

Olerup SSP® HLA-B*44

Product number:	101.563-24u/03u – without <i>Taq</i> pol.
Lot number:	18K
Expiry date:	2012-June-01
Number of tests:	24 tests – Product No. 101.563-24u 3 tests – Product No. 101.563-03u
Number of wells per test:	48
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. 18K.

**CHANGES COMPARED TO THE PREVIOUS *OLERUP SSP*®
HLA-B*44 LOT.**

The HLA-B*44 specificity and interpretation tables have been updated for the HLA-B alleles described since the previous *Olerup SSP*® HLA-B*44 lot was made (Lot No. 73F).

The amplification patterns for some rare HLA-B*44 alleles only differ by the length of the specific PCR products.

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

Well	5'-primer	3'-primer	rationale
1	-	Added	Primer added for the B*44:02:08 allele.
8	-	Added	Primer added for the B*44:71 allele.
10	Exchanged, added	Added	Exchanged 5'-primer, primer pair added for the B*44:92 allele.
17	-	Added	Primer added for the B*44:02:08 allele.
18	Added	-	Primers added for the B*44:74, B*44:82 and B*44:96 alleles.
26	Added	Added	Primers added for the B*44:69 and B*44:85 alleles.

28	-	Added	Primer added for the B*44:68 allele.
31	Added	-	Primers added for the B*44:94. B*44:98 and B*44:99 alleles.
33	Added	Added	Primer pairs added for the B*44:80 and B*44:81 alleles.
34	Added	Added	Primer pairs added for the B*44:83 and B*44:84 alleles.
37	Added	-	Primers added for the B*44:87 and B*44:88 alleles.
40	Added	Added	Primer pair from well 46.
42	Added	Added	Primer pairs added for the B*44:90 and B*44:97 alleles, exchanged positive control primer pair.
43	-	Added	Primer added for the B*44:89 allele.
44	-	Added	Primers added for the B*44:73, B*44:76 and B*44:79 alleles.
45	Added	Added	Primer pairs added for the B*44:70 and B*44:86 alleles.
46	Moved, added	Moved, added	Primer pair moved to well 40, primer pair added for the B*44:66 allele, exchanged positive control primer pair.
47	-	Added	Primers added for the B*44:72 and B*44:93 alleles.
48	-	Added	Primer added for the B* 44:78 allele.

PRODUCT DESCRIPTION

HLA-B*44 SSP subtyping

CONTENT

The primer set contains 5'- and 3'-primers for identifying the B*44:02 to B*44:99 alleles.

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

The 48 well cut PCR plate is marked with 'HLA-B*44' in silver/gray ink.

Well No. 1 is marked with the Lot No. '18K'.

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

The interpretation of HLA-B*44 SSP subtypings will be influenced many other HLA-B alleles when present on the other haplotype. In addition, the A*30:29 allele will be amplified by primer mix 31, the C*07:04:01-07:04:03, 07:11-07:12, 07:45 and 07:63 alleles will be amplified by primer mix 39, the C*07:68 allele will be amplified by primer mixes 38 and 39, the C*07:69 allele will be amplified by primer mix 42, the C*15:25 allele will be amplified by primer mixes 1, 3, 6 and 40 and the C*16:10 allele will be amplified by primer mixes 33, 35 and 44.

UNIQUELY IDENTIFIED ALLELES

All the HLA-B*44 alleles, i.e. **B*44:02 to B*44:99**, recognized by the HLA Nomenclature Committee in April 2010¹ will give rise to unique amplification patterns by the primers in the HLA-B*44 subtyping kit².

The HLA-B*44 subtyping kit cannot distinguish the B* 44:02:01:01, 44:02:02-44:02:09 and 44:02:11-44:02:12 alleles, the B*44:03:01-44:03:11 alleles, the B* 44:05:01-44:05:02 alleles or the B*44:28:01 and B*44:28:02 alleles.

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

²The B*44:69 and 44:85 alleles can be distinguished by the different sizes of the specific PCR products generated by primer mix 26.

The B*44:72 and 44:93 alleles can be distinguished by the different sizes of the specific PCR products generated by primer mix 47.

The B*44:94 and 44:98 alleles can be distinguished by the different sizes of the specific PCR products generated by primer mix 31.

RESOLUTION IN HOMO- AND HETEROZYGOTES

The 98 phenotypically different HLA-B*44 alleles give rise to 99 amplification patterns. These can be combined in 4 950 homozygous and heterozygous combinations. 2 311 of these genotypes do not give rise to unique amplification patterns.

The differently sized specific PCR fragments generated by primer mixes 6 to 10, 18 to 21, 26 to 28, 31, 33 to 35, 40, 42 to 44 and 46 to 48 were not considered in these calculations.

The B*44:69 and 44:85 alleles, the B*44:72 and 44:93 alleles and the B*44:94 and 44:98 alleles are only distinguished by the different sizes of the specific PCR products.

SPECIFICITY TABLE

HLA-B*44 SSP subtyping

Specificities and sizes of the PCR products of the 48 primer mixes used for HLA-B*44 SSP subtyping

Primer Mix	Size of spec. PCR product ¹	Size of control band ²	Amplified HLA-B*44 alleles ³	Other amplified HLA Class I alleles ⁴
1	260 bp	800 bp	*44:02:01:01-44:14, 44:17, 44:19N, 44:21-44:30, 44:32-44:36, 44:38-44:40, 44:43-44:46, 44:48-44:53, 44:55-44:63, 44:66-44:81, 44:83-44:90, 44:92-44:98	*35:45, 35:71, 51:42, 53:22, 57:07, 83:01, C*15:25
2⁵	90 bp	800 bp	*44:02:01:01-44:02:09, 44:02:11-44:05:02, 44:09-44:33, 44:35-44:38, 44:41-44:43, 44:45-44:56N, 44:58N-44:59, 44:61N-44:80, 44:82, 44:84-44:99	*15:53, 35:63, 40:01:01-40:02:04, 40:02:06-40:09, 40:11, 40:13-40:16, 40:18-40:20, 40:22N-40:40, 40:42-40:45, 40:47-40:57, 40:59-40:82, 40:84-40:92, 40:94-40:99, 41:01-41:11, 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
3	225 bp	800 bp	*44:02:01:01-44:02:13, 44:05:01-44:06, 44:08-44:09, 44:11-44:12, 44:14, 44:16-44:17, 44:19N, 44:21-44:25, 44:27, 44:33-44:34, 44:42, 44:44, 44:48-44:49, 44:51-44:53, 44:55, 44:58N-44:59, 44:62-44:63, 44:66-44:68, 44:70-44:75, 44:78, 44:80, 44:83-44:84, 44:86-44:91, 44:93, 44:95, 44:97	*08:49, 08:60, 35:38, 37:01:01-37:01:07, 37:03N-37:06, 37:08, 37:10-37:22, 42:13, 53:22, 57:09, 57:24, 83:01, C*15:25
4	160 bp	1070 bp	*44:03:01-44:03:11, 44:07, 44:13, 44:26, 44:30, 44:32, 44:36-44:40, 44:46-44:47,	*51:42

			44:50, 44:54, 44:57, 44:60-44:61N, 44:64:01-44:65, 44:69, 44:79, 44:81, 44:85, 44:92, 44:94, 44:96, 44:98	
5⁵	75 bp	1070 bp	*44:04, 44:28:01- 44:28:02, 44:56N, 44:76	*07:20, 35:45
6¹¹	170 bp, 195 bp	1070 bp	*44:05:01-44:05:02, 44:10, 44:15, 44:17- 44:18, 44:25, 44:31, 44:39, 44:43, 44:58N, 44:62, 44:70, 44:75, 44:77-44:78, 44:82	*07:20, 15:14, 15:91, 15:131, 15:161, 35:45, 35:71, 45:01- 45:02, 45:05-45:07, 45:09, 45:11, 46:17, 50:02, 51:23, 52:15, 53:22, 57:07, 58:07, 82:01-82:03, C*15:25
7^{5,12}	145 bp, 165 bp	1070 bp	*44:06, 44:29, 44:89	*38:06-38:07, 49:03, 51:01:01-51:24:03, 51:26- 51:46, 51:48-51:49, 51:51- 51:53, 51:55-51:77, 51:79- 51:95, 52:01:01-52:01:05, 52:03-52:15, 52:17-52:19, 53:01:01-53:02, 53:04- 53:08:02, 53:10, 53:14-53:23, 58:01:01-58:02, 58:04-58:16, 58:18-58:28
8^{5,13}	90 bp, 115 bp, 300 bp	1070 bp	*44:07-44:08, 44:38, 44:57, 44:71	*15:183, 27:52, 35:84, 35:90, 40:83, 46:10, 50:07
9^{5,14}	120 bp, 195 bp	1070 bp	*44:10, 44:15, 44:18, 44:23N	*45:01, 45:05-45:07, 45:11, 50:02, 82:01-82:03
10^{5,15}	125 bp, 150 bp	800 bp	*44:24, 44:92	
11	150 bp	800 bp	*44:02:01:01-44:02:12, 44:03:01-44:05:02, 44:07, 44:10-44:39, 44:41-44:43, 44:45, 44:47-44:56N, 44:58N- 44:59, 44:61N-44:74, 44:76-44:82, 44:84- 44:89, 44:91-44:99	*37:06, 40:13, 40:19, 40:47, 40:96, 47:01:01:01- 47:01:01:02, 47:03-47:07, 49:01:01-49:02, 49:04-49:10
12⁵	145 bp	1070 bp	*44:09, 44:46, 44:75, 44:90	*15:46, 15:53, 15:106, 15:143, 18:48, 35:19, 35:47, 35:63, 40:01:01-40:11, 40:14:01-40:16, 40:18, 40:20, 40:22N-40:40, 40:42-40:45, 40:48-40:75, 40:77-40:92, 40:94-40:95, 40:97-40:99, 41:01-41:04, 41:06-41:12,

				45:01-45:11, 47:02, 47:03 ^w , 50:01:01-50:02, 50:04-50:05, 50:07-50:09
13⁵	90 bp	1070 bp	*44:13, 44:67	
14⁵	95 bp	800 bp	*44:12	*15:143, 18:48, 35:19, 35:47, 40:08, 40:25, 40:68
15	170 bp	1070 bp	*44:14, 44:17, 44:51, 44:62	*07:04, 07:19, 07:25, 08:01:01-08:05, 08:07- 08:12:03, 08:15-08:19N, 08:21-08:24, 08:26-08:27, 08:29-08:39, 08:41-08:48, 08:50-08:54, 08:56-08:61, 15:51, 15:83, 15:179, 35:38, 35:87, 37:09, 37:12, 41:01- 41:09, 41:11-41:12, 42:01:01- 42:02, 42:04-42:13, 45:09, 51:08, 51:20, 51:36, 51:44N, 52:19, 53:22, 55:20, 56:13, 57:09, 57:24, 82:01-82:03
16⁵	145 bp	800 bp	*44:18, 44:25, 44:50, 44:95	*40:13, 40:19, 49:01:01- 49:01:02, 49:04-49:10
17	195 bp	1070 bp	*44:02:01:01-44:04, 44:06-44:09, 44:11- 44:13, 44:19N-44:24, 44:26-44:30, 44:32- 44:36, 44:38-44:41, 44:44, 44:46-44:50, 44:52N-44:57, 44:59- 44:61N, 44:63, 44:65- 44:69, 44:71-44:74, 44:76, 44:79-44:81, 44:83-44:87, 44:89- 44:90, 44:92-44:99	*51:42, 83:01
18^{5,16}	115 bp, 155 bp, 260 bp	1070 bp	*44:19N, 44:31, 44:74, 44:82, 44:96	*57:07
19¹⁷	150 bp, 190 bp	1070 bp	*44:11, 44:30	
20^{5,18}	130 bp, 220 bp	1070 bp	*44:22, 44:36	
21^{5,19}	100 bp, 180 bp	800 bp	*44:16, 44:21, 44:32, 44:64:01-44:64:02	*07:28
22⁶	290 bp	800 bp	*44:26	*47:07
23^{5,10}	145 bp	800 bp	*44:02:01:01-44:05:02, 44:06 [?] , 44:07-44:09, 44:10 [?] -44:12 [?] , 44:13,	*27:47, 51:42

			44:14 [?] -44:15 [?] , 44:16, 44:17 [?] -44:18 [?] , 44:19N, 44:20 [?] , 44:21, 44:22 [?] , 44:23N, 44:24 [?] -44:26 [?] , 44:28:01 [?] -44:30 [?] , 44:32 [?] -44:38 [?] , 44:39, 44:40 [?] -44:45 [?] , 44:46, 44:47 [?] -44:48 [?] , 44:49, 44:50 [?] , 44:51-44:53, 44:54 [?] -44:55 [?] , 44:56N- 44:57, 44:58N [?] , 44:59, 44:60 [?] , 44:61N, 44:62 [?] -44:63 [?] , 44:64:01-44:66, 44:67 [?] -44:76 [?] , 44:77, 44:78 [?] -44:80 [?] , 44:81, 44:82 [?] , 44:83, 44:84 [?] - 44:99 [?]	
24⁵	135 bp	1070 bp	*44:02:01:02S	
25^{5,10}	145 bp	1070 bp	*44:06 [?] , 44:10 [?] -44:12 [?] , 44:14 [?] -44:15 [?] , 44:17 [?] - 44:18 [?] , 44:20 [?] -44:22 [?] , 44:24 [?] -44:26 [?] , 44:27, 44:28:01 [?] -44:30 [?] , 44:31, 44:32 [?] -44:38 [?] , 44:40 [?] -44:45 [?] , 44:47 [?] - 44:48 [?] , 44:50 [?] , 44:54 [?] - 44:55 [?] , 44:58N [?] , 44:60 [?] , 44:62 [?] - 44:64:01 [?] , 44:67 [?] - 44:80 [?] , 44:82 [?] , 44:84 [?] - 44:99 [?]	*07:02:01-07:57, 07:59- 07:99, 08:01:01-08:61, 13:01:01-13:04, 13:06-13:23, 13:25-13:37, 14:01 ^w -14:18 ^w , 15:01:01:01-15:01:04, 15:01:06-15:19, 15:20 ^w , 15:21, 15:23-15:40, 15:42- 15:58, 15:60-15:99, 15:101, 15:103-15:129, 15:131- 15:191, 18:01:01-18:15, 18:17N-18:49, 27:01-27:21, 27:23-27:46, 27:48-27:65N, 35:01:01 ^w -35:30 ^w , 35:31, 35:32 ^w -35:42:02 ^w , 35:43, 35:44 ^w -35:45 ^w , 35:46, 35:47 ^w - 35:56 ^w , 35:57, 35:58 ^w -35:59 ^w , 35:60, 35:61 ^w -35:72 ^w , 35:74 ^w - 35:78 ^w , 35:79, 35:80 ^w -35:86 ^w , 35:87, 35:88 ^w -35:99 ^w , 37:01:01-37:22, 38:01:01 ^w - 38:17 ^w , 38:19 ^w -38:22 ^w , 39:01:01:01 ^w -39:01:01:02L ^w , 39:01:03 ^w -39:20 ^w , 39:22 ^w - 39:56 ^w , 39:57, 40:01:01- 40:16, 40:18-40:40, 40:42- 40:99, 41:01-41:12, 42:01:01- 42:02, 42:04-42:13, 45:01- 45:06, 45:07 ^w , 45:08-45:11,

				46:01:01-46:22, 47:01:01:01-47:07, 48:01:01-48:01:02, 48:02:01 ^W -48:02:02 ^W , 48:03:01-48:22, 49:01:01-49:10, 50:01:01-50:02, 50:04-50:09, 51:01:01 ^W -51:24:03 ^W , 51:26 ^W -51:41N ^W , 51:43 ^W -51:46 ^W , 51:48 ^W -51:50 ^W , 51:52 ^W -51:95 ^W , 52:01:01 ^W -52:06:02 ^W , 52:07, 52:08 ^W -52:20 ^W , 53:01:01 ^W -53:23 ^W , 54:01-54:22, 55:01:01-55:01:02, 55:01:04-55:05, 55:07-55:40, 56:01:01-56:04, 56:05:01 ^W -56:05:02 ^W , 56:06-56:20, 56:21 ^W , 56:22-56:29, 57:01:01-57:31, 58:01:01 ^W -58:02 ^W , 58:04 ^W -58:10N ^W , 58:11, 58:12 ^W -58:19 ^W , 58:20, 58:21 ^W -58:28 ^W , 59:01-59:05, 67:01:01 ^W -67:02 ^W , 78:01 ^W -78:06 ^W , 81:01-81:02, 81:03 ^W , 81:04N, 82:01-82:02, 82:03 [?] , 83:01
26 ^{5,20}	100 bp, 135 bp, 225 bp	800 bp	*44:33, 44:69, 44:85	
27 ²¹	160 bp, 255 bp	800 bp	*44:02:10, 44:15, 44:18, 44:20, 44:34, 44:47	*40:58, 45:01-45:03, 45:05-45:07, 45:09, 45:11, 49:03, 50:02, 51:23, 52:01:02, 52:01:04, 52:02-52:03, 52:06:01-52:06:02, 52:09, 52:15
28 ^{5,22}	130 bp, 165 bp	1070 bp	*44:35, 44:68	
29	255 bp	800 bp	*44:15, 44:55	*13:23, 18:09, 27:01, 37:10, 40:47, 40:96, 49:02
30	195 bp	800 bp	*44:10, 44:15, 44:18	*45:01, 45:05-45:07, 45:11, 50:02, 82:01-82:03
31 ^{5,23}	110 bp, 195 bp, 230 bp, 260 bp	1070 bp	*44:17, 44:43, 44:94, 44:98-44:99	*15:14, 15:91, 15:131, 15:161, 35:45, 35:71, 45:09, 46:17, 53:22, 58:07, A*30:29
32	155 bp	1070 bp	*44:02:01:01-44:02:13, 44:05:01-44:06, 44:08-44:09, 44:11-44:12, 44:14-44:25, 44:27, 44:33-44:34, 44:41-	*07:04, 07:19, 07:25, 08:01:01-08:05, 08:07-08:12:03, 08:14-08:19N, 08:21-08:24, 08:26-08:39, 08:41-08:42, 08:44-08:54,

			44:42, 44:44, 44:48-44:49, 44:51-44:53, 44:55, 44:58N-44:59, 44:62-44:63, 44:66-44:68, 44:70-44:75, 44:78, 44:80, 44:83-44:84, 44:86-44:91, 44:93, 44:95, 44:97, 44:99	08:56-08:61, 15:51, 15:83, 15:179, 27:47, 35:38, 35:87, 37:01:01-37:01:07, 37:03N-37:06, 37:08-37:22, 41:01-41:12, 42:01:01-42:02, 42:04-42:13, 45:01-45:11, 51:08, 51:20, 51:36, 51:44N, 52:19, 53:22, 55:20, 56:13, 57:09, 57:24, 82:01-82:03, 83:01
33²⁴	150 bp, 175 bp, 195 bp	1070 bp	*44:16, 44:37, 44:64:01-44:64:02, 44:80-44:81, 44:91	*07:28, 15:77, 57:04, C*16:10
34²⁵	160 bp, 185 bp	800 bp	*44:15, 44:18, 44:60, 44:83-44:84	*13:01:01-13:04, 13:06-13:08Q, 13:10-13:23, 13:25-13:29, 13:31-13:37, 15:36, 15:89, 37:10, 45:01, 45:04-45:08, 45:10-45:11, 51:54, 51:78, 52:20, 53:09, 53:11-53:13, 56:13, 82:01-82:03
35^{5,26}	85 bp, 180 bp	800 bp	*44:04, 44:56N, 44:63	C*16:10
36⁵	145 bp	800 bp	*44:40, 44:44	*08:02, 15:115, 27:01, 38:02:01-38:04, 38:08, 38:15, 38:18, 56:07
37⁷	210 bp	1070 bp	*44:10, 44:14, 44:17, 44:31, 44:43, 44:45, 44:51, 44:62, 44:77, 44:82, 44:87-44:88	*07:20, 15:14, 15:91, 15:131, 15:161, 35:45, 35:71, 45:09, 46:17, 51:23, 52:15, 53:22, 57:07, 58:07, 82:01-82:03
38	225 bp	800 bp	*44:41	*07:04, 07:19, 07:25, 08:01:01-08:05, 08:07-08:08N, 08:10-08:12:03, 08:14-08:19N, 08:21-08:24, 08:26, 08:28-08:39, 08:41-08:48, 08:50-08:54, 08:56-08:59, 08:61, 15:51, 15:179, 27:47, 35:87, 37:09, 41:02:01-41:04, 41:08, 41:10-41:11, 42:01:01-42:02, 42:05:01-42:12, 82:01-82:03, C*07:68
39^{5,8}	75 bp	800 bp	*44:16, 44:42, 44:91	*07:04, 07:19, 07:25, 08:01:01-08:05, 08:07-08:12:03, 08:14-08:19N, 08:21-08:24, 08:26-08:39, 08:41-08:42, 08:44-08:54, 08:56-08:61, 15:51, 15:83, 15:179, 35:38, 35:87,

				37:01:01-37:01:07, 37:03N-37:06, 37:08-37:22, 41:01-41:12, 42:01:01-42:02, 42:04-42:13, 45:04, 45:08, 45:10, 51:08, 51:20, 51:36, 51:44N, 52:19, 55:20, 56:13, 57:09, 57:24, C*07:04:01-07:04:03, C*07:11-07:12, C*07:45, C*07:63, C*07:68
40²⁷	235 bp, 260 bp	1070 bp	*44:10, 44:15, 44:18, 44:31, 44:41, 44:48, 44:54, 44:65	*07:20, 15:14, 15:91, 15:131, 15:161, 27:47, 27:50, 35:45, 35:71, 45:01-45:03, 45:05- 45:07, 45:09, 45:11, 46:17, 50:02, 53:22, 58:07, 82:01- 82:03, C*15:25
41	255 bp	1070 bp	*44:49	*08:02
42^{5,28}	130 bp, 165 bp	800 bp	*44:14, 44:62, 44:90, 44:97	*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, 15:83, 35:87, 37:12, 41:01-41:12, 42:01:01- 42:02, 42:04-42:08, 42:10- 42:13, 45:06, 51:08, 51:20, 51:36, 51:44N, 52:19, 55:20, 56:13, 57:09, 82:01-82:03, C*07:69
43^{5,29}	110 bp, 165 bp	800 bp	*44:29, 44:52N, 44:89	
44^{5,30}	85 bp, 160 bp	800 bp	*44:53, 44:73, 44:76, 44:79	*07:28, 15:77 ^w , C*16:10
45⁹	250 bp	800 bp	*44:54, 44:70, 44:86	*07:20
46³¹	165 bp, 450 bp,	1070 bp	*44:56N, 44:66	
47^{5,32}	65 bp, 115 bp, 195 bp	1070 bp	*44:58N, 44:72, 44:93	
48^{5,33}	105 bp, 140 bp, 265 bp	1070 bp	*44:59, 44:61N, 44:78	

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*44 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.

Wells number 1, 2, 3, 10, 11, 14, 16, 21 to 23, 26, 27, 29, 30, 34 to 36, 38, 39 and 42 to 45 contain 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*44 subtyping and in order to allow kit identification.

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

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

The B*44:69 and 44:85 alleles can be distinguished by the different sizes of the specific PCR products generated by primer mix 26.

The B*44:72 and 44:93 alleles can be distinguished by the different sizes of the specific PCR products generated by primer mix 47.

The B*44:94 and 44:98 alleles can be distinguished by the different sizes of the specific PCR products generated by primer mix 31.

⁴Due to the sharing of sequence motifs between HLA-B alleles non-HLA-B*44 alleles will be amplified by primer mixes 1 to 9, 11 to 18, 21 to 23, 25, 27, 29 to 34, 36 to 42, 44 and 45. In addition, the A*30:29 allele will be amplified by primer mix 31, the C*07:04:01-07:04:03, 07:11-07:12, 07:45 and 07:63 alleles will be amplified by primer mix 39, the C*07:68 allele will be amplified by primer mixes 38 and 39, the C*07:69 allele will be amplified by primer mix 42, the C*15:25 allele will be amplified by primer mixes 1, 3, 6 and 40 and the C*16:10 allele will be amplified by primer mixes 33, 35 and 44.

⁵Short specific PCR fragments are less intense and not as sharp as longer specific bands.

⁶In primer mix 22, the positive control band may be weaker than for other B*44 primer mixes.

⁷Primer mix 37 may have a tendency of giving rise to nonspecific amplifications.

⁸Primer mix 39 may give a lower yield of specific PCR product than the other HLA-B*44 primer mixes.

⁹Primer mix 45 has tendencies of giving rise to primer oligomer formation.

¹⁰We assume that the fourth exon nucleotide sequences of are conserved within allelic groups. Primer mix 25 amplifies the B*4427 and B*4431 alleles. The purpose of primer mixes 23 and 25 is to e.g. distinguish the B*4402,4402 and B*4402,4427 genotypes.

¹¹Primer mix 6: Specific PCR fragment of 170 bp in the B*44:39 allele. Specific PCR fragment of 195 bp in the B*44:05:01-44:05:02, 44:10, 44:15, 44:17-44:18, 44:25, 44:31, 44:43, 44:58N, 44:62, 44:70, 44:75, 44:77-44:78 and 44:82 and in the B*07:20, 15:14, 15:91, 15:131, 15:161, 35:45, 35:71, 45:01-45:02, 45:05-45:07, 45:09, 45:11, 46:17, 50:02, 51:23, 52:15, 53:22, 57:07, 58:07 and 82:01-82:03 and in the C*15:25 alleles.

¹²Primer mix 7: Specific PCR fragment of 145 bp in the B* 44:06 and in the B*38:06-38:07, 49:03, 51:01:01-51:24:03, 51:26-51:46, 51:48-51:49, 51:51-51:53, 51:55-51:77, 51:79-51:95, 52:01:01-52:01:05, 52:03-52:15, 52:17-52:19, 53:01:01-53:02, 53:04-53:08:02, 53:10, 53:14-53:23, 58:01:01-58:02, 58:04-58:16 and 58:18-58:28 alleles. Specific PCR fragment of 165 bp in the B* 44:29 and 44:89 alleles.

¹³Primer mix 8: Specific PCR fragment of 90 bp in the B* 44:07-44:08 and 44:57 and in the B*15:183, 27:52, 35:84, 35:90, 40:83, 46:10 and 50:07 alleles. Specific PCR fragment of 115 bp in the B*44:38 allele. Specific PCR fragment of 300 bp in the B*44:71 allele.

¹⁴Primer mix 9: Specific PCR fragment of 120 bp in the B*44:23N allele. Specific PCR fragment of 195 bp in the B*44:10, 44:15 and 44:18 and in the B*45:01, 45:05-45:07, 45:11, 50:02 and 82:01-82:03 alleles.

¹⁵Primer mix 10: Specific PCR fragment of 125 bp in the B* 44:24 allele. Specific PCR fragment of 150 bp in the B*44:92 allele.

¹⁶Primer mix 18: Specific PCR fragment of 115 bp in the B*44:31 allele. Specific PCR fragment of 155 bp in the B*44:74 allele. Specific PCR fragment of 260 bp in the B* 44:19N, 44:82, and 44:96 and in the B*57:07 alleles.

¹⁷Primer mix 19: Specific PCR fragment of 150 bp in the B*44:11 allele. Specific PCR fragment of 190 bp in the B*44:30 allele.

¹⁸Primer mix 20: Specific PCR fragment of 130 bp in the B*44:22 allele. Specific PCR fragment of 220 bp in the B*44:36 allele.

¹⁹Primer mix 21: Specific PCR fragment of 100 bp in the B*44:32 allele. Specific PCR fragment of 180 bp in B* 44:16, 44:21 and 44:64:01-44:64:02 and in the B*07:28 alleles.

²⁰Primer mix 26: Specific PCR fragment of 100 bp in the B*44:69 allele. Specific PCR fragment of 135 bp in the B*44:33 allele. Specific PCR fragment of 225 bp in the B*44:85 allele.

²¹Primer mix 27: Specific PCR fragment of 160 bp in the B* 44:02:10 and 44:34 and in the B*40:58, 49:03, 52:01:02, 52:01:04, 52:02-52:03, 52:06:01-52:06:02 and 52:09 alleles. Specific PCR fragment of 255 bp in B* 44:15, 44:18, 44:20 and 44:47 and in the B*45:01-45:03, 45:05-45:07, 45:09, 45:11, 50:02, 51:23 and 52:15 alleles.

²²Primer mix 28: Specific PCR fragment of 130 bp in the B*44:68 allele. Specific PCR fragment of 165 bp in the B*44:35 allele.

²³Primer mix 31: Specific PCR fragment of 110 bp in the B*44:94 allele. Specific PCR fragment of 195 bp in the B*44:17 and 44:43 and in the B*15:14, 15:91, 15:131, 15:161, 35:45, 35:71, 45:09, 46:17, 53:22 and 58:07 alleles. Specific PCR fragment of 230 bp in the B*44:98 and in the A*30:29 alleles. Specific PCR fragment of 260 bp in the B*44:99 allele.

²⁴Primer mix 33: Specific PCR fragment of 150 bp in the B*44:81 allele. Specific PCR fragment of 175 bp in the B*44:80 allele. Specific PCR fragment of 195 bp in the B* 44:16, 44:37, 44:64:01-44:64:02 and 44:91 and in the B*07:28, 15:77 and 57:04 and in the C*16:10 alleles.

²⁵Primer mix 34: Specific PCR fragment of 160 bp in the B* 44:15 and 44:18 and in the B*45:01, 45:04-45:08, 45:10-45:11, 56:13 and 82:01-82:03 alleles. Specific PCR fragment of 185 bp in the B*44:60 and 44:83-44:84 and in the B*13:01:01-13:04, 13:06-13:08Q, 13:10-13:23, 13:25-13:29, 13:31-13:37, 15:36, 15:89, 37:10, 51:54, 51:78, 52:20, 53:09 and 53:11-53:13 alleles.

²⁶Primer mix 35: Specific PCR fragment of 85 bp in the B*44:63 allele. Specific PCR fragment of 180 bp in the B*44:04, B*44:56N and C*16:10 alleles.

²⁷Primer mix 40: Specific PCR fragment of 235 bp in the B*44:10, 44:15, 44:18 and 44:48 and in the B*35:45, 35:71, 45:01-45:03, 45:05-45:07, 45:09, 45:11, 50:02 and 53:22 and in the C*15:25 alleles. Specific PCR fragment of 260 bp in the B*44:31, 44:41, 44:54 and 44:65, 07:20, 15:14, 15:91, 15:131, 15:161, 27:47, 27:50 and 46:17 alleles. Specific PCR fragment of 230 and 260 bp in the 58:07 and 82:01-82:03 alleles.

²⁸Primer mix 42: Specific PCR fragment of 130 bp in the B*44:90 and 44:97 and in the B*45:06 and in the C*07:69 alleles. Specific PCR fragment of 165 bp in the B*44:14 and 44:62 and in the B*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, 15:83, 35:87, 37:12, 41:01-41:03:02, 41:05-41:12, 42:01:01-42:02, 42:04-42:08, 42:10-42:13, 51:08, 51:20, 51:36, 51:44N, 52:19, 55:20, 56:13, 57:09 and 82:01-82:03 alleles.

²⁹Primer mix 43: Specific PCR fragment of 110 bp in the B*44:52N allele. Specific PCR fragment of 165 bp in the B*44:29 and 44:89 alleles.

³⁰Primer mix 44: Specific PCR fragment of 85 bp in the B*44:53 and in the C*16:10 alleles. Specific PCR fragment of 160 bp in the B*44:73, 44:76 and 44:79 and in the B*15:77^w alleles. Specific PCR fragment of 85 bp and 160 bp in the B*07:28 allele.

³¹Primer mix 46: Specific PCR fragment of 165 bp in the B*44:66 allele. Specific PCR fragment of 450 bp in the B*44:56N allele.

³²Primer mix 47: Specific PCR fragment of 65 bp in the B*44:93 allele. Specific PCR fragment of 115 bp in the B*44:72 allele. Specific PCR fragment of 195 bp in the B*44:58N allele.

³³Primer mix 48: Specific PCR fragment of 105 bp in the B*44:61N allele. Specific PCR fragment of 140 bp in B*44:59 allele. Specific PCR fragment of 265 bp in the B*44:78 allele.

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

‘w’, might be weakly amplified.

INTERPRETATION TABLE																								
HLA-B*44 SSP subtyping																								
Amplification patterns of the B*44:02 to B*44:99 alleles																								
	Well ⁸																							
	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.	260	90	225	160	75	170	145	90	120	125	150	145	90	95	170	145	195	115	150	220	180	290	145	135
PCR product(s)						195	165	300	195	150								260	190					
Length of int. pos control ¹	800	800	800	1070	1070	1070	1070	1070	1070	800	800	1070	1070	800	1070	800	1070	1070	1070	1070	800	800	800	1070
5'-primer(s) ²	5'-TCA ³ 355	5'-TCA ³ 142	5'-TCA ³ 355	5'-Agg ³ 418	5'-gCg ³ 539	5'-TCC ³ 142	5'-gAC ³ 206	5'-TCA ³ 142	5'-TTA ³ 420	5'-TCA ³ 142	5'-gAA ³ 206	5'-gAA ³ 206	5'-gAA ³ 206	5'-gAA ³ 206	5'-ggC ³ 409	5'-gAA ³ 206	5'-Agg ³ 418	5'-C-g ³ 6	5'-gAA ³ 206	5'-CCg ³ 106	5'-CCC ³ 257	5'-CAG ³ 49	5'-ggT ³ 668	5'-CCg ³ 4 th 1
3'-primer(s) ³	5'-gTg ³ 572	5'-CgT ³ 193	5'-gTC ³ 538	5'-TCA ³ 539	5'-gCg ³ 572	5'-Tgg ³ 272	5'-ATC ³ 309	5'-CgC ³ 193	5'-gCg ³ 572	5'-CAC ³ 226	5'-gga ³ 317	5'-ggT ³ 311	5'-CgC ³ 255	5'-gTT ³ 259	5'-gTC ³ 538	5'-ATC ³ 309	5'-gCg ³ 572	5'-CAT ³ 106	5'-Cgg ³ 313	5'-CgT ³ 193	5'-gga ³ 317	5'-ACC ³ 171	5'-ggT ³ 774	5'-TCA ³ 5 th E
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.: **18K**

Lot-specific Information

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Length of spec.	260	90	225	160	75	170	145	90	120	125	150	145	90	95	170	145	195	115	150	130	100	290	145	135
PCR product(s)						195	165	115	195	150							155	190	220	180				
								300									260							
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																								
*44:02:01:01, 44:02:02-44:02:09, 44:02:11-44:02:12	1	2	3								11						17						23	
*44:02:01:02S	1	2	3								11						17						23	24
*44:02:10	1		3								11						17						23	
*44:02:13	1	2	3														17						23	
*44:03:01-44:03:11	1	2		4							11						17						23	
*44:04	1	2			5						11						17						23	
*44:05:01-44:05:02	1	2	3			6					11												23	
*44:06	1		3				7										17						?	
*44:07	1			4				8			11						17						23	
*44:08	1		3					8									17						23	
*44:09	1	2	3									12					17						23	
*44:10	1	2				6			9		11												?	
*44:11	1	2	3								11						17		19				?	
*44:12	1	2	3								11			14			17						?	
*44:13	1	2		4							11		13				17						23	
*44:14	1	2	3								11				15								?	
*44:15		2				6			9		11												?	
*44:16		2	3								11										21		23	
*44:17	1	2	3			6					11				15								?	
*44:18		2				6			9		11					16							?	
*44:19N	1	2	3								11						17	18					23	
*44:20		2									11						17						?	
*44:21	1	2	3								11						17				21		23	
*44:22	1	2	3								11						17			20			?	
*44:23N	1	2	3						9		11						17						23	
*44:24	1	2	3							10	11						17						?	
*44:25	1	2	3			6					11					16							?	
*44:26	1	2		4							11						17					22	?	
*44:27	1	2	3								11						17							
*44:28:01-44:28:02	1	2			5						11						17						?	
*44:29	1	2					7				11						17						?	
*44:30	1	2		4							11						17		19				?	
*44:31		2				6					11							18						
*44:32	1	2		4							11						17				21		?	
*44:33	1	2	3								11						17						?	
*44:34	1		3								11						17						?	
*44:35	1	2									11						17						?	
*44:36	1	2		4							11						17			20			?	
*44:37		2		4							11												?	
*44:38	1	2		4				8			11						17						?	
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.: **18K**

Lot-specific Information

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145	100	160	130	255	195	110	155	150	160	85	145	210	225	75	235	255	130	110	85	250	165	65	105	Length of spec. PCR product(s)	
	135	255	165			195		175	185	180					260		165	165	160		450	115	140		
	225					230		195														195	265		
						260																			
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.	
																								HLA-B allele ⁴	
							32																	*44:02:01:01, 44:02:02-44:02:09, 44:02:11-44:02:12	
							32																	*44:02:01:02S	
							32																	*44:02:10	
							32																	*44:02:13	
																								*44:03:01-44:03:11	
										35														*44:04	
							32																	*44:05:01-44:05:02	
?							32																	*44:06	
							32																	*44:07	
							32																	*44:08	
							32																	*44:09	
?					30							37			40									*44:10	
?							32																	*44:11	
?							32																	*44:12	
																								*44:13	
?							32					37				42								*44:14	
?		27		29	30		32		34						40									*44:15	
							32	33						39										*44:16	
?						31	32					37												*44:17	
?		27			30		32		34						40									*44:18	
							32																	*44:19N	
?		27					32																	*44:20	
?							32																	*44:21	
?							32																	*44:22	
							32																	*44:23N	
?							32																	*44:24	
?							32																	*44:25	
?																								*44:26	
25							32																	*44:27	
?																								*44:28:01-44:28:02	
?																	43							*44:29	
?																								*44:30	
25												37			40									*44:31	
?																								*44:32	
?	26						32																	*44:33	
?		27					32																	*44:34	
?			28																					*44:35	
?																								*44:36	
?								33																*44:37	
?																								*44:38	
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.	

Lot No.: **18K**

Lot-specific Information

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Length of spec.	260	90	225	160	75	170	145	90	120	125	150	145	90	95	170	145	195	115	150	130	100	290	145	135
PCR product(s)						195	165	115	195	150							155	190	220	180				
								300									260							
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
*44:39	1			4		6					11						17						23	
*44:40	1			4													17						?	
*44:41		2									11						17						?	
*44:42		2	3								11												?	
*44:43	1	2				6					11												?	
*44:44	1		3														17						?	
*44:45	1	2									11												?	
*44:46	1	2		4								12					17						23	
*44:47		2		4							11						17						?	
*44:48	1	2	3								11						17						?	
*44:49	1	2	3								11						17						23	
*44:50	1	2		4							11					16	17						?	
*44:51	1	2	3								11				15								23	
*44:52N	1	2	3								11						17						23	
*44:53	1	2	3								11						17						23	
*44:54		2		4							11						17						?	
*44:55	1	2	3								11						17						?	
*44:56N	1	2			5						11						17						23	
*44:57	1			4				8									17						23	
*44:58N	1	2	3			6					11												?	
*44:59	1	2	3								11						17						23	
*44:60	1			4													17						?	
*44:61N	1	2		4							11						17						23	
*44:62	1	2	3			6					11				15								?	
*44:63	1	2	3								11						17						?	
*44:64:01		2		4							11										21		23	
*44:64:02		2		4							11										21		23	
*44:65		2		4							11						17						23	
*44:66	1	2	3								11						17						23	
*44:67	1	2	3								11		13				17						?	
*44:68	1	2	3								11						17						?	
*44:69, 44:85 ⁵	1	2		4							11						17						?	
*44:70	1	2	3			6					11												?	
*44:71	1	2	3					8			11						17						?	
*44:72, 44:93 ⁶	1	2	3								11						17						?	
*44:73	1	2	3								11						17						?	
*44:74	1	2	3								11						17	18					?	
*44:75	1	2	3			6						12											?	
*44:76	1	2			5						11						17						?	
*44:77	1	2				6					11												23	
*44:78	1	2	3			6					11												?	
*44:79	1	2		4							11						17						?	
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.: **18K**

Lot-specific Information

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145	100	160	130	255	195	110	155	150	160	85	145	210	225	75	235	255	130	110	85	250	165	65	105	Length of spec. PCR product(s)	
	135	255	165			195		175	185	180					260		165	165	160		450	115	140		
	225					230		195														195	265		
						260																			
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.	
																								*44:39	
?											36													*44:40	
?							32						38		40									*44:41	
?							32							39										*44:42	
?						31						37												*44:43	
?							32				36													*44:44	
?												37												*44:45	
																								*44:46	
?		27																						*44:47	
?							32								40									*44:48	
							32									41								*44:49	
?																								*44:50	
							32					37												*44:51	
							32											43						*44:52N	
							32												44					*44:53	
?															40					45				*44:54	
?				29			32																	*44:55	
										35											46			*44:56N	
																								*44:57	
?							32															47		*44:58N	
							32																48	*44:59	
?									34															*44:60	
																							48	*44:61N	
?							32					37					42							*44:62	
?							32			35														*44:63	
?								33																*44:64:01	
							33																	*44:64:02	
															40									*44:65	
							32														46			*44:66	
?							32																	*44:67	
?			28				32																	*44:68	
?	26																							*44:69, 44:85 ⁵	
?							32													45				*44:70	
?							32																	*44:71	
?							32															47		*44:72, 44:93 ⁶	
?							32												44					*44:73	
?							32																	*44:74	
?							32																	*44:75	
?																			44					*44:76	
?												37												*44:77	
?							32																48	*44:78	
?																			44					*44:79	
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.	

Lot No.: **18K**

Lot-specific Information

www.olerup-ssp.com

Length of spec.	260	90	225	160	75	170	145	90	120	125	150	145	90	95	170	145	195	115	150	130	100	290	145	135
PCR product(s)						195	165	115	195	150							155	190	220	180				
								300									260							
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
*44:80	1	2	3								11						17						?	
*44:81	1			4							11						17						23	
*44:82		2				6					11							18					?	
*44:83	1		3														17						23	
*44:84	1	2	3								11						17						?	
*44:86	1	2	3								11						17						?	
*44:87	1	2	3								11						17						?	
*44:88	1	2	3								11												?	
*44:89	1	2	3				7				11						17						?	
*44:90	1	2	3									12					17						?	
*44:91		2	3								11												?	
*44:92	1	2		4						10	11						17						?	
*44:94, 44:98 ⁷	1	2		4							11						17						?	
*44:95	1	2	3								11					16	17						?	
*44:96	1	2		4							11						17	18					?	
*44:97	1	2	3								11						17						?	
*44:99		2									11						17						?	
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.: **18K**

Lot-specific Information

www.olerup-ssp.com

145	100	160	130	255	195	110	155	150	160	85	145	210	225	75	235	255	130	110	85	250	165	65	105	Length of spec. PCR product(s)	
	135	255	165			195		175	185	180					260		165	165	160		450	115	140		
	225					230		195														195	265		
						260																			
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.	
?							32	33																*44:80	
								33																*44:81	
?												37												*44:82	
							32		34															*44:83	
?							32		34															*44:84	
?							32													45				*44:86	
?							32					37												*44:87	
?							32					37												*44:88	
?							32											43						*44:89	
?							32										42							*44:90	
?							32	33						39										*44:91	
?																								*44:92	
?						31																		*44:94, 44:98 ⁷	
?							32																	*44:95	
?																								*44:96	
?							32										42							*44:97	
?						31	32																	*44:99	
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.	

Lot No.: **18K**

Lot-specific Information

www.olerup-ssp.com

Length of spec.	260	90	225	160	75	170	145	90	120	125	150	145	90	95	170	145	195	115	150	130	100	290	145	135
PCR product(s)						195	165	115	195	150								155	190	220	180			
								300										260						
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
*07:02:01-07:03, 07:05:01-07:18:02, 07:21-07:24, 07:26-07:27, 07:29-07:57, 07:59-07:59, 08:06, 08:13, 08:20, 08:25, 08:40, 08:55, 13:09, 13:30, 15:01:01-15:01:04, 15:01:06-15:13, 15:15-15:19, 15:21, 15:23-15:35, 15:37-15:40, 15:42-15:45, 15:47-15:50, 15:52, 15:54-15:58, 15:60-15:76, 15:78:01-15:82, 15:84-15:88, 15:90, 15:92-15:99, 15:101, 15:103-15:105, 15:107-15:114, 15:116-15:129, 15:132-15:142, 15:144-15:160, 15:162-15:178, 15:180-15:182N, 15:184-15:191,																								
18:01:01-18:08, 18:10-18:15, 18:17N-18:47, 18:49, 27:02-27:21, 27:23-27:46, 27:48-27:49, 27:51, 27:53-27:65N, 35:31, 35:43, 35:46, 35:57, 35:60, 35:79, 37:02, 37:07, 39:57, 40:12, 40:21, 40:46, 40:93, 46:01:01-46:09, 46:11-46:16, 46:18-46:22, 48:01:01-48:01:02, 48:03:01-48:22, 54:01-54:22, 55:01:01-55:01:02, 55:01:04-55:05, 55:07-55:19, 55:21-55:40, 56:01:01-56:04, 56:06, 56:08-56:12, 56:14-56:20, 56:22-56:29, 57:01:01-57:03:02, 57:05-57:06, 57:08, 57:10-57:23, 57:25-57:31, 59:01-59:05, 81:01-81:02, 81:04N																								
*07:04, 07:19, 07:25, 08:07, 08:37, 15:51, 15:179, 37:09, 42:09															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.: **18K**

Lot-specific Information

www.olerup-ssp.com

145	100	160	130	255	195	110	155	150	160	85	145	210	225	75	235	255	130	110	85	250	165	65	105	Length of spec. PCR product(s)	
	135	255	165			195		175	185	180					260		165	165	160		450	115	140		
	225					230		195														195	265		
						260																			
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.	
25																								*07:02:01-07:03, 07:05:01-07:18:02, 07:21-07:24, 07:26-07:27, 07:29-07:57, 07:59-07:99, 08:06, 08:13, 08:20, 08:25, 08:40, 08:55, 13:09, 13:30, 15:01:01:01-15:01:04, 15:01:06-15:13, 15:15-15:19, 15:21, 15:23-15:35, 15:37-15:40, 15:42-15:45, 15:47-15:50, 15:52, 15:54-15:58, 15:60-15:76, 15:78:01-15:82, 15:84-15:88, 15:90, 15:92-15:99, 15:101, 15:103-15:105, 15:107-15:114, 15:116-15:129, 15:132-15:142, 15:144-15:160, 15:162-15:178, 15:180-15:182N, 15:184-15:191,	
																								18:01:01-18:08, 18:10-18:15, 18:17N-18:47, 18:49, 27:02-27:21, 27:23-27:46, 27:48-27:49, 27:51, 27:53-27:65N, 35:31, 35:43, 35:46, 35:57, 35:60, 35:79, 37:02, 37:07, 39:57, 40:12, 40:21, 40:46, 40:93, 46:01:01-46:09, 46:11-46:16, 46:18-46:22, 48:01:01-48:01:02, 48:03:01-48:22, 54:01-54:22, 55:01:01-55:01:02, 55:01:04-55:05, 55:07-55:19, 55:21-55:40, 56:01:01-56:04, 56:06, 56:08-56:12, 56:14-56:20, 56:22-56:29, 57:01:01-57:03:02, 57:05-57:06, 57:08, 57:10-57:23, 57:25-57:31, 59:01-59:05, 81:01-81:02, 81:04N	
25							32							38	39									*07:04, 07:19, 07:25, 08:07, 08:37, 15:51, 15:179, 37:09, 42:09	
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.	

Lot No.: **18K**

Lot-specific Information

www.olerup-ssp.com

Length of spec.	260	90	225	160	75	170	145	90	120	125	150	145	90	95	170	145	195	115	150	130	100	290	145	135
PCR product(s)							195	165	115	195	150							155	190	220	180			
								300										260						
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
*07:20					5	6																		
*07:28																					21			
*08:01:01-08:01:10, 08:03-08:05, 08:08N, 08:10-08:12:03, 08:15-08:19N, 08:21-08:24, 08:26, 08:29-08:36, 08:38-08:39, 08:41-08:42, 08:44-08:48, 08:50-08:54, 08:56-08:59, 08:61, 35:87, 42:01:01-42:02, 42:05:01-42:08, 42:10-42:12															15									
*08:02															15									
*08:09, 08:27, 15:83, 42:04, 55:20															15									
*08:14, 08:28																								
*08:43															15									
*08:49, 37:01:01-37:01:07, 37:03N-37:05, 37:08, 37:11, 37:13-37:22			3																					
*08:60, 37:12, 42:13, 57:09			3												15									
*13:01:01-13:04, 13:06-13:08Q, 13:10-13:22:02, 13:25-13:29, 13:31-13:37, 15:36, 15:89																								
*13:23																								
*14:01-14:18, 15:20, 35:01:01-35:18, 35:20:01-35:30, 35:32-35:37, 35:39-35:42:02, 35:44, 35:48-35:56, 35:58-35:59, 35:61-35:62, 35:64-35:70, 35:72, 35:74-35:78, 35:80-35:83, 35:85-35:86, 35:88-35:89, 35:91-35:99, 38:01:01-38:01:04, 38:05, 38:09-38:14, 38:16-38:17, 38:19-38:22, 39:01:01:01-39:01:01:02L, 39:01:03-39:20, 39:22-39:56, 48:02:01-48:02:02, 51:50, 52:16, 53:03, 56:05:01-56:05:02, 56:21, 58:17N, 67:01:01-67:02, 78:01-78:06, 81:03																								
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.: **18K**

Lot-specific Information

www.olerup-ssp.com

145	100	160	130	255	195	110	155	150	160	85	145	210	225	75	235	255	130	110	85	250	165	65	105	Length of spec.	
	135	255	165			195		175	185	180					260		165	165	160		450	115	140	PCR product(s)	
	225					230		195														195	265		
						260																			
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.	
25												37			40					45				*07:20	
25								33											44					*07:28	
25							32							38	39			42						*08:01:01-08:01:10, 08:03-08:05, 08:08N, 08:10-08:12:03, 08:15-08:19N, 08:21-08:24, 08:26, 08:29-08:36, 08:38-08:39, 08:41-08:42, 08:44-08:48, 08:50-08:54, 08:56-08:59, 08:61, 35:87, 42:01:01-42:02, 42:05:01-42:08, 42:10-42:12	
25							32			36		38	39			41	42							*08:02	
25							32							39			42							*08:09, 08:27, 15:83, 42:04, 55:20	
25							32						38	39										*08:14, 08:28	
25													38				42							*08:43	
25							32							39										*08:49, 37:01:01-37:01:07, 37:03N-37:05, 37:08, 37:11, 37:13-37:22	
25							32							39			42							*08:60, 37:12, 42:13, 57:09	
25										34														*13:01:01-13:04, 13:06-13:08Q, 13:10-13:22:02, 13:25-13:29, 13:31-13:37, 15:36, 15:89	
25				29						34														*13:23	
W																								*14:01-14:18, 15:20, 35:01:01-35:18, 35:20:01-35:30, 35:32-35:37, 35:39-35:42:02, 35:44, 35:48-35:56, 35:58-35:59, 35:61-35:62, 35:64-35:70, 35:72, 35:74-35:78, 35:80-35:83, 35:85-35:86, 35:88-35:89, 35:91-35:99, 38:01:01-38:01:04, 38:05, 38:09-38:14, 38:16-38:17, 38:19-38:22, 39:01:01:01-39:01:01:02L, 39:01:03-39:20, 39:22-39:56, 48:02:01-48:02:02, 51:50, 52:16, 53:03, 56:05:01-56:05:02, 56:21, 58:17N, 67:01:01-67:02, 78:01-78:06, 81:03	
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.	

Lot No.: **18K**

Lot-specific Information

www.olerup-ssp.com

Length of spec.	260	90	225	160	75	170	145	90	120	125	150	145	90	95	170	145	195	115	150	130	100	290	145	135
PCR product(s)						195	165	115	195	150							155	190	220	180				
								300									260							
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
*15:14, 15:91, 15:131, 15:161, 46:17						6																		
*15:46, 15:106, 40:02:05, 40:10												12												
*15:53, 40:01:01-40:02:04, 40:02:06-40:07, 40:09, 40:11, 40:14:01-40:16, 40:18, 40:20, 40:22N-40:24, 40:26-40:40, 40:42-40:45, 40:48-40:57, 40:59-40:67, 40:69-40:75, 40:77-40:82, 40:84-40:92, 40:94-40:95, 40:97-40:99, 47:02, 50:01:01-50:01:02, 50:04- 50:05, 50:08-50:09		2										12												
*15:77																								
*15:115, 56:07																								
*15:143, 18:48												12		14										
*15:183, 27:52, 46:10								8																
*18:09																								
*27:01																								
*27:47																						23		
*27:50																								
*35:19, 35:47												12		14										
*35:38			3												15									
*35:45	1				5	6																		
*35:63		2										12												
*35:71	1					6																		
*35:84, 35:90								8																
*37:06			3									11												
*37:10			3																					
*38:02:01-38:04, 38:08, 38:15																								
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.: **18K**

Lot-specific Information

www.olerup-ssp.com

145	100	160	130	255	195	110	155	150	160	85	145	210	225	75	235	255	130	110	85	250	165	65	105	Length of spec. PCR product(s)	
	135	255	165			195		175	185	180					260		165	165	160		450	115	140		
	225					230		195														195	265		
						260																			
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.	
25						31						37			40									*15:14, 15:91, 15:131, 15:161, 46:17	
25																								*15:46, 15:106, 40:02:05, 40:10	
25																								*15:53, 40:01:01-40:02:04, 40:02:06-40:07, 40:09, 40:11, 40:14:01-40:16, 40:18, 40:20, 40:22N-40:24, 40:26-40:40, 40:42-40:45, 40:48-40:57, 40:59-40:67, 40:69-40:75, 40:77-40:82, 40:84-40:92, 40:94-40:95, 40:97-40:99, 47:02, 50:01:01-50:01:02, 50:04- 50:05, 50:08-50:09	
25								33											w					*15:77	
25											36													*15:115, 56:07	
25																								*15:143, 18:48	
25																								*15:183, 27:52, 46:10	
25				29																				*18:09	
25				29							36													*27:01	
							32						38		40									*27:47	
25															40									*27:50	
w																								*35:19, 35:47	
w							32							39										*35:38	
w						31						37			40									*35:45	
w																								*35:63	
w						31						37			40									*35:71	
w																								*35:84, 35:90	
25							32							39										*37:06	
25				29			32		34					39										*37:10	
w											36													*38:02:01-38:04, 38:08, 38:15	
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.	

Lot No.: **18K**

Lot-specific Information

www.olerup-ssp.com

Length of spec.	260	90	225	160	75	170	145	90	120	125	150	145	90	95	170	145	195	115	150	130	100	290	145	135
PCR product(s)						195	165	115	195	150							155	190	220	180				
								300									260							
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
*38:06-38:07, 51:01:01-51:07:02, 51:09:01-51:19, 51:21-51:22, 51:24:01-51:24:03, 51:26-51:35, 51:37-51:41N, 51:43, 51:45-51:46, 51:48-51:49, 51:52-51:53, 51:55-51:77, 51:79-51:95, 52:01:01, 52:01:03, 52:01:05, 52:04-52:05, 52:08, 52:10-52:14, 52:17-52:18, 53:01:01-53:02, 53:04-53:08:02, 53:10, 53:14-53:21, 53:23, 58:01:01-58:02, 58:04-58:06, 58:08-58:10N, 58:12-58:16, 58:18-58:19, 58:21-58:28							7																	
*38:18																								
*40:08, 40:25, 40:68		2										12		14										
*40:13, 40:19, 49:01:01-49:01:02, 49:04-49:10		2									11				16									
*40:47, 40:96, 49:02		2									11													
*40:58												12												
*40:76, 50:06		2																						
*40:83, 50:07								8				12												
*41:01, 41:06-41:07, 41:09		2										12			15									
*41:02:01-41:04, 41:08, 41:11		2										12			15									
*41:05		2													15									
*41:10		2										12												
*41:12												12			15									
*45:01, 45:05, 45:11		2				6			9			12												
*45:02		2				6						12												
*45:03		2										12												
*45:04, 45:08, 45:10		2										12												
*45:06		2				6			9			12												
*45:07		2				6			9			12												
*45:09		2				6						12			15									
*47:01:01:01-47:01:01:02, 47:04-47:06		2									11													
*47:03		2									11	w												
*47:07		2									11										22			
*49:03							7																	
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.: **18K**

Lot-specific Information

www.olerup-ssp.com

145	100	160	130	255	195	110	155	150	160	85	145	210	225	75	235	255	130	110	85	250	165	65	105	Length of spec. PCR product(s)
	135	255	165			195		175	185	180					260		165	165	160		450	115	140	
	225					230		195														195	265	
						260																		
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.
w																								*38:06-38:07, 51:01:01-51:07:02, 51:09:01-51:19, 51:21-51:22, 51:24:01-51:24:03, 51:26-51:35, 51:37-51:41N, 51:43, 51:45-51:46, 51:48-51:49, 51:52-51:53, 51:55-51:77, 51:79-51:95, 52:01:01, 52:01:03, 52:01:05, 52:04-52:05, 52:08, 52:10-52:14, 52:17-52:18, 53:01:01-53:02, 53:04-53:08:02, 53:10, 53:14-53:21, 53:23, 58:01:01-58:02, 58:04-58:06, 58:08-58:10N, 58:12-58:16, 58:18-58:19, 58:21-58:28
											36													*38:18
	25																							*40:08, 40:25, 40:68
	25																							*40:13, 40:19, 49:01:01-49:01:02, 49:04-49:10
25				29																				*40:47, 40:96, 49:02
25	27																							*40:58
25																								*40:76, 50:06
25																								*40:83, 50:07
25							32							39		42								*41:01, 41:06-41:07, 41:09
25							32						38	39		42								*41:02:01-41:04, 41:08, 41:11
25							32							39		42								*41:05
25							32						38	39		42								*41:10
25							32							39		42								*41:12
25	27			30			32	34							40									*45:01, 45:05, 45:11
25	27						32								40									*45:02
25	27						32								40									*45:03
25							32	34						39										*45:04, 45:08, 45:10
25	27			30			32	34							40	42								*45:06
w	27			30			32	34							40									*45:07
25	27					31	32					37			40									*45:09
25																								*47:01:01:01-47:01:01:02, 47:04-47:06
25																								*47:03
25																								*47:07
25	27																							*49:03
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.

Lot No.: **18K**

Lot-specific Information

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Length of spec.	260	90	225	160	75	170	145	90	120	125	150	145	90	95	170	145	195	115	150	130	100	290	145	135
PCR product(s)						195	165	115	195	150							155	190	220	180				
								300									260							
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
*50:02		2				6			9			12												
*51:08, 51:20, 51:36, 51:44N, 52:19							7								15									
*51:23, 52:15						6	7																	
*51:42	1			4			7										17						23	
*51:51							7																	
*51:54, 51:78, 52:20, 53:09, 53:11-53:13																								
*52:01:02, 52:01:04, 52:03, 52:06:01-52:06:02, 52:09							7																	
*52:02																								
*52:07, 58:11, 58:20							7																	
*53:22	1		3			6	7								15									
*56:13															15									
*57:04																								
*57:07	1					6											18							
*57:24			3												15									
*58:07						6	7																	
*82:01-82:02						6			9						15									
*82:03						6			9						15									
*83:01	1		3														17							
A*30:29																								
C*07:04:01-07:04:03, C*07:11-07:12, C*07:45, C*07:63																								
C*07:68																								
C*07:69																								
C*15:25	1		3			6																		
C*16:10																								
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.: **18K**

Lot-specific Information

www.olerup-ssp.com

145	100	160	130	255	195	110	155	150	160	85	145	210	225	75	235	255	130	110	85	250	165	65	105	Length of spec. PCR product(s)	
	135	255	165			195		175	185	180					260		165	165	160		450	115	140		
	225					230		195														195	265		
						260																			
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.	
25		27			30										40									*50:02	
w							32							39			42							*51:08, 51:20, 51:36, 51:44N, 52:19	
w		27										37												*51:23, 52:15	
																								*51:42	
																								*51:51	
w									34															*51:54, 51:78, 52:20, 53:09, 53:11-53:13	
w		27																						*52:01:02, 52:01:04, 52:03, 52:06:01-52:06:02, 52:09	
w		27																						*52:02	
25																								*52:07, 58:11, 58:20	
w						31	32					37			40									*53:22	
25							32		34					39			42							*56:13	
25								33																*57:04	
25												37												*57:07	
25							32							39										*57:24	
w						31						37			40									*58:07	
25					30	32		34				37	38		40	42								*82:01-82:02	
?					30	32		34				37	38		40	42								*82:03	
25						32																		*83:01	
						31																		A*30:29	
														39										C*07:04:01-07:04:03, C*07:11-07:12, C*07:45, C*07:63	
													38	39										C*07:68	
																42								C*07:69	
															40									C*15:25	
								33	35									44						C*16:10	
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.	

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*44 subtyping.

In addition, wells number 1, 2, 3, 10, 11, 14, 16, 21 to 23, 26, 27, 29, 30, 34 to 36, 38, 39 and 42 to 45 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 4th 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 2nd, 3rd, 4th or 5th exon or 3rd intron, 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 B*4401 has been shown to be identical to B*4402.

⁵The B*44:69 and 44:85 alleles can be distinguished by the different sizes of the specific PCR products generated by primer mix 26.

⁶The B* 44:72 and 44:93 alleles can be distinguished by the different sizes of the specific PCR products generated by primer mix 47.

⁷The B* 44:94 and 44:98 alleles can be distinguished by the different sizes of the specific PCR products generated by primer mix 31.

⁸Primer mix 6: Specific PCR fragment of 170 bp in the B*44:39 allele. Specific PCR fragment of 195 bp in the B*44:05:01-44:05:02, 44:10, 44:15, 44:17-44:18, 44:25, 44:31, 44:43, 44:58N, 44:62, 44:70, 44:75, 44:77-44:78 and 44:82 and in the B*07:20, 15:14, 15:91, 15:131, 15:161, 35:45, 35:71, 45:01-45:02, 45:05-45:07, 45:09, 45:11, 46:17, 50:02, 51:23, 52:15, 53:22, 57:07, 58:07 and 82:01-82:03 and in the C*15:25 alleles.

Primer mix 7: Specific PCR fragment of 145 bp in the B* 44:06 and in the B*38:06-38:07, 49:03, 51:01:01-51:24:03, 51:26-51:46, 51:48-51:49, 51:51-51:53, 51:55-51:77, 51:79-51:95, 52:01:01-52:01:05, 52:03-52:15, 52:17-52:19, 53:01:01-53:02, 53:04-53:08:02, 53:10, 53:14-53:23, 58:01:01-58:02, 58:04-58:16 and 58:18-58:28 alleles. Specific PCR fragment of 165 bp in the B* 44:29 and 44:89 alleles.

Primer mix 8: Specific PCR fragment of 90 bp in the B* 44:07-44:08 and 44:57 and in the B*15:183, 27:52, 35:84, 35:90, 40:83, 46:10 and 50:07 alleles. Specific PCR fragment of 115 bp in the B*44:38 allele. Specific PCR fragment of 300 bp in the B*44:71 allele.

Primer mix 9: Specific PCR fragment of 120 bp in the B*44:23N allele. Specific PCR fragment of 195 bp in the B*44:10, 44:15 and 44:18 and in the B*45:01, 45:05-45:07, 45:11, 50:02 and 82:01-82:03 alleles.

Primer mix 10: Specific PCR fragment of 125 bp in the B* 44:24 allele. Specific PCR fragment of 150 bp in the B*44:92 allele.

Primer mix 18: Specific PCR fragment of 115 bp in the B*44:31 allele. Specific PCR fragment of 155 bp in the B*44:74 allele. Specific PCR fragment of 260 bp in the B* 44:19N, 44:82, and 44:96 and in the B*57:07 alleles.

Primer mix 19: Specific PCR fragment of 150 bp in the B*44:11 allele. Specific PCR fragment of 190 bp in the B*44:30 allele.

Primer mix 20: Specific PCR fragment of 130 bp in the B*44:22 allele. Specific PCR fragment of 220 bp in the B*44:36 allele.

Primer mix 21: Specific PCR fragment of 100 bp in the B*44:32 allele. Specific PCR fragment of 180 bp in B* 44:16, 44:21 and 44:64:01-44:64:02 and in the B*07:28 alleles.⁰Primer mix 26: Specific PCR fragment of 100 bp in the B*44:69 allele. Specific PCR fragment of 135 bp in the B*44:33 allele. Specific PCR fragment of 225 bp in the B*44:85 allele.

Primer mix 27: Specific PCR fragment of 160 bp in the B* 44:02:10 and 44:34 and in the B*40:58, 49:03, 52:01:02, 52:01:04, 52:02-52:03, 52:06:01-52:06:02 and 52:09 alleles. Specific PCR fragment of 255 bp in B* 44:15, 44:18, 44:20 and 44:47 and in the B*45:01-45:03, 45:05-45:07, 45:09, 45:11, 50:02, 51:23 and 52:15 alleles.

Primer mix 28: Specific PCR fragment of 130 bp in the B*44:68 allele. Specific PCR fragment of 165 bp in the B*44:35 allele.

Primer mix 31: Specific PCR fragment of 110 bp in the B*44:94 allele. Specific PCR fragment of 195 bp in the B*44:17 and 44:43 and in the B*15:14, 15:91, 15:131, 15:161, 35:45, 35:71, 45:09, 46:17, 53:22 and

58:07 alleles. Specific PCR fragment of 230 bp in the B*44:98 and in the A*30:29 alleles. Specific PCR fragment of 260 bp in the B*44:99 allele.

Primer mix 33: Specific PCR fragment of 150 bp in the B*44:81 allele. Specific PCR fragment of 175 bp in the B*44:80 allele. Specific PCR fragment of 195 bp in the B* 44:16, 44:37, 44:64:01-44:64:02 and 44:91 and in the B*07:28, 15:77 and 57:04 and in the C*16:10 alleles.

Primer mix 34: Specific PCR fragment of 160 bp in the B* 44:15 and 44:18 and in the B*45:01, 45:04-45:08, 45:10-45:11, 56:13 and 82:01-82:03 alleles. Specific PCR fragment of 185 bp in the B*44:60 and 44:83-44:84 and in the B*13:01:01-13:04, 13:06-13:08Q, 13:10-13:23, 13:25-13:29, 13:31-13:37, 15:36, 15:89, 37:10, 51:54, 51:78, 52:20, 53:09 and 53:11-53:13 alleles.

Primer mix 35: Specific PCR fragment of 85 bp in the B*44:63 allele. Specific PCR fragment of 180 bp in the B*44:04, B*44:56N and C*16:10 alleles.

Primer mix 40: Specific PCR fragment of 235 bp in the B*44:10, 44:15, 44:18 and 44:48 and in the B*35:45, 35:71, 45:01-45:03, 45:05-45:07, 45:09, 45:11, 50:02 and 53:22 and in the C*15:25 alleles. Specific PCR fragment of 260 bp in the B*44:31, 44:41, 44:54 and 44:65, 07:20, 15:14, 15:91, 15:131, 15:161, 27:47, 27:50 and 46:17 alleles. Specific PCR fragment of 230 and 260 bp in the 58:07 and 82:01-82:03 alleles.

Primer mix 42: Specific PCR fragment of 130 bp in the B*44:90 and 44:97 and in the B*45:06 and in the C*07:69 alleles. Specific PCR fragment of 165 bp in the B*44:14 and 44:62 and in the B*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, 15:83, 35:87, 37:12, 41:01-41:03:02, 41:05-41:12, 42:01:01-42:02, 42:04-42:08, 42:10-42:13, 51:08, 51:20, 51:36, 51:44N, 52:19, 55:20, 56:13, 57:09 and 82:01-82:03 alleles.

Primer mix 43: Specific PCR fragment of 110 bp in the B*44:52N allele. Specific PCR fragment of 165 bp in the B*44:29 and 44:89 alleles.

Primer mix 44: Specific PCR fragment of 85 bp in the B*44:53 and in the C*16:10 alleles. Specific PCR fragment of 160 bp in the B*44:73, 44:76 and 44:79 and in the B*15:77^w alleles. Specific PCR fragment of 85 bp and 160 bp in the B*07:28 allele.

Primer mix 46: Specific PCR fragment of 165 bp in the B*44:66 allele. Specific PCR fragment of 450 bp in the B*44:56N allele.

Primer mix 47: Specific PCR fragment of 65 bp in the B*44:93 allele. Specific PCR fragment of 115 bp in the B*44:72 allele. Specific PCR fragment of 195 bp in the B*44:58N allele.

Primer mix 48: Specific PCR fragment of 105 bp in the B*44:61N allele. Specific PCR fragment of 140 bp in B*44:59 allele. Specific PCR fragment of 265 bp in the B*44:78 allele.

‘w’, might be weakly amplified.

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

CERTIFICATE OF ANALYSIS

Olerup SSP® HLA-B*44 SSP

Product number: 101.563-24u/03u – without *Taq* pol.
Lot number: 18K
Expiry date: 2012-June-01
Number of tests: 24 tests – Product No. 101.563-24u
 3 tests – Product No. 101.563-03u
Number of wells per test: 48

Well specifications:

Well No.	Production No.	Well No.	Production No.	Well No.	Production No.
1	2010-736-01	17	2010-736-17	33	2010-736-33
2	2007-299-02	18	2010-736-18	34	2010-736-34
3	2007-299-03	19	2007-299-19	35	2009-580-35
4	2007-299-04	20	2007-299-20	36	2009-580-36
5	2010-736-05	21	2010-736-21	37	2010-736-37
6	2007-299-06	22	2007-299-22	38	2007-299-38
7	2007-299-07	23	2007-299-23	39	2007-299-39
8	2010-736-08	24	2007-299-24	40	2010-736-40
9	2007-299-09	25	2007-299-25	41	2007-299-41
10	2010-736-10	26	2010-736-26	42	2010-736-42
11	2007-299-11	27	2009-580-27	43	2010-736-43
12	2007-299-12	28	2010-736-28	44	2010-736-44
13	2007-299-13	29	2007-299-29	45	2010-736-45
14	2007-299-14	30	2007-299-30	46	2010-736-46
15	2007-299-15	31	2010-736-31	47	2010-736-47
16	2007-299-16	32	2007-299-32	48	2010-736-48

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

No DNAs carrying the alleles to be amplified by primer solutions 5, 10, 13, 18, 19, 21, 22, 24, 26, 28, 29, 33, 35 and 43 to 48 were available. The specificities of the primers in primer solutions 5, 10, 18, 21, 26, 29, 33, 35 and 44 to 46 were tested by separately adding one or two additional 5'-primers, respectively one or two additional 3'-primers. In primer solutions 13, 19, 22, 28, 43, 47 and 48 it was only possible to test the 5'-primer, the 3'-primer was not possible to test. In primer solutions 6, 18, 20, 21, 26, 31, 33, 37, 45 and 46 one or two of the 5'-primers were not possible to test. In primer solutions 1, 7, 8, 10, 17, 35, 44 and 46 one or two of the 3'-primers were not possible to test. In primer solution 24 neither the 5'-primer nor the 3'-primer was possible to test. Additional primers in primer solutions 6 to 8, 20, 27, 31 and 42 were tested by separately adding one 5'-primer or one 3'-primer.

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

Date of approval: 2010-June-17

Approved by:

Quality Control, Supervisor

Declaration of Conformity

Product name: Olerup SSP® HLA-B*44

Product number: 101.563-24u/03u

Lot number: 18K

Intended use: HLA-B*44 high 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-June-17

Olle Olerup
Managing Director

Lot No.: **18K**

Lot-specific Information

www.olerup-ssp.com**ADDRESSES:****Manufacturer:****Olerup SSP AB**, Hasselstigen 1, SE-133 33 Saltsjöbaden, Sweden.**Tel:** +46-8-717 88 27**Fax:** +46-8-717 88 18**E-mail:** info-ssp@olerup.com**Web page:** <http://www.olerup-ssp.com>**Distributed by:****Olerup GmbH**, Löwengasse 47 / 6, AT-1030 Vienna, Austria.**Tel:** +43-1-710 15 00**Fax:** +43-1-710 15 00 10**E-mail:** support-at@olerup.com**Web page:** <http://www.olerup.com>**Olerup Inc.**, 901 S. Bolmar St., Suite R, West Chester, PA 19382**Tel:** 1-877-OLERUP1**Fax:** 610-344-7989**E-mail:** info.us@olerup.com**Web page:** <http://www.olerup.com>For information on *Olerup* SSP distributors worldwide, contact **Olerup GmbH**.