	+	+	-	-	-	-	-	-	-	-	-	+		
17	9282	CTM3953540	*08:01	*55:01	-	-	+	-	-	-	-	-	+	-	-	-	-	-	-	+		
18	9257	32367	*14:01	*56:01	-	-	-	-	-	-	-	-	-	+	-	-	-	-	-	+		
19	9038	BM16	*18:01		-	-	-	-	-	-	-	-	-	-	-	-	+	-	-	+		
20	9059	SLE005	*40:01		-	-	-	-	+	+	-	-	-	-	-	-	-	-	-	+		
21	9064	AMALA	*15:01		-	-	-	-	-	+	-	-	-	-	-	-	-	+	-	+		
22	9056	KOSE	*35:03		-	-	-	-	-	-	-	-	-	-	-	-	+	-	-	+		
23	9124	IHL	*40:02	*56:02	-	-	-	-	-	+	+	-	-	+	-	+	-	-	-	+		
24	9035	JBUSH	*38:01		-	-	-	-	-	-	-	-	-	-	-	-	-	-	+	-		
25	9049	IBW9	*14:02		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	+		
26	9285	WT49	*58:01		-	-	-	+	-	-	-	-	-	-	-	+	-	-	+	-		
27	9191	CH1007	*07:05	*51:01	-	-	+	+	-	-	-	-	-	-	-	-	+	-	+	+		
28	9320	BEL5GB	*44:02	*44:03	-	-	-	-	-	+	+	-	-	-	-	-	-	-	+	-		
29	9050	MOU	*44:03		-	-	-	-	-	+	-	-	-	-	-	-	-	-	+	-		
30	9021	RSH	*42:01		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	+		
31	9019	DUCAF	*18:01		-	-	-	-	-	-	-	-	-	-	-	-	+	-	-	+		
32	9297	HAG	*41:02		-	-	-	-	+	+	-	-	-	-	-	-	-	-	-	+		
33	9098	MT14B	*40:01		-	-	-	-	+	+	-	-	-	-	-	-	-	-	-	+		
34	9104	DHIF	*38:01		-	-	-	-	-	-	-	-	-	-	-	-	-	-	+	-		
35	9302	SSTO	*44:02		-	-	-	-	-	+	+	-	-	-	-	-	-	-	+	-		
36	9024	KT17	*15:01	*35:01	-	-	-	-	-	+	-	-	-	-	-	-	+	+	-	+		
37	9065	HHKB	*07:02		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	+		
38	9099	LZL	*15:01		-	-	-	-	-	+	-	-	-	-	-	-	-	+	-	+		
39	9315	CML	*08:01	*27:05	-	-	-	-	-	+	-	-	-	-	-	-	-	-	+	+		
40	9134	WHONP199	*13:02	*46:01	-	-	-	-	-	+	-	-	-	-	-	-	-	+	+	+		
41	9055	H0301	*14:02		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	+		
42	9066	TAB089	*46:01		-	-	-	-	-	-	-	-	-	-	-	-	-	+	-	+		
43	9076	T7526	*46:01		-	-	-	-	-	-	-	-	-	-	-	-	-	+	-	+		
44	9057	TEM	*38:01		-	-	-	-	-	-	-	-	-	-	-	-	-	-	+	-		
45	9239	SHJO	*42:01	*50:01	-	-	+	-	+	+	-	-	-	+	-	-	-	-	-	+		
46	9013	SCHU	*07:02		-	-	-	-	-	+	-	-	-	-	-	-	-	-	-	+		
47	9045	TUBO	*51:01		-	-	+	+	-	-	-	-	-	-	-	-	+	-	+	-		
48	9303	TER-ND	*35:01	*44:03	-	-	-	-	-	+	-	-	-	-	-	-	+	-	+	+		

CERTIFICATE OF ANALYSIS

Olerup SSP® HLA-B low resolution SSP

Product number: 101.501-48/12 – including *Taq* pol.

Lot number: 20K

Expiry date: 2012-May-01

Number of tests: 48 tests – Product No. 101.501-48

12 tests – Product No. 101.501-12

Number of wells per test: 47 + 1

Well specifications:

Well No.	Production No.	Well No.	Production No.	Well No.	Production No.
1	2009-594-01	17	2009-633-17	33	2009-594-33
2	2009-594-02	18	2009-594-18	34	2009-594-34
3	2009-633-03	19	2010-717-19	35	2009-594-35
4	2010-688-04	20	2009-633-20	36	2009-594-36
5	2009-633-05	21	2009-594-21	37	2009-594-37
6	2010-717-06	22	2009-594-22	38	2010-688-38
7	2009-594-07	23	2009-594-23	39	2010-688-39
8	2009-594-08	24	2009-594-24	40	2010-688-40
9	2010-717-09	25	2009-594-25	41	2009-594-41
10	2010-688-10	26	2009-633-26	42	2010-717-42
11	2009-594-11	27	2009-633-27	43	2009-633-43
12	2009-594-12	28	2010-717-28	44	2009-594-44
13	2009-633-13	29	2009-633-29	45	2009-594-45
14	2009-670-14	30	2009-594-30	46	2009-594-46
15	2010-717-15	31	2009-594-31	47	2009-594-47
16	2009-594-16	32	2009-633-32		

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 3, 6, 14, 19, 29, 31 and 40 were tested by separately adding one additional 3'-primer, respectively one additional 5'-primer. Additional 3'-primers in primer solutions 2, 13, 15 and 35 were tested by separately adding one additional 5'-primer. Additional 5'-primers in primer solutions 1 and 21 were tested by separately adding one additional 3'-primer. In primer solution 31, one 5'-primer was not possible to test, in primer solution 38, one 3'-primer was not possible to test, and in primer solution 42, one 5'-primer and one 3'-primer was not possible to test.

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

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

Date of approval: 2010-August-31

Approved by:

Quality Control, Supervisor

Lot No.: **20K**

Lot-specific information

www.olerup-ssp.com

Declaration of Conformity

Product name: *Olerup* SSP® HLA-B low resolution
Product number: 101.501-48/12
Lot number: 20K

Intended use: HLA-B low resolution histocompatibility 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 9001:2008 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
2010-August-31

Olle Olerup
Managing Director

Lot No.: **20K**

Lot-specific information

www.olerup-ssp.com

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