

Olerup SSP[®] HLA-B*48

Product number:	101.546-06u – without Taq polymerase
Lot number:	95M
Expiry date:	2014-June-01
Number of tests:	6
Number of wells per test:	16
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. 95M.

CHANGES COMPARED TO THE PREVIOUS OLERUP SSP[®] HLA-B*48 LOT.

The HLA-B*48 specificity and interpretation tables have been updated for the HLA-B alleles described since the previous Olerup SSP[®] HLA-B*48 lot was made (Lot No. 44K).

The amplification patterns for some rare HLA-B*48 alleles only differ by the length of the specific PCR products.

The primers of the wells detailed below have been added, exchanged or modified.

Well	5'-primer	3'-primer	rationale
7	Added	Added	Primer pair added for the B*48:25 allele.
9	-	Added	Primer added for the B*48:24 allele.
10	Exchanged	-	Decrease tendencies of primer oligomer formation.

PRODUCT DESCRIPTION

HLA-B*48 SSP typing

CONTENT

The primer set contains 5'- and 3'-primers for identifying the B*48:01 to B*48:25 alleles.

PLATE LAYOUT

Each HLA-B*48 test consists of 16 PCR reactions in a 16 well cut PCR plate.

1	2	3	4	5	6	7	8
9	10	11	12	13	14	15	16

The 16 well PCR plate is marked with 'HLA-B*48' in silver/gray ink.

Well No. 1 is marked with the Lot No. '95M'.

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 heat-sealed with a PCR-compatible foil.

Please note: When removing each 16 well PCR plate, make sure that the remaining plates stay sealed. Use a scalpel or a similar instrument to carefully cut the foil between the plates.

INTERPRETATION

The interpretation of HLA-B*48 SSP subtypings will be influenced by the B*07, the B*08, most B*13, most B*14, many B*15, most B*18, thirteen B*27, most B*35, the B*37, the B*38, most B*39, the B*40, the B*41, the B*42, most B*44, most B*45, seven B*46, the B*49, the B*50, most B*51, most B*52, the B*53, most B*54, most B*55, most B*56, most B*57, most B*58, the B*59, the B*67, the B*73, the B*78, the B*81, the B*82 and the B*83:01 alleles when present on the other haplotype. In addition, the A*26:01:19 allele will be weakly amplified by primer mix 13, the C*02:23 allele will be amplified by primer mixes 5 and 16, the C*03:05, C*03:25, C*03:27 and C*08:08 alleles will be amplified by primer mix 10, the C*03:102 allele will be amplified by primer mix 4, the C*04:77 allele will be amplified by primer mixes 5, 8 and 16, the C*06:21 and C*15:24 alleles will be amplified by primer mix 13, the C*07:38 allele will be amplified by primer mix 5, the C*07:123 and 07:173 alleles will be amplified by primer mix 12 and the C*15:09, C*15:19-15:20 and C*15:27 alleles will be amplified by primer mix 7.

UNIQUELY IDENTIFIED ALLELES

All the HLA-B*48 alleles, i.e. **B*48:01 to B*48:25**, recognized by the HLA Nomenclature Committee in July 2011² will be amplified by the primers in the HLA-B*48 SSP kit¹.

¹The B*48:09 and B*48.11 alleles can be distinguished by the different sizes of the specific PCR products generated by primer mix 14.

The B*48 primer set cannot separate the B*48:06 and B*81:02 alleles. These two alleles can be distinguished by the HLA-B low resolution and/or HLA-B*81 kits.

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The B*48 primer set cannot separate the B*48:10 and the B*08:17, 08:54, 38:03, 39:02:01-39:02:02, 39:08, 39:13:01-39:13:02 and 42:11 alleles. These alleles can be distinguished by the HLA-B low resolution and/or HLA-B*08, HLA-B*39 and HLA-B*42 kits.

The B*48 primer set cannot separate the B*48:01:01 to 48:01:03, the 48:02:01 and 48:02:02 or the B*48:03:01 and B*48:03:02 alleles.

²HLA-B alleles listed on the IMGT/HLA web page 2011-July-14, release 3.5.0, www.ebi.ac.uk/imgt/hla.

RESOLUTION IN HOMO- AND HETEROZYGOTES

A total of 31 alleles generate 24 amplification patterns that can be combined in 300 homozygous and heterozygous combinations. 126 of these genotypes do not give rise to unique amplification patterns. The different lengths of the specific PCR products were not considered in these calculations.

++++--++ --- ----- *48:07, *48:25 = *48:16, *48:25
++++--+- --- ----- *48:01:01, *48:25 = *48:02:01, *48:06 = *48:06, *48:25
++++--++ --- ----- *48:02:01, *48:07 = *48:02:01, *48:16
+++-+-++ --- ----- *48:07, *48:23 = *48:16, *48:23 = *48:17, *48:22
+++-+-++ --- ----- *48:01:01, *48:17 = *48:03:01, *48:07 = *48:03:01, *48:16 = *48:07, *48:17 =
*48:16, *48:17
+++-+-++ --- ----- *48:01:01, *48:23 = *48:03:01, *48:22 = *48:22, *48:23
++++--+- --- ----- *48:06, *48:20 = *48:06, *48:21
++++--++ +-+----- *48:05, *48:07 = *48:05, *48:16
++++--+- --- ----- *48:07, *48:20 = *48:07, *48:21 = *48:16, *48:20 = *48:16, *48:21
+++-+-++ +-+----- *48:20, *48:24 = *48:21, *48:24
+++-+-++ +-+----- *48:01:01, *48:05 = *48:05, *48:15 = *48:05, *48:19 = *48:05, *48:20
+++-+-++ +-+----- *48:19, *48:20 = *48:19, *48:21
+++-+-++ --- ----- *48:04, *48:20 = *48:04, *48:21
+++-+-++ --- ----- *48:20, *48:22 = *48:21, *48:22
+++-+-++ --- ----- *48:09, *48:20 = *48:09, *48:21
+++-+-++ --- ----- *48:18, *48:20 = *48:18, *48:21
+++-+-++ --- ----- *48:15, *48:20 = *48:15, *48:21
+++-+-++ --- ----- *48:01:01, *48:20 = *48:01:01, *48:21 = *48:20, *48:20 = *48:20, *48:21
+++-+-++ +-+----- *48:07, *48:24 = *48:16, *48:24
+++-+-++ +-+----- *48:07, *48:08 = *48:08, *48:16
+++-+-++ +-+----- *48:07, *48:19 = *48:16, *48:19
+++-+-++ --- ----- *48:07, *48:13 = *48:13, *48:16
+++-+-++ --- ----- *48:04, *48:07 = *48:04, *48:16
+++-+-++ --- ----- *48:07, *48:22 = *48:16, *48:22
+++-+-++ --- ----- *48:07, *48:14 = *48:14, *48:16
+++-+-++ --- ----- *48:07, *48:12 = *48:12, *48:16
+++-+-++ --- ----- *48:07, *48:10 = *48:10, *48:16
+++-+-++ --- ----- *48:07, *48:09 = *48:09, *48:16
+++-+-++ --- ----- *48:07, *48:18 = *48:16, *48:18
+++-+-++ --- ----- *48:07, *48:15 = *48:15, *48:16
+++-+-++ --- ----- *48:01:01, *48:07 = *48:01:01, *48:16 = *48:07, *48:07 = *48:07, *48:16
+++-+-++ +-+----- *48:01:01, *48:24 = *48:04, *48:19 = *48:19, *48:24
+++-+-++ +-+----- *48:01:01, *48:08 = *48:08, *48:15 = *48:08, *48:19 = *48:15, *48:19
+++-+-++ +-+----- *48:01:01, *48:19 = *48:19, *48:19
+++-+-++ --- ----- *48:01:01, *48:22 = *48:22, *48:22
+++-+-++ --- ----- *48:01:01, *48:14 = *48:09, *48:12 = *48:09, *48:14 = *48:14, *48:18
+++-+-++ --- ----- *48:01:01, *48:12 = *48:10, *48:18 = *48:12, *48:18
+++-+-++ --- ----- *48:01:01, *48:09 = *48:09, *48:09
+++-+-++ --- ----- *48:01:01, *48:18 = *48:18, *48:18
+++-+-++ --- ----- *48:01:01, *48:15 = *48:15, *48:15
+++-+-++ --- ----- *48:03:01, *48:17 = *48:17, *48:17
+-+----- --- ----- *48:03:01, *48:23 = *48:23, *48:23
+-+----- +-+----- *48:04, *48:05 = *48:05, *48:24

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+--+----- +++-+---- *48:10, *48:24 = *48:13, *48:24
+-+----- +++-----+ *48:04, *48:08 = *48:08, *48:24
+-+----- +++----- *48:04, *48:24 = *48:24, *48:24
+-+----- -++-+---- *48:04, *48:10 = *48:04, *48:13
+--+----- -++-+---- *48:02:01, *48:25 = *48:25, *48:25
+-----+ -++-+---- *48:05, *48:05 = *48:05, *48:08 = *48:05, *48:10
+-----+ -++-+---- *48:10, *48:13 = *48:13, *48:13
+-----+ -++-+---- *48:10, *48:14 = *48:12, *48:14 = *48:14, *48:14
+-----+ -++-+---- *48:10, *48:12 = *48:12, *48:12

*48:01:01 = *48:01:01-48:01:03

*48:02:01 = *48:02:01-48:02:02

*48:03:01 = *48:03:01-48:03:02

*48:09 = *48:09 and 48:11

SPECIFICITY TABLE

HLA-B*48 SSP subtyping

Specificities and sizes of the PCR products of the 16 primer mixes used for HLA-B*48 SSP subtyping

Primer Mix	Size of spec. PCR product ¹	Size of control band ²	Amplified HLA-B*48 alleles ³	Other amplified HLA-B alleles ⁴
1	385 bp	800 bp	*48:01:01-48:05, 48:07-48:15, 48:17-48:25	*08:17, 08:38, 08:54, 15:68, 38:03-38:04, 38:25, 39:02:01-39:02:02, 39:08, 39:13:01-39:13:02, 39:22-39:23, 39:49, 40:01:01-40:01:23, 40:07, 40:09 [?] -40:11:02 [?] , 40:14:01 [?] -40:15 [?] , 40:16, 40:18 [?] -40:19 [?] , 40:21 [?] -40:22N [?] , 40:23, 40:24 [?] , 40:26 [?] -40:38 [?] , 40:42 [?] -40:50 [?] , 40:51, 40:52 [?] -40:58 [?] , 40:59-40:60, 40:61 [?] -40:65 [?] , 40:66, 40:67 [?] , 40:71 [?] , 40:72:01-40:73, 40:74 [?] -40:76 [?] , 40:77, 40:78 [?] , 40:79, 40:80 [?] -40:88 [?] , 40:90 [?] -40:93 [?] , 40:95 [?] -40:96 [?] , 40:98 [?] -40:105 [?] , 40:107 [?] -40:121 [?] , 40:123 [?] , 40:124:01, 40:124:02 [?] -40:137 [?] , 40:138-40:140, 40:141 [?] , 40:145 [?] , 40:146-40:147, 40:148 [?] -40:149 [?] , 40:150, 40:151 [?] , 40:152-40:153, 40:154 [?] , 40:155N, 40:156 [?] -40:165 [?] , 40:167 [?] -40:173 [?] , 41:01-41:19, 42:11, 44:18, 45:01-45:05, 45:07-45:13, 49:01:01-49:20, 50:01:01-50:02, 50:04-50:14
2	145 bp	800 bp	*48:01:01-48:01:03, 48:03:01-48:03:02, 48:06-48:07, 48:09, 48:11, 48:15-48:23	*27:36, 40:01:01-40:01:23, 40:07, 40:10:01-40:10:02, 40:12, 40:21-40:23, 40:25, 40:30-40:31, 40:33-40:34, 40:36, 40:38, 40:42-40:43, 40:45-40:49, 40:52, 40:54-40:55, 40:59-40:61, 40:63, 40:66-40:67, 40:69, 40:73-40:74, 40:76, 40:79-40:81, 40:84, 40:87:01-40:88, 40:100-40:102, 40:106, 40:112-40:114, 40:116-40:118N, 40:123-40:126, 40:128, 40:132, 40:134-40:135, 40:137-40:141, 40:146-40:147, 40:149-40:156, 40:160, 40:166, 40:168, 40:170-40:172, 44:31, 46:06, 81:01-81:05

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3	175 bp	800 bp	*48:01:01-48:01:03, 48:04, 48:06-48:07, 48:09, 48:11, 48:15-48:16, 48:18-48:20, 48:22, 48:24	*27:24, 40:31, 40:45, 40:80, 81:01-81:05
4	150 bp	800 bp	*48:02:01-48:02:02, 48:25	*08:49, 13:01:01-13:01:06, 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, 13:39, 13:43, 13:50, 14:10, 15:02:01-15:02:05, 15:13:01-15:13:02, 15:20-15:21, 15:25:01-15:25:03, 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, 15:194, 15:204, 15:213-15:214, 15:223, 18:22, 27:19, 27:30, 35:01:01:01-35:04:03, 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, 35:100-35:101:02, 35:103-35:113, 35:115-35:116, 35:120-35:126, 35:128-35:134N, 35:136-35:150, 35:152-35:166, 35:168-35:173N, 35:175-35:178, 37:01:01-37:01:07, 37:03N-37:06, 37:08, 37:10-37:11, 37:13-37:31, 38:20, 39:42, 40:28, 44:02:01:01-44:14, 44:16-44:17, 44:19N, 44:21-44:30, 44:32-44:40, 44:42-44:46, 44:48-44:52N, 44:55-44:64:02, 44:66-44:98, 44:101-44:105, 44:107-44:134, 51:04, 51:42, 51:46, 51:56:01-51:56:02, 53:01:01-53:13, 53:15-53:26, 55:14, 56:09, 56:11-56:12, 57:01:01-57:01:04, 57:01:06-57:10, 57:12, 57:14-57:20, 57:22-57:30, 57:32-57:46, 57:48-57:52, 58:01:01-58:01:02, 58:01:04-58:01:09, 58:04-58:05, 58:09-58:15, 58:17N, 58:19, 58:21-58:24, 58:28-58:34, 83:01, C*03:102
5	285 bp	1070 bp	*48:03:01-	*07:07, 07:12, 07:14, 07:18:01-

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			48:03:02, 48:17, 48:23	07:18:02, 07:77, 07:137, 15:138, 15:230, 18:35, 40:01:01-40:01:17, 40:01:19-40:01:23, 40:07, 40:10:01- 40:10:02, 40:12, 40:14:01-40:14:03, 40:21-40:23, 40:25, 40:33, 40:36, 40:38, 40:42-40:43, 40:46-40:49, 40:52, 40:54-40:55, 40:59-40:63, 40:65-40:67, 40:69, 40:72:01-40:74, 40:76-40:77, 40:79, 40:81, 40:84, 40:87:01-40:88, 40:100-40:102, 40:106, 40:108, 40:112-40:114, 40:116-40:118N, 40:121, 40:123- 40:126, 40:128, 40:132, 40:134- 40:141, 40:146-40:147, 40:149- 40:156, 40:158, 40:160, 40:166, 40:168, 40:170-40:172, 41:08, 44:31, 46:06, C*02:23, C*04:77, C*07:38
6^{5,8}	90 bp, 170 bp, 285 bp	1070 bp	*48:05, 48:20- 48:21	*27:36
7⁹	150 bp, 385 bp	1070 bp	*48:06, 48:25	*07:02:01-07:12, 07:14-07:53, 07:55- 07:64, 07:66-07:122, 07:124-07:131, 07:133-07:139, 08:01:01-08:05, 08:07-08:09, 08:11-08:16, 08:18- 08:37, 08:39-08:53, 08:55-08:77, 14:01:01-14:03, 14:05-14:27, 15:03:01-15:03:03, 15:16:01- 15:16:03, 15:18:01-15:18:04, 15:23, 15:29, 15:39:01-15:40, 15:47 ^w , 15:49 ^w , 15:61-15:62, 15:64, 15:65 ^w , 15:67, 15:69, 15:72, 15:74, 15:80, 15:93, 15:95, 15:98, 15:103, 15:108, 15:115, 15:119, 15:127, 15:131- 15:132, 15:134, 15:138, 15:153, 15:158, 15:161, 15:173, 15:176, 15:194-15:195, 15:197-15:198, 15:210, 15:220, 15:221 ^w , 15:223, 15:226N, 18:15, 18:21 ^w , 18:30 ^w , 18:57, 35:11:01-35:11:02, 35:21, 35:58, 35:99 ^w , 38:01:01-38:02:03, 38:05-38:24, 38:26-38:35, 39:01:01:01-39:01:01:02L, 39:01:03- 39:01:12, 39:03-39:07, 39:09- 39:10:01, 39:11-39:12, 39:14-39:20, 39:24:01-39:48, 39:50-39:67, 42:01:01-42:02, 42:04-42:10, 42:12- 42:16, 46:03 ^w , 46:08, 49:04, 51:37, 51:45, 53:06, 53:08:01-53:08:02, 55:14, 56:32, 57:13 ^w , 57:22, 58:06,

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				58:19, 67:01:01-67:01:02, 67:03, 73:01 ^W -73:02 ^W , 81:02, C*15:09, C*15:19-15:20, C*15:27
8^{5,6,10}	85 bp, 225 bp	1070 bp	*48:07, 48:16-48:17	*07:78, 07:115, 40:36, 40:48, 40:77, C*04:77
9	215 bp	1070 bp	*48:05, 48:08, 48:19, 48:24	*07:02:01-07:02:25, 07:02:27-07:03, 07:05:01-07:06, 07:08-07:11, 07:13, 07:15-07:17, 07:20-07:24, 07:27-07:33, 07:35-07:42, 07:44, 07:46-07:47, 07:49N-07:51, 07:53-07:65, 07:67N-07:76, 07:79, 07:81-07:83, 07:85-07:130, 07:132-07:134, 07:136, 07:138-07:139, 08:20, 08:40, 08:70, 15:07:01-15:07:02, 15:45, 15:68, 15:126, 15:207, 35:66, 37:07, 40:15-40:16, 40:32, 40:98, 46:12
10⁶	290 bp	800 bp	*48:04, 48:13, 48:24	*07:33, 07:53, 07:60, 07:100, 07:139, 14:05, 14:13, 15:07:01-15:07:02, 15:45, 15:55, 15:68, 15:126, 15:207, 18:14, 18:22, 27:07, 27:11, 27:24, 27:32-27:34, 27:43, 35:05:01-35:05:02, 35:16-35:17, 35:22, 35:30-35:31, 35:51, 35:58, 35:72, 35:89, 35:97, 35:113-35:114, 35:125, 35:164, 37:09, 38:19, 39:03, 39:14, 39:24:01-39:24:02, 39:29, 39:37, 40:02:01-40:03, 40:05, 40:08-40:09, 40:13, 40:18-40:19, 40:24, 40:27:01-40:27:02, 40:29, 40:35, 40:37, 40:39-40:40, 40:50, 40:56-40:58, 40:71, 40:78, 40:82, 40:85, 40:89-40:91, 40:94, 40:97, 40:104-40:105, 40:107, 40:111, 40:115, 40:119, 40:122, 40:133Q, 40:142N-40:145, 40:157, 40:164, 40:169, 40:173, 41:15, 42:08, 42:14, 44:54, 44:106, 44:110, 46:12, 51:64, 51:81, 53:14, 55:04, 55:49, 55:51, 58:18, 58:27, C*03:05, C*03:25, C*03:27, C*08:08
11	170 bp	800 bp	*48:01:01-48:05, 48:07-48:25	*07:27, 07:50, 08:04, 08:17, 08:54, 15:03:01-15:03:03, 15:47, 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, 15:210, 15:220, 18:01:01-18:03, 18:05-18:06, 18:08-

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				18:15, 18:17N-18:28, 18:30-18:32, 18:34-18:66, 37:01:01-37:20, 37:23-37:25, 37:27-37:31, 38:03, 39:02:01-39:02:02, 39:08, 39:13:01-39:13:02, 39:23, 39:39, 39:49, 40:12, 40:149, 42:11, 44:130, 52:16
12⁵	120 bp	1070 bp	*48:22-48:23	*13:23, 15:71, 15:116, 15:124, 15:175, 15:204, 15:225, 18:01:01-18:01:12, 18:01:14-18:03, 18:05-18:15, 18:17N-18:24, 18:26-18:42, 18:44-18:66, 27:75, 35:50, 35:84, 35:162, 37:01:01-37:01:06, 37:01:08-37:31, 40:52, 40:59, 40:83, 42:02, 42:09, 46:06, 46:14, 49:03, 51:116, 57:39, 58:05, 73:01-73:02, C*07:123, C*07:173
13⁷	135 bp	1070 bp	*48:05, 48:10, 48:12-48:13, 48:14 ^w	*07:05:01-07:06, 07:32, 07:34, 07:40, 07:53, 07:69, 07:78, 07:80, 07:97, 07:105, 07:112, 07:123, 07:137-07:138, 08:01:01-08:01:11, 08:01:13-08:05, 08:08N-08:12:01, 08:12:03-08:13, 08:15-08:27, 08:29-08:36, 08:38-08:48, 08:50-08:63, 08:65-08:73, 08:75-08:77, 13:03, 13:22:01-13:22:02, 13:40 ^w , 13:45, 13:48, 14:13, 15:09, 15:30, 15:42, 15:48, 15:58, 15:73, 15:83, 15:86, 15:150, 15:188, 15:224, 15:229, 18:26, 18:61, 27:07, 27:11, 27:20, 27:27, 27:33, 27:43, 35:02:01-35:02:04, 35:04:01-35:04:03, 35:06, 35:09:01-35:09:02, 35:12:01-35:12:03, 35:18, 35:22, 35:31, 35:44, 35:59-35:60, 35:81, 35:83, 35:87-35:88, 35:95, 35:129N, 35:146, 35:149, 35:154, 35:157, 35:162, 35:172, 37:12, 38:01:01, 38:01:03-38:21, 38:23-38:28, 38:30-38:35, 39:01:01:01-39:01:01:02L, 39:01:03-39:01:11, 39:01:12 ^w , 39:02:01-39:06:02, 39:08-39:14, 39:16, 39:18-39:20, 39:22, 39:24:01-39:24:02, 39:26-39:28, 39:30-39:42, 39:45-39:48, 39:50-39:54, 39:56 ^w , 39:57-39:67, 40:02:01-40:02:09, 40:02:11-40:02:12, 40:04-40:06:04, 40:08, 40:11:01-40:11:02, 40:13-40:16, 40:19, 40:26-40:29, 40:35, 40:37, 40:39-40:40, 40:50, 40:53,

				40:56-40:58, 40:64, 40:68, 40:70-40:71, 40:72:01 ^w -40:72:02 ^w , 40:75, 40:77 ^w , 40:78, 40:82-40:83, 40:86, 40:90, 40:93-40:97, 40:99, 40:103-40:105, 40:107, 40:109-40:111, 40:115, 40:119, 40:121-40:122, 40:127, 40:129, 40:133Q, 40:136, 40:142N-40:145, 40:148, 40:157-40:158, 40:161-40:162, 40:164-40:165, 40:167, 40:169, 40:173, 41:01-41:03:02, 41:05-41:09, 41:11-41:17, 41:19, 42:01:01-42:02, 42:04-42:08, 42:10-42:15, 44:10, 44:14, 44:62, 44:77, 44:82, 45:12, 46:11, 46:18, 51:01:01-51:01:18, 51:01:19 ^w , 51:01:20-51:02:02, 51:02:04-51:16, 51:19-51:24:04, 51:26, 51:28-51:36, 51:38-51:41N, 51:43-51:44N, 51:46, 51:48-51:74, 51:75 ^w , 51:76-51:83, 51:86-51:89, 51:91, 51:95-51:121, 52:01:01:01-52:11, 52:13-52:25, 53:19, 54:01:01-54:05N, 54:07-54:08N, 54:10, 54:12-54:13, 54:17-54:21, 54:23-54:24, 55:01:01-55:05, 55:07-55:13, 55:15-55:22, 55:24-55:26, 55:28-55:40, 55:42-55:45, 55:47-55:49, 55:51-55:53, 56:01:01-56:02, 56:04-56:08, 56:10, 56:12-56:17, 56:19N-56:30, 57:02:01-57:03:02, 57:07, 57:09, 57:12, 57:17, 57:28N, 57:39, 57:42 ^w , 57:46, 58:08:01-58:08:02, 58:20, 58:27-58:28, 59:01:01:01-59:05, 67:01:01-67:03, 78:01:01-78:07, 82:01-82:03, A*26:01:19^w, C*06:21, C*15:24
14^{5,11}	100 bp, 250 bp	1070 bp	*48:09, 48:11, 48:14	*07:09, 07:11, 07:17, 08:28, 08:35, 08:37, 15:07:01-15:07:02, 15:55, 15:68, 15:126, 15:207, 18:14, 35:05:01-35:05:02, 35:51, 35:58, 35:66, 35:72, 35:89, 35:97, 35:114, 40:03, 40:105, 42:09, 46:12, 53:14, 58:18
15¹²	140 bp, 435 bp	800 bp	*48:12, 48:14, 48:18	*07:36, 07:38, 07:68:01-07:68:03, 07:81, 07:100, 08:03, 08:52, 08:71, 14:05, 14:13, 15:07:01-15:07:02, 15:45, 15:55, 15:68, 15:126, 15:207, 18:14, 27:32, 35:05:01-35:05:02, 35:22, 35:51, 35:58, 35:66, 35:72,

				35:89, 35:97, 38:01:01-38:01:05, 38:05-38:07, 38:09-38:14, 38:16, 38:19-38:22, 38:24-38:28, 38:30-38:34N, 39:03, 39:14, 39:24:01-39:24:02, 39:29, 39:37, 40:35, 40:71, 42:10, 44:18, 44:54, 44:106, 46:12, 49:01:01-49:01:03, 49:03-49:20, 51:64, 53:14, 58:18
16⁵	120 bp	1070 bp	*48:05, 48:08, 48:15	*07:02:01-07:18:02, 07:20-07:24, 07:26-07:32, 07:34-07:39, 07:41-07:47, 07:49N-07:50, 07:52, 07:54-07:59, 07:61-07:99, 07:101-07:121, 07:123-07:138, 15:138, 15:230, 37:07, 40:15-40:16, 40:23, 40:32, 40:98, 40:158, C*02:23, C*04:77

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*48 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*48 SSP subtyping.

In addition, wells number 2, 3, 4, 10, 11 and 15 contain the primer pair giving rise to the shorter, 800 bp, internal positive control band.

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

³The B*48:09 and B*48:11 alleles can be distinguished by the different sizes of the specific PCR products generated by primer mix 14.

The B*48 primer set cannot separate the B*48:06 and B*81:02 alleles. These two alleles can be distinguished by the HLA-B low resolution and/or HLA-B*81 kits.

The B*48 primer set cannot separate the B*48:10 and the B*08:17, 08:54, 38:03, 39:02:01-39:02:02, 39:08, 39:13:01-39:13:02 and 42:11 alleles. These alleles can be distinguished by the HLA-B low resolution and/or HLA-B*08, HLA-B*39 and HLA-B*42 kits.

⁴Due to the sharing of sequence motifs between HLA-B alleles non-HLA-B*48 alleles will be amplified by all HLA-B*48 primer mixes. In addition, the A*26:01:19 allele will be weakly amplified by primer mix 13, the C*02:23 allele will be amplified by primer mixes 5 and 16, the C*03:05, C*03:25, C*03:27 and C*08:08 alleles will be amplified by primer mix 10, the C*03:102 allele will be amplified by primer mix 4, the C*04:77 allele will be amplified by primer mixes 5, 8 and 16, the C*06:21 and C*15:24 alleles will be amplified by primer mix 13, the C*07:38 allele will be amplified by primer mix 5, the C*07:123

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and 07:173 alleles will be amplified by primer mix 12 and the C*15:09, C*15:19-15:20 and C*15:27 alleles will be amplified by primer mix 7.

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

⁶Primer mixes 8 and 10 have a tendency of giving rise to nonspecific amplifications.

⁷Primer mix 13 might faintly amplify the B*13:xx alleles.

⁸Primer mix 6: Specific PCR fragment of 90 bp in the B*48:20 allele. Specific PCR fragment of 170 bp in the B*48:05 allele. Specific PCR fragment of 285 bp in the B*48:21 and in the B*27:36 alleles.

⁹Primer mix 7: Specific PCR fragment of 150 bp in the B*48:25 and in the B*15:03:01-15:03:03, 15:16:01-15:16:03, 15:18:01-15:18:04, 15:23, 15:29, 15:39:01-15:40, 15:47^w, 15:49^w, 15:61-15:62, 15:64, 15:65^w, 15:67, 15:69, 15:72, 15:74, 15:80, 15:93, 15:95, 15:98, 15:103, 15:108, 15:115, 15:119, 15:127, 15:131-15:132, 15:134, 15:138, 15:153, 15:158, 15:161, 15:173, 15:176, 15:194-15:195, 15:197-15:198, 15:210, 15:220, 15:221^w, 15:223, 15:226N, 18:15, 18:21^w, 18:30^w, 18:57, 35:11:01-35:11:02, 35:21, 35:58, 35:99^w, 46:03^w, 46:08, 49:04, 51:37, 51:45, 53:06, 53:08:01-53:08:02, 55:14, 56:32, 57:13^w, 57:22, 58:06 and 58:19 and in the C*15:09, C*15:19-15:20 and C*15:27 alleles. Specific PCR fragment of 385 bp in the B*48:06 and in the B*07:02:01-07:08, 07:10, 07:12, 07:14-07:16, 07:18:01-07:53, 07:55-07:64, 07:66-07:122, 07:124-07:131, 07:133-07:139, 08:01:01-08:05, 08:07-08:09, 08:11-08:16, 08:18-08:37, 08:39-08:53, 08:55-08:77, 14:01:01-14:03, 14:05-14:27, 38:01:01-38:02:03, 38:05-38:24, 38:26-38:35, 39:01:01-39:01:01:02L, 39:01:03-39:01:12, 39:03-39:07, 39:09-39:10:01, 39:11-39:12, 39:14-39:20, 39:24:01-39:48, 39:50-39:67, 42:01:01-42:02, 42:04-42:10, 42:12-42:16, 67:01:01-67:01:02, 67:03, 73:01^w-73:02^w and 81:02 alleles. Specific PCR fragment of 150 and 385 bp in the B*07:09, 07:11 and 07:17 alleles.

¹⁰Primer mix 8: Specific PCR fragment of 85 bp in the B*48:16 allele. Specific PCR fragment of 225 bp in the B*48:07 and 48:17 and in the B*07:78, 07:115, 40:36, 40:48 and 40:77 and in the C*04:77 alleles.

¹¹Primer mix 14: Specific PCR fragment of 100 bp in the B*48:09 and 48:14 and in the B*07:09, 07:11, 07:17, 08:28, 08:35, 08:37, 15:07:01-15:07:02, 15:55, 15:68, 15:126, 15:207, 18:14, 35:05:01-35:05:02, 35:51, 35:58, 35:66, 35:72, 35:89, 35:97, 35:114, 40:03, 40:105, 42:09, 46:12, 53:14 and 58:18 alleles. Specific Specific PCR fragment of 250 bp in the B*48:11 allele.

¹²Primer mix 15: Specific PCR fragment of 140 bp in the B*48:12 and 48:14 and in the B*07:68:01-07:68:03, 07:100, 08:71, 14:05, 14:13, 15:07:01-15:07:02, 15:45, 15:55, 15:68, 15:126, 15:207, 18:14, 27:32, 35:05:01-35:05:02, 35:22, 35:51, 35:58, 35:66, 35:72, 35:89, 35:97, 38:19, 39:03, 39:14, 39:24:01-39:24:02, 39:29, 39:37, 40:35, 40:71, 42:10, 44:54, 44:106, 46:12, 51:64, 53:14 and 58:18 alleles. Specific PCR fragment of 435 bp in the B*48:18 and in the B*07:36, 07:38, 07:81, 08:03, 08:52, 38:01:01-38:01:05, 38:05-38:07, 38:09-38:14, 38:16, 38:20-38:22, 38:24-38:28, 38:30-38:34N, 44:18, 49:01:01-49:01:03 and 49:03-49:20 alleles. Specific PCR fragment of 140 and 435 bp in the B*38:19 allele.

‘w’, might be weakly amplified.

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

INTERPRETATION TABLE								
HLA-B*48 SSP subtyping								
Amplification patterns of the B*48:01 to 48:25 alleles								
	Well⁷							
	1	2	3	4	5	6	7	8
Length of spec.	385	145	175	150	285	90	150	85
PCR product(s)						170	385	225
						285		
Length of int.	800	800	800	800	1070	1070	1070	1070
pos. control¹								
5'-primer(s)²	44	499	363	355	363	144	44	260
	5' -ggC ^{3'}	5' -TCT ^{3'}	5' -AgC ^{3'}	5' -TCA ^{3'}	5' -Agg ^{3'}	5' -TCC ^{3'}	5' -ggC ^{3'}	5' -ggT ^{3'}
					363	225	419	419
					5' -Agg ^{3'}	5' -TgC ^{3'}	5' -gTC ^{3'}	5' -gTT ^{3'}
						363		419
						5' -AAT ^{3'}		5' -gTT ^{3'}
3'-primer(s)³	259	605	499	463	605	272	259	302
	5' -CTC ^{3'}	5' -gCT ^{3'}	5' -ggA ^{3'}	5' -gCT ^{3'}	5' -gCT ^{3'}	5' -Tgg ^{3'}	5' -gTT ^{3'}	5' -ggC ^{3'}
						605	259	605
						5' -gCT ^{3'}	5' -gTT ^{3'}	5' -gCT ^{3'}
							527	
							5' -CCT ^{3'}	
Well No.	1	2	3	4	5	6	7	8
HLA-B allele								
*48:01:01-48:01:03	1	2	3					
*48:02:01-48:02:02	1			4				
*48:03:01-48:03:02	1	2			5			
*48:04	1		3					
*48:05	1					6		
*48:06, 81:02⁴		2	3				7	
*48:07	1	2	3					8
*48:08	1							
*48:09, 48:11⁵	1	2	3					
Well No.	1	2	3	4	5	6	7	8

INTERPRETATION TABLE

HLA-B*48 SSP subtyping

Amplification patterns of the B*48:01 to 48:25 alleles

Well ⁷								
9	10	11	12	13	14	15	16	
215	290	170	120	135	100	140	120	Length of spec. PCR product(s)
					250	435		
1070	800	800	1070	1070	1070	800	1070	Length of int. pos. control ¹
363	363	142	97	397	363	44	527	5'-primer(s) ²
5' -AgC 3'	5' -AgC 3'	5' -TCT 3'	5' -TCC 3'	5' -gCT 3'	5' -AgC 3'	5' -ggC 3'	5' -TgA 3'	
	363	142	419	412	693	363		
	5' -AgC 3'	5' -TCT 3'	5' -gTC 3'	5' -ATA 3'	5' -ggT 3'	5' -AgC 3'		
537	610	272	165	499	419	309	605	3'-primer(s) ³
5' -Agg 3'	5' -CTg 3'	5' -Tgg 3'	5' -Tgg 3'	5' -ggT 3'	5' -Cgg 3'	5' -ATC 3'	5' -gCT 3'	
539			512		572	463		
5' -TCC 3'			5' -CCA 3'		5' -gCA 3'	5' -gCT 3'		
					755			
					5' -CAA 3'			
9	10	11	12	13	14	15	16	Well No.
								HLA-B allele
		11						*48:01:01-48:01:03
		11						*48:02:01-48:02:02
		11						*48:03:01-48:03:02
	10	11						*48:04
9		11		13			16	*48:05
								*48:06, 81:02 ⁴
		11						*48:07
9		11					16	*48:08
		11			14			*48:09, 48:11 ⁵
9	10	11	12	13	14	15	16	Well No.

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Length of spec.	385	145	175	150	285	90	150	85
PCR product(s)						170	385	225
						285		
Well No.	1	2	3	4	5	6	7	8
*48:10, 08:17, 08:54, 38:03, 39:02:01-39:02:02, 39:08, 39:13:01-39:13:02, 42:11 ⁶	1							
*48:12	1							
*48:13	1							
*48:14	1							
*48:15	1	2	3					
*48:16		2	3					8
*48:17	1	2			5			8
*48:18	1	2	3					
*48:19	1	2	3					
*48:20	1	2	3			6		
*48:21	1	2				6		
*48:22	1	2	3					
*48:23	1	2			5			
*48:24	1		3					
*48:25	1			4			7	
*07:02:01-07:02:25, 07:02:27-07:03, 07:08, 07:10, 07:15-07:16, 07:20-07:24, 07:28-07:31, 07:35, 07:37, 07:39, 07:41-07:42, 07:44, 07:46-07:47, 07:49N, 07:55-07:59, 07:61-07:64, 07:67N, 07:70-07:76, 07:79, 07:82-07:83, 07:85-07:96:02, 07:98-07:99, 07:101-07:104, 07:106-07:111N, 07:113-07:114, 07:116-07:121, 07:124-07:130, 07:133-07:134, 07:136								7
*07:02:26, 07:04, 07:26, 07:43, 07:45, 07:52, 07:66, 07:84, 07:131, 07:135N								7
*07:05:01-07:06, 07:32, 07:69, 07:97, 07:105, 07:112, 07:138								7
*07:07, 07:12, 07:14, 07:18:01-07:18:02, 07:77, 15:138					5			7
*07:09, 07:11, 07:17								7
*07:13, 07:54, 07:65, 07:132								
*07:19, 07:25, 07:48, 08:01:12, 08:07, 08:12:02, 08:14, 08:64, 08:74, 14:01:01-14:03, 14:06:01-14:09, 14:11-14:12, 14:14-14:27, 15:16:01-15:16:03, 15:18:01-15:18:04, 15:23, 15:29, 15:39:01-15:40, 15:67, 15:72, 15:74, 15:93, 15:95, 15:108, 15:115, 15:119, 15:134, 15:153, 15:161, 15:176, 15:195, 15:197-15:198, 15:226N, 38:29, 39:07, 39:15, 39:17, 39:25N, 39:43-39:44, 39:55, 42:16, 46:08, 51:37, 51:45, 56:32, 58:06, C*15:09, C*15:19-15:20, C*15:27								7
Well No.	1	2	3	4	5	6	7	8

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215	290	170	120	135	100	140	120	Length of spec. PCR product(s)
					250	435		
9	10	11	12	13	14	15	16	Well No.
		11		13				*48:10, 08:17, 08:54, 38:03, 39:02:01-39:02:02, 39:08, 39:13:01-39:13:02, 42:11 ⁶
		11		13		15		*48:12
	10	11		13				*48:13
		11		w	14	15		*48:14
		11					16	*48:15
		11						*48:16
		11						*48:17
		11				15		*48:18
9		11						*48:19
		11						*48:20
		11						*48:21
		11	12					*48:22
		11	12					*48:23
9	10	11						*48:24
		11						*48:25
9							16	*07:02:01-07:02:25, 07:02:27-07:03, 07:08, 07:10, 07:15-07:16, 07:20-07:24, 07:28-07:31, 07:35, 07:37, 07:39, 07:41-07:42, 07:44, 07:46-07:47, 07:49N, 07:55- 07:59, 07:61-07:64, 07:67N, 07:70-07:76, 07:79, 07:82- 07:83, 07:85-07:96:02, 07:98-07:99, 07:101-07:104, 07:106-07:111N, 07:113-07:114, 07:116-07:121, 07:124-07:130, 07:133-07:134, 07:136
							16	*07:02:26, 07:04, 07:26, 07:43, 07:45, 07:52, 07:66, 07:84, 07:131, 07:135N
9				13			16	*07:05:01-07:06, 07:32, 07:69, 07:97, 07:105, 07:112, 07:138
							16	*07:07, 07:12, 07:14, 07:18:01-07:18:02, 07:77, 15:138
9					14		16	*07:09, 07:11, 07:17
9							16	*07:13, 07:54, 07:65, 07:132
								*07:19, 07:25, 07:48, 08:01:12, 08:07, 08:12:02, 08:14, 08:64, 08:74, 14:01:01-14:03, 14:06:01-14:09, 14:11- 14:12, 14:14-14:27, 15:16:01-15:16:03, 15:18:01- 15:18:04, 15:23, 15:29, 15:39:01-15:40, 15:67, 15:72, 15:74, 15:93, 15:95, 15:108, 15:115, 15:119, 15:134, 15:153, 15:161, 15:176, 15:195, 15:197-15:198, 15:226N, 38:29, 39:07, 39:15, 39:17, 39:25N, 39:43- 39:44, 39:55, 42:16, 46:08, 51:37, 51:45, 56:32, 58:06, C*15:09, C*15:19-15:20, C*15:27
9	10	11	12	13	14	15	16	Well No.

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Length of spec.	385	145	175	150	285	90	150	85
PCR product(s)						170	385	225
						285		
Well No.	1	2	3	4	5	6	7	8
*07:27, 07:50							7	
*07:33, 07:60, 07:139							7	
*07:34, 07:80							7	
*07:36, 07:38, 07:68:01-07:68:03, 07:81							7	
*07:40, 08:20, 08:40, 08:70							7	
*07:51, 07:122							7	
*07:53							7	
*07:78							7	8
*07:100							7	
*07:115							7	8
*07:123								
*07:137					5		7	
*08:01:01-08:01:11, 08:01:13-08:02, 08:05, 08:08N-08:09, 08:11-08:12:01, 08:12:03-08:13, 08:15-08:16, 08:18-08:19N, 08:21-08:27, 08:29-08:34, 08:36, 08:39, 08:41-08:48, 08:50-08:51, 08:53, 08:55-08:63, 08:65-08:69, 08:72N-08:73, 08:75-08:77, 38:02:01-38:02:03, 38:08, 38:15, 38:17-38:18, 38:23, 38:35, 39:01:01:01-39:01:01:02L, 39:01:03-39:01:11, 39:04-39:06:02, 39:09-39:10:01, 39:11-39:12, 39:16, 39:18-39:20, 39:26-39:28, 39:30-39:36, 39:38Q, 39:40N-39:41, 39:45-39:48, 39:50-39:54, 39:57-39:67, 42:01:01-42:01:02, 42:04-42:07, 42:12-42:13, 42:15, 67:01:01-67:01:02, 67:03							7	
*08:03, 08:52, 08:71, 38:01:01, 38:01:03-38:01:05, 38:05-38:07, 38:09-38:14, 38:16, 38:21, 38:24, 38:26-38:28, 38:30-38:34N, 42:10							7	
*08:04, 39:39							7	
Well No.	1	2	3	4	5	6	7	8

Lot No.: **95M**

Lot-specific information

www.olerup-ssp.com

215	290	170	120	135	100	140	120	Length of spec. PCR product(s)
					250	435		
9	10	11	12	13	14	15	16	Well No.
9		11					16	*07:27, 07:50
9	10							*07:33, 07:60, 07:139
				13			16	*07:34, 07:80
9						15	16	*07:36, 07:38, 07:68:01-07:68:03, 07:81
9				13				*07:40, 08:20, 08:40, 08:70
9								*07:51, 07:122
9	10			13				*07:53
				13			16	*07:78
9	10					15		*07:100
9							16	*07:115
9				13			16	*07:123
				13			16	*07:137
				13				*08:01:01-08:01:11, 08:01:13-08:02, 08:05, 08:08N-08:09, 08:11-08:12:01, 08:12:03-08:13, 08:15-08:16, 08:18-08:19N, 08:21-08:27, 08:29-08:34, 08:36, 08:39, 08:41-08:48, 08:50-08:51, 08:53, 08:55-08:63, 08:65-08:69, 08:72N-08:73, 08:75-08:77, 38:02:01-38:02:03, 38:08, 38:15, 38:17-38:18, 38:23, 38:35, 39:01:01:01-39:01:01:02L, 39:01:03-39:01:11, 39:04-39:06:02, 39:09-39:10:01, 39:11-39:12, 39:16, 39:18-39:20, 39:26-39:28, 39:30-39:36, 39:38Q, 39:40N-39:41, 39:45-39:48, 39:50-39:54, 39:57-39:67, 42:01:01-42:01:02, 42:04-42:07, 42:12-42:13, 42:15, 67:01:01-67:01:02, 67:03
				13		15		*08:03, 08:52, 08:71, 38:01:01, 38:01:03-38:01:05, 38:05-38:07, 38:09-38:14, 38:16, 38:21, 38:24, 38:26-38:28, 38:30-38:34N, 42:10
		11		13				*08:04, 39:39
9	10	11	12	13	14	15	16	Well No.

Length of spec.	385	145	175	150	285	90	150	85
PCR product(s)						170	385	225
						285		
Well No.	1	2	3	4	5	6	7	8
*08:10, 13:03, 13:45, 13:48, 15:09, 15:30, 15:42, 15:48, 15:58, 15:73, 15:83, 15:86, 15:150, 15:188, 15:224, 15:229, 27:20, 27:27, 35:09:01-35:09:02, 35:18, 35:44, 35:60, 35:87-35:88, 39:10:02, 40:04, 40:06:01:01-40:06:04, 40:68, 40:70, 46:11, 46:18, 51:01:01-51:01:18, 51:01:20-51:02:02, 51:02:04-51:03, 51:05-51:16, 51:19-51:24:04, 51:26, 51:28-51:36, 51:38-51:41N, 51:43-51:44N, 51:48-51:55, 51:57-51:63, 51:65-51:74, 51:76-51:80, 51:82-51:83, 51:86-51:89, 51:91, 51:95-51:115, 51:117-51:121, 52:01:01:01-52:11, 52:13-52:15, 52:17-52:25, 54:01:01-54:05N, 54:07-54:08N, 54:10, 54:12-54:13, 54:17-54:21, 54:23-54:24, 55:01:01-55:03, 55:05, 55:07-55:13, 55:15-55:22, 55:24-55:26, 55:28-55:40, 55:42-55:45, 55:47-55:48, 55:52-55:53, 56:01:01-56:02, 56:04-56:08, 56:10, 56:13-56:17, 56:19N-56:30, 58:08:01-58:08:02, 58:20, 59:01:01:01-59:05, 67:02, 78:01:01-78:07, 82:01-82:03, C*06:21, C*15:24								
*08:28, 08:37							7	
*08:35							7	
*08:38, 38:04, 39:22, 41:01-41:03:02, 41:05-41:07, 41:09, 41:11-41:14, 41:16-41:17, 41:19, 45:12	1							
*08:49, 14:10, 15:80, 15:194, 15:223, 35:11:01-35:11:02, 35:21, 53:06, 53:08:01-53:08:02, 55:14, 57:22, 58:19				4			7	
Well No.	1	2	3	4	5	6	7	8

Lot No.: **95M**

Lot-specific information

www.olerup-ssp.com

215	290	170	120	135	100	140	120	Length of spec. PCR product(s)
					250	435		
9	10	11	12	13	14	15	16	Well No.
				13				*08:10, 13:03, 13:45, 13:48, 15:09, 15:30, 15:42, 15:48, 15:58, 15:73, 15:83, 15:86, 15:150, 15:188, 15:224, 15:229, 27:20, 27:27, 35:09:01-35:09:02, 35:18, 35:44, 35:60, 35:87-35:88, 39:10:02, 40:04, 40:06:01:01-40:06:04, 40:68, 40:70, 46:11, 46:18, 51:01:01-51:01:18, 51:01:20-51:02:02, 51:02:04-51:03, 51:05-51:16, 51:19-51:24:04, 51:26, 51:28-51:36, 51:38-51:41N, 51:43-51:44N, 51:48-51:55, 51:57-51:63, 51:65-51:74, 51:76-51:80, 51:82-51:83, 51:86-51:89, 51:91, 51:95-51:115, 51:117-51:121, 52:01:01:01-52:11, 52:13-52:15, 52:17-52:25, 54:01:01-54:05N, 54:07-54:08N, 54:10, 54:12-54:13, 54:17-54:21, 54:23-54:24, 55:01:01-55:03, 55:05, 55:07-55:13, 55:15-55:22, 55:24-55:26, 55:28-55:40, 55:42-55:45, 55:47-55:48, 55:52-55:53, 56:01:01-56:02, 56:04-56:08, 56:10, 56:13-56:17, 56:19N-56:30, 58:08:01-58:08:02, 58:20, 59:01:01:01-59:05, 67:02, 78:01:01-78:07, 82:01-82:03, C*06:21, C*15:24
					14			*08:28, 08:37
				13	14			*08:35
				13				*08:38, 38:04, 39:22, 41:01-41:03:02, 41:05-41:07, 41:09, 41:11-41:14, 41:16-41:17, 41:19, 45:12
								*08:49, 14:10, 15:80, 15:194, 15:223, 35:11:01-35:11:02, 35:21, 53:06, 53:08:01-53:08:02, 55:14, 57:22, 58:19
9	10	11	12	13	14	15	16	Well No.

Lot No.: **95M**

Lot-specific information

www.olerup-ssp.com

Length of spec. PCR product(s)	385	145	175	150	285	90	150	85
						170	385	225
						285		
Well No.	1	2	3	4	5	6	7	8
*13:01:01-13:01:06, 13:06-13:07N, 13:12-13:13, 13:17, 13:20, 13:25-13:26, 13:28-13:29, 13:36, 13:39, 13:43, 13:50, 15:02:01-15:02:05, 15:13:01-15:13:02, 15:20-15:21, 15:25:01-15:25:03, 15:36, 15:44, 15:77, 15:85, 15:88-15:89, 15:106, 15:112, 15:121, 15:139, 15:144, 15:154, 15:165, 15:170, 15:213-15:214, 27:19, 27:30, 35:01:01-35:01:29, 35:03:01-35:03:10, 35:07-35:08:04, 35:10, 35:13-35:15, 35:19-35:20:02, 35:23-35:29, 35:33-35:36, 35:38-35:42:02, 35:45-35:49, 35:52, 35:54-35:57, 35:61-35:63, 35:65Q, 35:69-35:71, 35:74, 35:76-35:78, 35:80, 35:82, 35:85, 35:90-35:94, 35:96, 35:98, 35:100-35:101:02, 35:103-35:112, 35:115-35:116, 35:120-35:124, 35:126, 35:128, 35:130N-35:134N, 35:136-35:145N, 35:147-35:148, 35:150, 35:152-35:153, 35:155-35:156, 35:158-35:161, 35:163, 35:165N-35:166, 35:168-35:171, 35:173N, 35:175-35:178, 44:02:01-44:09, 44:11-44:13, 44:16-44:17, 44:19N, 44:21-44:30, 44:32-44:40, 44:42-44:46, 44:48-44:52N, 44:55-44:61N, 44:63-44:64:02, 44:66-44:76, 44:78-44:81, 44:83-44:98, 44:101-44:105, 44:107-44:109, 44:111-44:129, 44:131-44:134, 51:42, 53:01:01-53:05, 53:07, 53:09-53:13, 53:15-53:18, 53:20-53:26, 56:09, 56:11, 57:01:01-57:01:04, 57:01:06-57:01:11, 57:04-57:06, 57:08, 57:10, 57:14-57:16, 57:18-57:20, 57:23-57:27, 57:29-57:30, 57:32-57:38, 57:40-57:41, 57:43-57:45, 57:48-57:52, 58:01:01-58:01:02, 58:01:04-58:01:09, 58:04, 58:09-58:15, 58:17N, 58:21-58:24, 58:29-58:34, 83:01, C*03:102				4				
*13:22:01-13:22:02, 35:02:01-35:02:04, 35:04:01-35:04:03, 35:06, 35:12:01-35:12:03, 35:59, 35:81, 35:83, 35:95, 35:129N, 35:146, 35:149, 35:154, 35:157, 35:172, 44:10, 44:14, 44:62, 44:77, 44:82, 51:04, 51:46, 51:56:01-51:56:02, 53:19, 56:12, 57:02:01-57:03:02, 57:07, 57:09, 57:12, 57:17, 57:28N, 57:46, 58:28				4				
*13:23, 15:204, 35:50, 35:84, 37:21-37:22, 37:26, 58:05				4				
*13:40, 51:01:19, 51:75, A*26:01:19								
*14:05, 39:29							7	
*14:13, 38:19, 39:03, 39:14, 39:24:01-39:24:02, 39:37							7	
Well No.	1	2	3	4	5	6	7	8

Lot No.: **95M**

Lot-specific information

www.olerup-ssp.com

215	290	170	120	135	100	140	120	Length of spec. PCR product(s)
					250	435		
9	10	11	12	13	14	15	16	Well No.
								*13:01:01-13:01:06, 13:06-13:07N, 13:12-13:13, 13:17, 13:20, 13:25-13:26, 13:28-13:29, 13:36, 13:39, 13:43, 13:50, 15:02:01-15:02:05, 15:13:01-15:13:02, 15:20-15:21, 15:25:01-15:25:03, 15:36, 15:44, 15:77, 15:85, 15:88-15:89, 15:106, 15:112, 15:121, 15:139, 15:144, 15:154, 15:165, 15:170, 15:213-15:214, 27:19, 27:30, 35:01:01:01-35:01:29, 35:03:01-35:03:10, 35:07-35:08:04, 35:10, 35:13-35:15, 35:19-35:20:02, 35:23-35:29, 35:33-35:36, 35:38-35:42:02, 35:45-35:49, 35:52, 35:54-35:57, 35:61-35:63, 35:65Q, 35:69-35:71, 35:74, 35:76-35:78, 35:80, 35:82, 35:85, 35:90-35:94, 35:96, 35:98, 35:100-35:101:02, 35:103-35:112, 35:115-35:116, 35:120-35:124, 35:126, 35:128, 35:130N-35:134N, 35:136-35:145N, 35:147-35:148, 35:150, 35:152-35:153, 35:155-35:156, 35:158-35:161, 35:163, 35:165N-35:166, 35:168-35:171, 35:173N, 35:175-35:178, 44:02:01:01-44:09, 44:11-44:13, 44:16-44:17, 44:19N, 44:21-44:30, 44:32-44:40, 44:42-44:46, 44:48-44:52N, 44:55-44:61N, 44:63-44:64:02, 44:66-44:76, 44:78-44:81, 44:83-44:98, 44:101-44:105, 44:107-44:109, 44:111-44:129, 44:131-44:134, 51:42, 53:01:01-53:05, 53:07, 53:09-53:13, 53:15-53:18, 53:20-53:26, 56:09, 56:11, 57:01:01-57:01:04, 57:01:06-57:01:11, 57:04-57:06, 57:08, 57:10, 57:14-57:16, 57:18-57:20, 57:23-57:27, 57:29-57:30, 57:32-57:38, 57:40-57:41, 57:43-57:45, 57:48-57:52, 58:01:01-58:01:02, 58:01:04-58:01:09, 58:04, 58:09-58:15, 58:17N, 58:21-58:24, 58:29-58:34, 83:01, C*03:102
				13				*13:22:01-13:22:02, 35:02:01-35:02:04, 35:04:01-35:04:03, 35:06, 35:12:01-35:12:03, 35:59, 35:81, 35:83, 35:95, 35:129N, 35:146, 35:149, 35:154, 35:157, 35:172, 44:10, 44:14, 44:62, 44:77, 44:82, 51:04, 51:46, 51:56:01-51:56:02, 53:19, 56:12, 57:02:01-57:03:02, 57:07, 57:09, 57:12, 57:17, 57:28N, 57:46, 58:28
			12					*13:23, 15:204, 35:50, 35:84, 37:21-37:22, 37:26, 58:05
				w				*13:40, 51:01:19, 51:75, A*26:01:19
	10					15		*14:05, 39:29
	10			13		15		*14:13, 38:19, 39:03, 39:14, 39:24:01-39:24:02, 39:37
9	10	11	12	13	14	15	16	Well No.

Lot No.: **95M**

Lot-specific information

www.olerup-ssp.com

Length of spec. PCR product(s)	385	145	175	150	285	90	150	85
						170	385	225
						285		
Well No.	1	2	3	4	5	6	7	8
*15:03:01-15:03:03, 15:61, 15:64, 15:69, 15:98, 15:103, 15:127, 15:131-15:132, 15:158, 15:173, 15:210, 15:220							7	
*15:07:01-15:07:02, 15:126, 15:207, 46:12								
*15:45								
*15:47							w	
*15:49, 15:65, 15:221, 35:99, 46:03, 57:13							w	
*15:54, 15:91, 15:123, 15:151, 15:156, 18:01:13, 18:25, 18:43								
*15:55, 35:05:01-35:05:02, 35:51, 35:72, 35:89, 35:97, 53:14, 58:18								
*15:62				4			7	
*15:68	1							
*15:71, 15:116, 15:124, 15:175, 15:225, 18:07:01- 18:07:02, 18:29, 18:33, 27:75, 46:14, C*07:123, C*07:173								
*15:230, C*02:23					5			
*18:01:01-18:01:12, 18:01:14-18:03, 18:05-18:06, 18:08-18:13, 18:17N-18:20, 18:23N-18:24, 18:27- 18:28, 18:31-18:32, 18:34, 18:36-18:42, 18:44-18:56, 18:58-18:60, 18:62-18:66, 37:01:08-37:02								
*18:14								
*18:15, 18:57							7	
*18:21, 18:30							w	
*18:22				4				
*18:26, 18:61, 37:12								
*18:35					5			
*27:07, 27:11, 27:33, 27:43, 35:31, 40:02:01-40:02:09, 40:02:11-40:02:12, 40:05, 40:08, 40:13, 40:39-40:40, 40:94, 40:97, 40:122, 40:142N-40:144N, 51:81, 55:04, 55:49, 55:51, 58:27								
*27:24			3					
*27:32, 44:54, 44:106								
*27:34, 40:02:10, 40:89, C*03:05, C*03:25, C*03:27, C*08:08								
*27:36		2				6		
*35:16-35:17, 35:30, 35:113, 35:125, 35:164, 44:110				4				
*35:22, 51:64								
*35:58							7	
*35:66								
Well No.	1	2	3	4	5	6	7	8

Lot No.: **95M**

Lot-specific information

www.olerup-ssp.com

215	290	170	120	135	100	140	120	Length of spec. PCR product(s)
					250	435		
9	10	11	12	13	14	15	16	Well No.
		11						*15:03:01-15:03:03, 15:61, 15:64, 15:69, 15:98, 15:103, 15:127, 15:131-15:132, 15:158, 15:173, 15:210, 15:220
9	10				14	15		*15:07:01-15:07:02, 15:126, 15:207, 46:12
9	10					15		*15:45
		11						*15:47
		11						*15:49, 15:65, 15:221, 35:99, 46:03, 57:13 *15:54, 15:91, 15:123, 15:151, 15:156, 18:01:13, 18:25, 18:43
	10				14	15		*15:55, 35:05:01-35:05:02, 35:51, 35:72, 35:89, 35:97, 53:14, 58:18
		11						*15:62
9	10	11			14	15		*15:68
			12					*15:71, 15:116, 15:124, 15:175, 15:225, 18:07:01- 18:07:02, 18:29, 18:33, 27:75, 46:14, C*07:123, C*07:173
							16	*15:230, C*02:23
		11	12					*18:01:01-18:01:12, 18:01:14-18:03, 18:05-18:06, 18:08-18:13, 18:17N-18:20, 18:23N-18:24, 18:27- 18:28, 18:31-18:32, 18:34, 18:36-18:42, 18:44-18:56, 18:58-18:60, 18:62-18:66, 37:01:08-37:02
	10	11	12		14	15		*18:14
		11	12					*18:15, 18:57
		11	12					*18:21, 18:30
	10	11	12					*18:22
		11	12	13				*18:26, 18:61, 37:12
		11	12					*18:35
	10			13				*27:07, 27:11, 27:33, 27:43, 35:31, 40:02:01-40:02:09, 40:02:11-40:02:12, 40:05, 40:08, 40:13, 40:39-40:40, 40:94, 40:97, 40:122, 40:142N-40:144N, 51:81, 55:04, 55:49, 55:51, 58:27
	10							*27:24
	10					15		*27:32, 44:54, 44:106
	10							*27:34, 40:02:10, 40:89, C*03:05, C*03:25, C*03:27, C*08:08
								*27:36
	10							*35:16-35:17, 35:30, 35:113, 35:125, 35:164, 44:110
	10			13		15		*35:22, 51:64
	10				14	15		*35:58
9					14	15		*35:66
9	10	11	12	13	14	15	16	Well No.

Lot No.: **95M**

Lot-specific information

www.olerup-ssp.com

Length of spec.	385	145	175	150	285	90	150	85
PCR product(s)						170	385	225
						285		
Well No.	1	2	3	4	5	6	7	8
*35:114, 40:03								
*35:162, 57:39				4				
*37:01:01-37:01:06, 37:03N-37:06, 37:08, 37:10-37:11, 37:13-37:20, 37:23-37:25, 37:27-37:31				4				
*37:01:07, 44:130				4				
*37:07								
*37:09								
*38:01:02, 38:22							7	
*38:20				4			7	
*38:25	1							
*39:01:12, 39:56							7	
*39:23, 39:49	1							
*39:42				4			7	
*40:01:01-40:01:17, 40:01:19-40:01:23, 40:07, 40:60, 40:66, 40:73, 40:79, 40:124:01, 40:138-40:140, 40:146- 40:147, 40:150, 40:152-40:153, 40:155N	1	2			5			
*40:01:18	1	2						
*40:09, 40:18, 40:24, 40:85, 40:91	?							
*40:10:01-40:10:02, 40:21-40:22N, 40:33, 40:38, 40:42- 40:43, 40:46-40:47, 40:49, 40:54-40:55, 40:61, 40:63, 40:67, 40:74, 40:76, 40:81, 40:84, 40:87:01-40:88, 40:100-40:102, 40:112-40:114, 40:116-40:118N, 40:123, 40:124:02-40:126, 40:128, 40:132, 40:134- 40:135, 40:137, 40:141, 40:151, 40:154, 40:156, 40:160, 40:168, 40:170-40:172	?	2			5			
*40:11:01-40:11:02, 40:26, 40:53, 40:64, 40:75, 40:86, 40:93, 40:95-40:96, 40:99, 40:103, 40:109-40:110, 40:127, 40:129, 40:148, 40:161-40:162, 40:165, 40:167	?							
*40:12		2			5			
*40:14:01-40:14:03, 40:121, 40:136	?				5			
*40:15	?							
*40:16	1							
*40:19, 40:27:01-40:27:02, 40:29, 40:37, 40:50, 40:56- 40:58, 40:78, 40:82, 40:90, 40:104, 40:107, 40:111, 40:115, 40:119, 40:133Q, 40:145, 40:157, 40:164, 40:169, 40:173	?							
*40:23	1	2			5			
*40:25, 40:69, 40:106, 40:166, 44:31		2			5			
*40:28	?			4				
Well No.	1	2	3	4	5	6	7	8

Lot No.: **95M**

Lot-specific information

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215	290	170	120	135	100	140	120	Length of spec. PCR product(s)
					250	435		
9	10	11	12	13	14	15	16	Well No.
	10				14			*35:114, 40:03
			12	13				*35:162, 57:39
		11	12					*37:01:01-37:01:06, 37:03N-37:06, 37:08, 37:10-37:11, 37:13-37:20, 37:23-37:25, 37:27-37:31
		11						*37:01:07, 44:130
9		11	12				16	*37:07
	10	11	12					*37:09
						15		*38:01:02, 38:22
				13		15		*38:20
				13		15		*38:25
				w				*39:01:12, 39:56
		11						*39:23, 39:49
				13				*39:42
								*40:01:01-40:01:17, 40:01:19-40:01:23, 40:07, 40:60, 40:66, 40:73, 40:79, 40:124:01, 40:138-40:140, 40:146- 40:147, 40:150, 40:152-40:153, 40:155N
								*40:01:18
	10							*40:09, 40:18, 40:24, 40:85, 40:91
								*40:10:01-40:10:02, 40:21-40:22N, 40:33, 40:38, 40:42- 40:43, 40:46-40:47, 40:49, 40:54-40:55, 40:61, 40:63, 40:67, 40:74, 40:76, 40:81, 40:84, 40:87:01-40:88, 40:100-40:102, 40:112-40:114, 40:116-40:118N, 40:123, 40:124:02-40:126, 40:128, 40:132, 40:134- 40:135, 40:137, 40:141, 40:151, 40:154, 40:156, 40:160, 40:168, 40:170-40:172
				13				*40:11:01-40:11:02, 40:26, 40:53, 40:64, 40:75, 40:86, 40:93, 40:95-40:96, 40:99, 40:103, 40:109-40:110, 40:127, 40:129, 40:148, 40:161-40:162, 40:165, 40:167
		11						*40:12
				13				*40:14:01-40:14:03, 40:121, 40:136
9				13			16	*40:15
9				13			16	*40:16
	10			13				*40:19, 40:27:01-40:27:02, 40:29, 40:37, 40:50, 40:56- 40:58, 40:78, 40:82, 40:90, 40:104, 40:107, 40:111, 40:115, 40:119, 40:133Q, 40:145, 40:157, 40:164, 40:169, 40:173
							16	*40:23
								*40:25, 40:69, 40:106, 40:166, 44:31
				13				*40:28
9	10	11	12	13	14	15	16	Well No.

Length of spec.	385	145	175	150	285	90	150	85
PCR product(s)						170	385	225
						285		
Well No.	1	2	3	4	5	6	7	8
*40:30, 40:34	?	2						
*40:31, 40:45, 40:80	?	2	3					
*40:32, 40:98	?							
*40:35, 40:71	?							
*40:36, 40:48	?	2			5			8
*40:44, 40:92, 40:120, 40:130-40:131, 40:159, 40:163	?							
*40:51, 41:04, 41:10, 41:18, 45:01-45:05, 45:07-45:11, 45:13, 49:02, 50:01:01-50:02, 50:04-50:14	1							
*40:52	?	2			5			
*40:59	1	2			5			
*40:62, 40:65, 40:108	?				5			
*40:72:01-40:72:02	1				5			
*40:77	1				5			8
*40:83	?							
*40:105	?							
*40:149	?	2			5			
*40:158	?				5			
*41:08	1				5			
*41:15	1							
*42:02							7	
*42:08, 42:14							7	
*42:09							7	
*44:18, 49:01:01-49:01:03, 49:05-49:20	1							
*46:06		2			5			
*49:03	1							
*49:04	1						7	
*51:116								
*52:16								
*57:42				4				
*73:01-73:02							w	
*81:01, 81:03-81:05		2	3					
C*04:77					5			8
C*07:38					5			
HLA-B allele								
Well No.	1	2	3	4	5	6	7	8

Lot No.: **95M**

Lot-specific information

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215	290	170	120	135	100	140	120	Length of spec. PCR product(s)	
					250	435			
9	10	11	12	13	14	15	16	Well No.	
								*40:30, 40:34	
								*40:31, 40:45, 40:80	
9							16	*40:32, 40:98	
	10			13		15		*40:35, 40:71	
								*40:36, 40:48	
								*40:44, 40:92, 40:120, 40:130-40:131, 40:159, 40:163	
								*40:51, 41:04, 41:10, 41:18, 45:01-45:05, 45:07-45:11, 45:13, 49:02, 50:01:01-50:02, 50:04-50:14	
			12					*40:52	
			12					*40:59	
								*40:62, 40:65, 40:108	
				w				*40:72:01-40:72:02	
				w				*40:77	
			12	13				*40:83	
	10			13	14			*40:105	
		11						*40:149	
				13			16	*40:158	
				13				*41:08	
	10			13				*41:15	
			12	13				*42:02	
	10			13				*42:08, 42:14	
			12		14			*42:09	
						15		*44:18, 49:01:01-49:01:03, 49:05-49:20	
			12					*46:06	
			12			15		*49:03	
						15		*49:04	
			12	13				*51:116	
		11		13				*52:16	
				w				*57:42	
			12					*73:01-73:02	
								*81:01, 81:03-81:05	
							16	C*04:77	
								C*07:38	
9	10	11	12	13	14	15	16	HLA-B allele Well No.	

Lot No.: **95M**

Lot-specific information

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

Well number 1 contains the primer pair giving rise to the shorter, 800 bp, internal positive control band in order to help in the correct orientation of the HLA-B*48 SSP subtyping.

In addition, wells number 2, 3, 4, 10, 11 and 15 contain the primer pair giving rise to the shorter, 800 bp, internal positive control band.

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

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

⁴The B*48 primer set cannot separate the B*48:06 and B*81:02 alleles. These two alleles can be distinguished by the HLA-B low resolution and/or HLA-B*81 kits.

⁵The B*48:09 and B*48:11 alleles can be distinguished by the different sizes of the specific PCR products generated by primer mix 14.

⁶The B*48 primer set cannot separate the B*48:10 and the B*08:17, 08:54, 38:03, 39:02:01-39:02:02, 39:08, 39:13:01-39:13:02 and 42:11 alleles. These alleles can be distinguished by the HLA-B low resolution and/or HLA-B*08, HLA-B*39 and HLA-B*42 kits.

⁷Primer mix 6: Specific PCR fragment of 90 bp in the B*48:20 allele. Specific PCR fragment of 170 bp in the B*48:05 allele. Specific PCR fragment of 285 bp in the B*48:21 and in the B*27:36 alleles. Primer mix 7: Specific PCR fragment of 150 bp in the B*48:25 and in the B*15:03:01-15:03:03, 15:16:01-15:16:03, 15:18:01-15:18:04, 15:23, 15:29, 15:39:01-15:40, 15:47^w, 15:49^w, 15:61-15:62, 15:64, 15:65^w, 15:67, 15:69, 15:72, 15:74, 15:80, 15:93, 15:95, 15:98, 15:103, 15:108, 15:115, 15:119, 15:127, 15:131-15:132, 15:134, 15:138, 15:153, 15:158, 15:161, 15:173, 15:176, 15:194-15:195, 15:197-15:198, 15:210, 15:220, 15:221^w, 15:223, 15:226N, 18:15, 18:21^w, 18:30^w, 18:57, 35:11:01-35:11:02, 35:21, 35:58, 35:99^w, 46:03^w, 46:08, 49:04, 51:37, 51:45, 53:06, 53:08:01-53:08:02, 55:14, 56:32, 57:13^w, 57:22, 58:06 and 58:19 and in the C*15:09, C*15:19-15:20 and C*15:27 alleles. Specific PCR fragment of 385 bp in the B*48:06 and in the B*07:02:01-07:08, 07:10, 07:12, 07:14-07:16, 07:18:01-07:53, 07:55-07:64, 07:66-07:122, 07:124-07:131, 07:133-07:139, 08:01:01-08:05, 08:07-08:09, 08:11-08:16, 08:18-08:37, 08:39-08:53, 08:55-08:77, 14:01:01-14:03, 14:05-14:27, 38:01:01-38:02:03, 38:05-38:24, 38:26-38:35, 39:01:01-01-39:01:01-02L, 39:01:03-39:01:12, 39:03-39:07, 39:09-39:10:01, 39:11-39:12, 39:14-39:20, 39:24:01-39:48, 39:50-39:67, 42:01:01-42:02, 42:04-42:10, 42:12-42:16, 67:01:01-67:01:02, 67:03, 73:01^w-73:02^w and 81:02 alleles. Specific PCR fragment of 150 and 385 bp in the B*07:09, 07:11 and 07:17 alleles.

Primer mix 8: Specific PCR fragment of 85 bp in the B*48:16 allele. Specific PCR fragment of 225 bp in the B*48:07 and 48:17 and in the B*07:78, 07:115, 40:36, 40:48 and 40:77 and in the C*04:77 alleles.

Primer mix 14: Specific PCR fragment of 100 bp in the B*48:09 and 48:14 and in the B*07:09, 07:11, 07:17, 08:28, 08:35, 08:37, 15:07:01-15:07:02, 15:55, 15:68, 15:126, 15:207, 18:14, 35:05:01-35:05:02, 35:51, 35:58, 35:66, 35:72, 35:89, 35:97, 35:114, 40:03, 40:105, 42:09, 46:12, 53:14 and 58:18 alleles. Specific Specific PCR fragment of 250 bp in the B*48:11 allele.

Primer mix 15: Specific PCR fragment of 140 bp in the B*48:12 and 48:14 and in the B*07:68:01-07:68:03, 07:100, 08:71, 14:05, 14:13, 15:07:01-15:07:02, 15:45, 15:55, 15:68, 15:126, 15:207, 18:14, 27:32, 35:05:01-35:05:02, 35:22, 35:51, 35:58, 35:66, 35:72, 35:89, 35:97, 38:19, 39:03, 39:14, 39:24:01-39:24:02, 39:29, 39:37, 40:35, 40:71, 42:10, 44:54, 44:106, 46:12, 51:64, 53:14 and 58:18 alleles. Specific PCR fragment of 435 bp in the B*48:18 and in the B*07:36, 07:38, 07:81, 08:03, 08:52, 38:01:01-38:01:05, 38:05-38:07, 38:09-38:14, 38:16, 38:20-38:22, 38:24-38:28, 38:30-38:34N, 44:18, 49:01:01-49:01:03 and 49:03-49:20 alleles. Specific PCR fragment of 140 and 435 bp in the B*38:19 allele.

'w', might be weakly amplified.

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

CELL LINE VALIDATION SHEET																					
HLA-B*48 SSP primer set																					
					Well																
					1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	
					Prod. No.:	201192001	201192002	201192003	201192004	201192005	201192006	201192007	201192008	201192009	201194110	201192011	201192012	201192013	201192014	201192015	201192016
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	9025	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*48 SSP

Product number: 101.546-06u – without Taq polymerase
Lot number: 95M
Expiry date: 2014-June-01
Number of tests: 6
Number of wells per test: 16

Well specifications:

Well No.	Production No.	Well No.	Production No.
1	2011-920-01	9	2011-920-09
2	2011-920-02	10	2011-941-10
3	2011-920-03	11	2011-920-11
4	2011-920-04	12	2011-920-12
5	2011-920-05	13	2011-920-13
6	2011-920-06	14	2011-920-14
7	2011-920-07	15	2011-920-15
8	2011-920-08	16	2011-920-16

The specificity of each primer solution of the HLA-B*48 primer set has been tested against 48 well characterized IHWC cell line DNAs.

No DNAs carrying the alleles to be amplified by primer solutions 6 and 8 were available. The specificities of the primers in these primer solutions were tested by separately adding additional 3'-primers, respectively additional 5'-primers. In primer solutions 6, 8 and 11, one or two 5'-primers were not possible to test, and in primer solutions 9 and 14 one respective two 3'-primers were not possible to test. Additional 5'-primers in primer solutions 5, 12 and 14 were tested by separately adding an additional 3'-primer, and one additional 3'-primer in primer solution 12 was tested by separately adding an additional 5'-primer.

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

Date of approval: 2011-December-21

Approved by:

Production Quality Control

Declaration of Conformity

Product name: Olerup SSP® HLA-B*48
Product number: 101.546-06u
Lot number: 95M

Intended use: HLA-B*48 high resolution histocompatibility testing

Manufacturer: Olerup SSP AB
Franzengatan 5
SE-112 51 Stockholm, 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, Franzengatan 5, SE-112 51 Stockholm, Sweden.

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

Stockholm, Sweden
2011-December-21

Ann-Cathrin Jareman
Head of QA and Regulatory Affairs

Lot No.: **95M**

Lot-specific information

www.olerup-ssp.com

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Web page: <http://www.olerup-ssp.com>

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