

Olerup SSP® HLA-B*38

Product number:	101.565-12u – without <i>Taq</i> polymerase
Lot number:	42K
Expiry date:	2012-September-01
Number of tests:	12
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. 42K.

CHANGES COMPARED TO THE PREVIOUS *OLERUP SSP*® HLA-B*38 LOT

The HLA-B*38 specificity and interpretation tables have been updated for the HLA-B alleles described since the previous *Olerup SSP*® HLA-B*38 lot was made (Lot No. 80F).

The amplification patterns for some rare HLA-B*38 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
7	Added	Added	Primer pair added for the B*38:21 allele.
8	Modified, added	Modified	Increased yield of specific PCR product, primers added for the B*38:20 and B*38:22 alleles.
9	Added	Added	Primer pair added for the B*38:21 allele.
11	Added	Added	Primer pair added for the B*38:18 allele.
12	Modified	-	Increased yield of specific PCR product.
16	Removed, added	Added	Decreased primer oligomer formation, primer pair added for the B*38:19 allele.

PRODUCT DESCRIPTION

HLA-B*38 SSP subtyping

CONTENT

The primer set contains 5'- and 3'-primers for identifying the B*38:01 to B*38:22 alleles.

PLATE LAYOUT

Each 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 cut PCR plate is marked with ‘HLA-B*38’ in silver/gray ink.

Well No. 1 is marked with the Lot No. ‘42K’.

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 16 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*38 SSP subtypings will be influenced by most B*07, eleven B*08, four B*13, the B*14, most B*15, most B*18, several B*27, several B*35, the B*37, most B*39, several B*40, the B*42:11, three B*44, most B*46, the B*48, the B*49, the B*50, most B*51, the B*52, most B*53, two B*54, several B*55, six B*56, four B*57, most B*58, the B*67 and the B*78 alleles when present on the other haplotype. In addition, the C*02:02:07 and C*05:01:06 alleles are amplified by primer mix 8.

UNIQUELY IDENTIFIED ALLELES

All the HLA-B*38 alleles, i.e. **B*38:01 to B*38:22**, recognized by the HLA Nomenclature Committee in April 2010¹ will give rise to unique amplification patterns by the primers in the HLA-B*38 subtyping kit.

The HLA-B*38 subtyping kit cannot distinguish the B*38:01:01 and 38:01:03 to 38:01:04 and the B*38:02:01 and B*38:02:02 alleles.

The B*38:17 and B*39:37 alleles give rise to identical amplification patterns with the HLA-B*38 primer set. These two alleles can be distinguished by the HLA-B low resolution and/or HLA-B*39 kits.

The B*38:11 and 38:19 alleles may can be distinguished by the different sizes of the specific PCR products generated by primer mix 16.

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

RESOLUTION IN HOMO- AND HETEROZYGOTES

The 22 HLA-B*38 alleles will generate 22 amplification patterns that can be combined in 253 homozygous and heterozygous combinations. 185 of these genotypes do not give rise to unique amplification patterns. The different specific PCR products generated by primer mixes 7 to 11 and 16 were not considered in these calculations.

```

+++++++ - - - + - + - 38:03,38:20 = 38:03,38:22
+++++++ - - - + - + - 38:01,38:03 = 38:01:02,38:03 = 38:03,38:09
+++++++ - - - + - + - 38:04,38:20 = 38:04,38:22
+++++ - + - + - + - 38:08,38:21 = 38:18,38:21
+++++ - + - + - + - 38:02,38:21 = 38:04,38:21
+++++ - + - + - + - 38:04,38:12 = 38:04,38:16
+++++ - + - + - + - 38:04,38:09 = 38:04,38:14
+++++ - + - + - + - 38:01,38:04 = 38:01:02,38:04
+++++ - + - + - + - 38:12,38:15 = 38:15,38:16
+++++ - + - + - + - 38:05,38:08 = 38:05,38:18 = 38:08,38:20 = 38:13,38:15 =
38:18,38:20 = 38:18,38:22
+++++ - + - + - + - 38:09,38:15 = 38:14,38:15
+++++ - + - + - + - 38:01,38:15 = 38:01:02,38:15 = 38:02,38:05 = 38:02,38:20
= 38:02,38:22 = 38:05,38:15 = 38:15,38:20 = 38:15,38:22
+++++ - - + - + - + 38:08,38:12 = 38:08,38:16 = 38:12,38:18 = 38:16,38:18
+++++ - - + - + - + 38:02,38:12 = 38:02,38:16
+++++ - - + - + - + 38:08,38:09 = 38:08,38:14 = 38:09,38:18 = 38:14,38:18
+++++ - - + - + - + 38:08,38:11 = 38:11,38:18
+++++ - - + - + - + 38:01,38:08 = 38:01,38:18 = 38:01:02,38:18 = 38:02,38:13
= 38:08,38:13 = 38:13,38:18
+++++ - - + - + - + 38:02,38:09 = 38:02,38:14
+++++ - - + - + - + 38:01,38:02 = 38:01:02,38:02
+++++ - + - + - + - 38:05,38:21 = 38:20,38:21 = 38:21,38:22
+++++ - + - + - + - 38:07,38:21 = 38:12,38:21 = 38:16,38:21
+++++ - + - + - + - 38:09,38:21 = 38:14,38:21
+++++ - + - + - + - 38:11,38:21 = 38:17,38:21
+++++ - + - + - + - 38:01,38:21 = 38:01:02,38:21 = 38:06,38:21 = 38:21,38:21
+++++ - + - + - + - 38:05,38:07 = 38:07,38:20 = 38:07,38:22
+++++ - + - + - + - 38:06,38:20 = 38:06,38:22
+++++ - + - + - + - 38:05,38:12 = 38:05,38:16 = 38:12,38:20 = 38:12,38:22 =
38:16,38:20 = 38:16,38:22
+++++ - + - + - + - 38:13,38:20 = 38:13,38:22
+++++ - + - + - + - 38:05,38:09 = 38:09,38:20 = 38:09,38:22 = 38:14,38:20 =
38:14,38:22
+++++ - + - + - + - 38:05,38:10 = 38:10,38:20
+++++ - + - + - + - 38:05,38:11 = 38:05,38:17 = 38:11,38:20 = 38:11,38:22 =
38:17,38:20 = 38:17,38:22
+++++ - + - + - + - 38:01,38:05 = 38:01,38:20 = 38:01,38:22 = 38:01:02,38:05
= 38:01:02,38:20 = 38:05,38:20 = 38:05,38:22 =
38:20,38:20 = 38:20,38:22
+++++ - + - + - + - 38:01:02,38:22 = 38:22,38:22
+++++ - + - + - + - 38:07,38:09 = 38:07,38:14
+++++ - + - + - + - 38:01,38:07 = 38:01:02,38:07 = 38:06,38:12 = 38:07,38:12
+++++ - + - + - + - 38:06,38:09 = 38:06,38:14
+++++ - + - + - + - 38:01,38:06 = 38:01:02,38:06
+++++ - + - + - + - 38:09,38:12 = 38:09,38:16 = 38:12,38:14
+++++ - + - + - + - 38:10,38:12 = 38:10,38:16
+++++ - + - + - + - 38:11,38:12 = 38:11,38:16 = 38:12,38:17 = 38:16,38:17
+++++ - + - + - + - 38:01,38:12 = 38:01,38:16 = 38:01:02,38:12 =
38:01:02,38:16 = 38:12,38:12 = 38:12,38:16

```

Lot No.: **42K**

Lot-specific information

www.olerup-ssp.com

++++----- --+--+--+ 38:11,38:13 = 38:13,38:17
++++----- --+--+--+ 38:01,38:13 = 38:01:02,38:13
++++----- ----++++- 38:09,38:10 = 38:10,38:14
++++----- ----+++++ 38:09,38:11 = 38:09,38:17 = 38:11,38:14 = 38:14,38:17
++++----- ----++++- 38:01,38:09 = 38:01,38:14 = 38:01:02,38:09 =
38:01:02,38:14 = 38:09,38:09 = 38:09,38:14
++++----- ----+++++ 38:10,38:11 = 38:10,38:17
++++----- ----+++++ 38:01,38:11 = 38:01,38:17 = 38:01:02,38:11 =
38:01:02,38:17 = 38:11,38:11 = 38:11,38:17
++++----- ----++++- 38:01,38:01 = 38:01,38:01:02
++++----- ----++++- 38:01:02,38:10 = 38:10,38:10
++++++++- ----++++- 38:03,38:08 = 38:03,38:18
++++++++- ----++++- 38:02,38:03 = 38:03,38:04
++++++++- ----++++- 38:04,38:08 = 38:04,38:18
++++++++- --+--+--+ 38:08,38:15 = 38:15,38:18
++++++++- ----++++- 38:02,38:15 = 38:15,38:15
++++++++- ++++----+ 38:07,38:08 = 38:07,38:18
++++++++- +-+--+--+ 38:06,38:08 = 38:06,38:18
++++++++- --+--+--+ 38:08,38:17 = 38:17,38:18
++++++++- --+--+--+ 38:02,38:08 = 38:02,38:18 = 38:08,38:18 = 38:18,38:18
++++----- ++++----+ 38:06,38:16 = 38:07,38:16
++++----- ++++----+ 38:06,38:07 = 38:07,38:07

38:01 = 38:01:01, 38:01:03-38:01:04

38:02 = 38:02:01-38:02:02

38:11 = 38:11 and 38:19

SPECIFICITY TABLE

HLA-B*38 SSP subtyping

Specificities and sizes of the PCR products of the 16 primer mixes used for HLA-B*38 SSP subtyping

Primer Mix	Size of spec. PCR product ¹	Size of control band ²	Amplified HLA-B*38 alleles ^{3,4}	Other amplified HLA-B alleles ⁵
1	185 bp	800 bp	*38:01:01-38:03, 38:07-38:22	*14:01, 14:07N-14:08, 14:10, 14:12, 14:14, 39:01:01:01-39:01:01:02L, 39:01:03-39:01:08, 39:01:10-39:02:01, 39:03, 39:05:01-39:09, 39:11, 39:14-39:15, 39:18, 39:19:02, 39:22, 39:24-39:30, 39:31 ^w , 39:32-39:44, 39:46-39:48, 39:50-39:57, 67:01:01
2	190 bp	800 bp	*38:01:01-38:02:02, 38:04-38:12, 38:15, 38:17-38:22	*07:16, 07:27, 07:37-07:38, 07:50, 07:75, 07:91, 08:03, 08:23, 08:54, 14:14, 14:18, 15:03:01-15:03:03, 15:09-15:10:02, 15:18:01-15:18:04, 15:23, 15:29, 15:37, 15:47, 15:49, 15:51-15:52, 15:54, 15:62, 15:64, 15:68-15:69, 15:72, 15:74, 15:80, 15:90-15:91, 15:93, 15:98-15:99, 15:103, 15:108, 15:114-15:115, 15:119, 15:123-15:124, 15:127, 15:131-15:134, 15:151, 15:153, 15:156, 15:158, 15:161, 15:173, 15:176, 15:186, 18:01:01, 18:01:03-18:02, 18:05-18:15, 18:17N-18:28, 18:30-18:49, 35:25, 37:01:01-37:21, 39:05:01-39:05:02, 39:07-39:08, 39:11, 39:13:01-39:13:02, 39:20, 39:37, 39:49, 39:55-39:56, 40:12, 42:11, 48:01:01-48:02:01, 48:03:01-48:22, 52:16, 58:12
3	170 bp	800 bp	*38:01:01-38:02:02, 38:04-38:05, 38:08-38:15, 38:17-38:22	*07:69, 07:85, 14:01-14:18, 15:09-15:10:02, 15:18:01-15:18:04, 15:23, 15:37, 15:51-15:52, 15:72, 15:80, 15:90, 15:93, 15:99, 15:108, 15:114-15:115, 15:119, 15:124, 15:133-15:134, 15:153, 15:161, 15:176, 15:186, 18:33, 39:01:01:01-39:01:01:02L, 39:01:03-39:01:11, 39:03-39:07, 39:09, 39:11-39:12,

				39:14-39:15, 39:18-39:19:02, 39:22, 39:24-39:38Q, 39:40N-39:48, 39:50- 39:51, 39:53, 39:55-39:57
4⁶	105 bp	1070 bp	*38:01:01- 38:01:04, 38:05, 38:09- 38:14, 38:16, 38:19-38:22	
5	210 bp	1070 bp	*38:02:01- 38:04, 38:08, 38:15, 38:18	*08:02, 15:115, 18:09, 37:10
6⁷	170 bp	800 bp	*38:03	*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, 18:01:01- 18:03, 18:05-18:06, 18:08-18:15, 18:17N-18:28, 18:30-18:32, 18:34- 18:49, 37:01:01-37:20, 39:02:01- 39:02:02, 39:08, 39:13:01-39:13:02, 39:23, 39:39, 39:49, 40:12, 42:11, 48:01:01-48:02:01, 48:03:01-48:05, 48:07-48:22, 52:16
7^{7,8}	160 bp, 205 bp	800 bp	*38:03-38:04, 38:21	*08:17, 08:38, 08:54, 15:03:01- 15:03:03, 15:47, 15:49, 15:54, 15:61-15:62, 15:68-15:69, 15:74, 15:91, 15:98, 15:103, 15:123, 15:127, 15:131-15:132, 15:151, 15:156, 15:158, 15:173, 18:12, 37:01:01-37:07, 37:09-37:21, 39:02:01-39:02:02, 39:08, 39:13:01- 39:13:02, 39:22-39:23, 39:49, 40:12, 42:11, 48:01:01-48:02:01, 48:03:01- 48:05, 48:07-48:15, 48:17-48:22, 52:16
8⁹	185 bp, 230 bp	800 bp	*38:05, 38:15, 38:20, 38:22	*14:02:01-14:02:02, 14:02:04-14:03, 14:04 ^w , 14:05-14:06:02, 14:09, 14:11, 14:13, 14:15-14:18, 15:189, 35:26, 35:35, 39:04, 39:42, C*02:02:07, C*05:01:06
9¹⁰	145 bp, 205 bp	1070 bp	*38:06-38:07, 38:21	*44:06, 49:03, 51:01:01-51:24:03, 51:26-51:46, 51:48-51:53, 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,

Lot No.: **42K**

Lot-specific information

www.olerup-ssp.com

				53:10, 53:14-53:23, 58:01:01-58:02, 58:04-58:16, 58:18-58:28
10^{6,11}	90 bp, 145 bp	1070 bp	*38:07, 38:12, 38:16	*39:19:02
11^{6,12}	90 bp, 145 bp	1070 bp	*38:08, 38:13, 38:18	
12⁶	90 bp	800 bp	*38:03, 38:09, 38:14	*14:01-14:02:02, 14:02:04-14:13, 14:15-14:17, 15:189, 39:01:01:01-39:01:01:02L, 39:01:03, 39:01:05-39:01:08, 39:01:10-39:02:01, 39:03-39:04, 39:06:01-39:06:02, 39:09, 39:12, 39:14-39:15, 39:18, 39:19:02, 39:22, 39:24-39:36, 39:38Q-39:48, 39:50-39:54, 39:57, 67:01:01
13	175 bp	800 bp	*38:01:01, 38:01:03-38:07, 38:09, 38:11-38:21	*08:55, 39:01:01:01-39:01:01:02L, 39:01:03-39:06:02, 39:08-39:14, 39:16, 39:18-39:20, 39:22-39:24, 39:26-39:28, 39:31, 39:35, 39:37-39:42, 39:44-39:46, 39:48, 39:51-39:54, 39:56-39:57, 58:20, 67:01:01-67:02
14	170 bp	1070 bp	*38:10	*07:02:01-07:24, 07:26-07:47, 07:49N-07:50, 07:52-07:99, 08:06, 08:20, 08:53, 13:16, 13:20, 13:31, 14:01-14:18, 15:01:01:01-15:01:04, 15:01:06-15:04, 15:06-15:19, 15:21, 15:23-15:30, 15:32-15:40, 15:42-15:47, 15:49-15:50, 15:53-15:54, 15:56-15:58, 15:60-15:74, 15:76-15:82, 15:85, 15:87, 15:89-15:90, 15:92-15:99, 15:101-15:104, 15:106, 15:108-15:110, 15:112-15:113, 15:115-15:122, 15:125-15:129, 15:131-15:135, 15:137-15:144, 15:146-15:150, 15:152-15:154, 15:156-15:161, 15:163-15:175, 15:177-15:178, 15:180-15:184, 15:187, 15:189-15:191, 18:15, 18:19, 18:21, 18:30, 27:04:01-27:04:03, 27:06, 27:10, 27:15, 27:18, 27:20-27:21, 27:24-27:25, 27:40, 27:54, 27:63, 35:11, 35:14:01-35:14:02, 35:21, 35:43-35:44, 35:58, 35:67, 35:79, 35:86, 35:96, 35:99, 37:07, 37:13, 39:18, 39:35-39:36, 40:05, 40:15-40:16, 40:23, 40:26, 40:28, 40:32, 40:51,

				40:95, 40:98, 44:76, 44:79, 46:01:01-46:05, 46:07N-46:08, 46:10, 46:12, 46:14-46:17, 46:20, 46:22, 48:05, 48:08, 48:15, 49:01:01-49:10, 50:01:01-50:02, 50:04-50:09, 51:01:01-51:04, 51:06- 51:07:02, 51:11N-51:14, 51:16- 51:18, 51:21-51:24:03, 51:26-51:30, 51:32-51:39, 51:41N, 51:43, 51:45- 51:46, 51:48-51:52, 51:55-51:72, 51:74-51:80, 51:82-51:92, 51:94- 51:95, 52:01:01-52:02, 52:04-52:09, 52:11-52:18, 52:20, 53:06, 53:08:01-53:08:02, 54:06, 54:20, 55:01:01-55:01:06, 55:03, 55:05, 55:09, 55:11, 55:14-55:15, 55:17, 55:21, 55:24-55:25, 55:28-55:29, 55:31, 55:33, 55:36, 55:38, 55:40, 56:03, 56:05:01-56:06, 56:21, 56:25, 57:09, 57:13, 57:22, 58:06, 58:08, 58:19, 78:01-78:03, 78:05-78:07
15	230 bp	1070 bp	*38:01:01- 38:02:02, 38:04, 38:06- 38:12, 38:15- 38:22	*07:16, 07:27, 07:37-07:38, 07:50, 07:75, 07:91, 13:14, 14:14, 15:68, 15:71, 15:175, 18:01:01, 18:01:03- 18:02, 18:05-18:15, 18:17N-18:24, 18:26-18:49, 27:01, 27:18, 27:23, 27:29, 27:44, 35:50, 35:84, 37:01:01-37:22, 39:05:01-39:05:02, 39:07-39:08, 39:11, 39:13:01- 39:13:02, 39:20, 39:37, 39:49, 39:55-39:56, 40:02:01-40:06:02, 40:08-40:09, 40:11, 40:13, 40:18- 40:20, 40:24, 40:26-40:29, 40:35, 40:37, 40:39-40:40, 40:44, 40:56, 40:64, 40:68, 40:70-40:71, 40:74- 40:75, 40:78, 40:82-40:83, 40:85- 40:86, 40:89-40:91, 40:93-40:99, 42:11, 48:01:01-48:21, 51:57, 53:21, 57:10
16¹³	220 bp, 350 bp, 425 bp	1070 bp	*38:11, 38:17, 38:19	*07:13, 07:27, 08:55, 39:03, 39:14, 39:24, 39:29, 39:37, 67:02

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*38 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*38 subtyping. In addition, wells number 2, 3, 6, 7, 8, 12 and 13 contain the primer pair giving rise to the shorter, 800 bp, internal positive control band in order to allow kit identification.

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

³For some HLA-B alleles complete 2nd 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 second exon are conserved within allelic groups.

⁴The B*38:17 and B*39:37 alleles give rise to identical amplification patterns with the HLA-B*38 primer set. These two alleles can be distinguished by the HLA-B low resolution and/or HLA-B*39 kits.

The B*38:11 and 38:19 alleles may can be distinguished by the different sizes of the specific PCR products generated by primer mix 16.

⁵Due to the sharing of sequence motifs between HLA-B alleles, non-HLA-B*38 alleles will be amplified by primer mixes 1 to 3, 5 to 10 and 12 to 16. In addition, the C*02:02:07 and C*05:01:06 alleles are amplified by primer mix 8.

⁶Short specific PCR fragments are less intense and not as sharp as longer specific bands.

⁷Primer solutions 6 and 7 may yield less specific PCR product than the other HLA-B*38 primer mixes.

⁸Primer mix 7: Specific PCR fragment of 160 bp in the B*38:03-38:04 and in the B*08:17, 08:38, 08:54, 15:03:01-15:03:03, 15:47, 15:49, 15:54, 15:61-15:62, 15:68-15:69, 15:74, 15:91, 15:98, 15:103, 15:123, 15:127, 15:131-15:132, 15:151, 15:156, 15:158, 15:173, 18:12, 37:01:01-37:07, 37:09-37:21, 39:02:01-39:02:02, 39:08, 39:13:01-39:13:02, 39:22-39:23, 39:49, 40:12, 42:11, 48:01:01-48:02:01, 48:03:01-48:05, 48:07-48:15, 48:17-48:22 and 52:16 alleles. Specific PCR fragment of 205 bp in the B*38:21 allele.

⁹Primer mix 8: Specific PCR fragment of 185 bp in the B*38:05 and in the B*14:02:01-14:02:02, 14:02:04-14:03, 14:04w, 14:05-14:06:02, 14:09, 14:11, 14:13, 14:15-14:18, 15:189, 35:26 and 39:04 and in the C*02:02:07, C*05:01:06 alleles. Specific PCR fragment of 230 bp in the B*38:15, 38:20 and 38:22 and in the B*35:35 and 39:42 alleles.

¹⁰Primer mix 9: Specific PCR fragment of 145 bp in the B*38:06-38:07 and in the B*44:06, 49:03, 51:01:01-51:24:03, 51:26-51:46, 51:48-51:53, 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 205 bp in the B*38:21 allele.

¹¹Primer mix 10: Specific PCR fragment of 90 bp in the B*38:07 and 38:12 and in the B*39:19:02 alleles. Specific PCR fragment of 145 bp in the B*38:16 allele.

¹²Primer mix 11: Specific PCR fragment of 90 bp in the B*38:13 allele. Specific PCR fragment of 145 bp in the B*38:08 and 38:18 alleles.

¹³Primer mix 16: Specific PCR fragment of 220 bp in the B* 38:19 and in the B*08:55, 39:03, 39:14, 39:24, 39:29 and 39:37 alleles. Specific PCR fragment of 350 bp in the B*38:11 and the B*07:13 and 67:02 alleles. Specific PCR fragment of 425 bp in the B*38:17 and the B*07:27 alleles.

‘w’, might be weakly amplified.

INTERPRETATION TABLE								
HLA-B*38 SSP subtyping								
Amplification patterns of the B*38:01 to 38:22 alleles								
	Well ⁶							
	1	2	3	4	5	6	7	8
Length of spec.	185	190	170	105	210	170	160	185
PCR product(s)							205	230
Length of int.	800	800	800	1070	1070	800	800	800
pos. control ¹								
5'-primer(s) ²	103	142	142	246	142	142	142	103
	5' -CCT 3'	5' -TCT 3'	5' -TCT 3'	5' -gAA 3'	5' -TCT 3'	5' -TCT 3'	5' -TCT 3'	5' -CCg 3'
							382	346
							5' -TgC 3'	5' -ggC 3'
								355
								5' -TCA 3'
								363
								5' -AAT 3'
3'-primer(s) ³	246	292	272	309	309	272	259	246
	5' -TAT 3'	5' -gTA 3'	5' -TgC 3'	5' -ATC 3'	5' -gTg 3'	5' -Tgg 3'	5' -CTC 3'	5' -TAT 3'
	246	292					544	544
	5' -TAT 3'	5' -gTA 3'					5' -ggT 3'	5' -ggT 3'
		292						
		5' -gTA 3'						
Well No.	1	2	3	4	5	6	7	8
HLA-B allele								
*38:01:01, 38:01:03-38:01:04	1	2	3	4				
*38:01:02	1	2	3	4				
*38:02:01-38:02:02	1	2	3		5			
*38:03	1				5	6	7	
*38:04		2	3		5		7	
*38:05		2	3	4				8
*38:06		2						
*38:07	1	2						
*38:08	1	2	3		5			
*38:09	1	2	3	4				
*38:10	1	2	3	4				
*38:11, 38:19 ⁴	1	2	3	4				
*38:12	1	2	3	4				
*38:13	1		3	4				
*38:14	1		3	4				
*38:15	1	2	3		5			8
*38:16	1			4				
Well No.	1	2	3	4	5	6	7	8

INTERPRETATION TABLE							
HLA-B*38 SSP subtyping							
Amplification patterns of the B*38:01 to 38:22 alleles							
Well ⁶							
9	10	11	12	13	14	15	16
145	90	90	90	175	170	230	220
205	145	145					350
							425
1070	1070	1070	800	800	1070	1070	1070
206	142	246	246	412	527	103	44
5'-gAC 3'	5'-TCA 3'	5'-gAA 3'	5'-gAA 3'	5'-ATA 3'	5'-TgA 3'	5'-CCT 3'	5'-ggC 3'
382	193	463	483			103	363
5'-TgC 3'	5'-CCA 3'	5'-TgA 3'	5'-gAg 3'			5'-CCT 3'	5'-AgC 3'
	206	660					
	5'-gAC 3'	5'-gAA 3'					
309	246	296	292	544	3 rd I	292	226
5'-ATC 3'	5'-TAT 3'	5'-CTA 3'	5'-gTC 3'	5'-ggT 3'	5'-TAT 3'	5'-gTA 3'	5'-CAC 3'
544		559	292			292	301
5'-ggT 3'		5'-CAT 3'	5'-gTC 3'			5'-gTA 3'	5'-gTC 3'
		774	544			292	544
		5'-ggT 3'	5'-ggT 3'			5'-gTA 3'	5'-ggT 3'
9	10	11	12	13	14	15	16
				13		15	
						15	
				13		15	
			12	13			
				13		15	
				13			
9				13		15	
9	10			13		15	
		11				15	
			12	13		15	
					14	15	
				13		15	16
	10			13		15	
		11		13			
			12	13			
				13		15	
	10			13		15	
9	10	11	12	13	14	15	16

Lot No.: **42K**

Lot-specific information

www.olerup-ssp.com

Length of spec.	185	190	170	105	210	170	160	185
PCR product(s)							205	230
Well No.	1	2	3	4	5	6	7	8
*38:17, 39:37 ⁵	1	2	3					
*38:18	1	2	3		5			
*38:20	1	2	3	4				8
*38:21	1	2	3	4			7	
*38:22	1	2	3	4				8
*07:02:01-07:12, 07:14-07:15, 07:17-07:24, 07:26, 07:28-07:36, 07:39-07:47, 07:49N, 07:52-07:68, 07:70-07:74, 07:76-07:84, 07:86-07:90, 07:92-07:99, 08:06, 08:20, 08:53, 13:16, 13:20, 13:31, 15:01:01:01- 15:01:04, 15:01:06-15:02:04, 15:04, 15:06- 15:08, 15:11:01-15:17:02, 15:19, 15:21, 15:24-15:28, 15:30, 15:32-15:36, 15:38:01- 15:40, 15:42-15:46, 15:50, 15:53, 15:56- 15:58, 15:60, 15:63, 15:65-15:67, 15:70, 15:73, 15:76-15:79N, 15:81-15:82, 15:85, 15:87, 15:89, 15:92, 15:94N-15:97, 15:101- 15:102, 15:104, 15:106, 15:109-15:110, 15:112-15:113, 15:116-15:118, 15:120- 15:122, 15:125-15:126, 15:128-15:129, 15:135, 15:137-15:144, 15:146-15:150, 15:152, 15:154, 15:157, 15:159-15:160,								
15:163-15:172, 15:174, 15:177-15:178, 15:180-15:184, 15:187, 15:190N-15:191, 27:04:01-27:04:03, 27:06, 27:10, 27:15, 27:20-27:21, 27:24-27:25, 27:40, 27:54, 27:63, 35:11, 35:14:01-35:14:02, 35:21, 35:43-35:44, 35:58, 35:67, 35:79, 35:86, 35:96, 35:99, 40:15-40:16, 40:23, 40:32, 40:51, 44:76, 44:79, 46:01:01-46:05, 46:07N- 46:08, 46:10, 46:12, 46:14-46:17, 46:20, 46:22, 49:01:01-49:02, 49:04-49:10, 50:01:01-50:02, 50:04-50:09, 51:78, 52:02, 52:20, 54:06, 54:20, 55:01:01-55:01:06, 55:03, 55:05, 55:09, 55:11, 55:14-55:15, 55:17, 55:21, 55:24-55:25, 55:28-55:29, 55:31, 55:33, 55:36, 55:38, 55:40, 56:03, 56:05:01-56:06, 56:21, 56:25, 57:09, 57:13, 57:22, 78:01-78:03, 78:05-78:07								
Well No.	1	2	3	4	5	6	7	8

Lot No.: **42K**

Lot-specific information

www.olerup-ssp.com

145	90	90	90	175	170	230	220	Length of spec.
205	145	145					350	PCR product(s)
							425	
9	10	11	12	13	14	15	16	Well No.
				13		15	16	*38:17, 39:37 ⁵
		11		13		15		*38:18
				13		15		*38:20
9				13		15		*38:21
						15		*38:22
					14			*07:02:01-07:12, 07:14-07:15, 07:17-07:24, 07:26, 07:28-07:36, 07:39-07:47, 07:49N, 07:52-07:68, 07:70-07:74, 07:76-07:84, 07:86-07:90, 07:92-07:99, 08:06, 08:20, 08:53, 13:16, 13:20, 13:31, 15:01:01-01- 15:01:04, 15:01:06-15:02:04, 15:04, 15:06- 15:08, 15:11:01-15:17:02, 15:19, 15:21, 15:24-15:28, 15:30, 15:32-15:36, 15:38:01- 15:40, 15:42-15:46, 15:50, 15:53, 15:56- 15:58, 15:60, 15:63, 15:65-15:67, 15:70, 15:73, 15:76-15:79N, 15:81-15:82, 15:85, 15:87, 15:89, 15:92, 15:94N-15:97, 15:101- 15:102, 15:104, 15:106, 15:109-15:110, 15:112-15:113, 15:116-15:118, 15:120- 15:122, 15:125-15:126, 15:128-15:129, 15:135, 15:137-15:144, 15:146-15:150, 15:152, 15:154, 15:157, 15:159-15:160,
					14			15:163-15:172, 15:174, 15:177-15:178, 15:180-15:184, 15:187, 15:190N-15:191, 27:04:01-27:04:03, 27:06, 27:10, 27:15, 27:20-27:21, 27:24-27:25, 27:40, 27:54, 27:63, 35:11, 35:14:01-35:14:02, 35:21, 35:43-35:44, 35:58, 35:67, 35:79, 35:86, 35:96, 35:99, 40:15-40:16, 40:23, 40:32, 40:51, 44:76, 44:79, 46:01:01-46:05, 46:07N- 46:08, 46:10, 46:12, 46:14-46:17, 46:20, 46:22, 49:01:01-49:02, 49:04-49:10, 50:01:01-50:02, 50:04-50:09, 51:78, 52:02, 52:20, 54:06, 54:20, 55:01:01-55:01:06, 55:03, 55:05, 55:09, 55:11, 55:14-55:15, 55:17, 55:21, 55:24-55:25, 55:28-55:29, 55:31, 55:33, 55:36, 55:38, 55:40, 56:03, 56:05:01-56:06, 56:21, 56:25, 57:09, 57:13, 57:22, 78:01-78:03, 78:05-78:07
9	10	11	12	13	14	15	16	Well No.

Lot No.: **42K**

Lot-specific information

www.olerup-ssp.com

Length of spec.	185	190	170	105	210	170	160	185
PCR product(s)							205	230
Well No.	1	2	3	4	5	6	7	8
*07:13								
*07:16, 07:37-07:38, 07:75, 07:91		2						
*07:27		2				6		
*07:50, 18:15, 18:19, 18:21, 18:30		2				6		
*07:69, 07:85, 14:02:03			3					
*08:02					5			
*08:03, 08:23, 35:25		2						
*08:04, 18:01:02, 18:03						6		
*08:17						6	7	
*08:38							7	
*08:54, 15:91, 15:123, 15:151, 40:12, 48:22		2				6	7	
*08:55, 67:02								
*13:14, 18:29, 27:01, 27:23, 27:29, 27:44, 35:50, 35:84, 37:22, 40:02:01-40:04, 40:06:01:01-40:06:02, 40:08-40:09, 40:11, 40:13, 40:18-40:20, 40:24, 40:27, 40:29, 40:35, 40:37, 40:39-40:40, 40:44, 40:56, 40:64, 40:68, 40:70-40:71, 40:74-40:75, 40:78, 40:82-40:83, 40:85-40:86, 40:89-40:91, 40:93-40:94, 40:96-40:97, 40:99, 48:02:02, 57:10								
*14:01, 14:07N-14:08, 14:10, 14:12, 39:36	1		3					
*14:02:01-14:02:02, 14:02:04-14:03, 14:05-14:06:02, 14:09, 14:11, 14:13, 14:15-14:17			3					8
*14:04			3					W
*14:14	1	2	3					
*14:18		2	3					8
*15:03:01-15:03:03, 15:47, 15:54, 15:62, 15:69, 15:98, 15:103, 15:127, 15:131-15:132, 15:156, 15:158, 15:173, 52:16		2				6	7	
*15:09-15:10:02, 15:18:01-15:18:04, 15:23, 15:37, 15:72, 15:80, 15:90, 15:93, 15:99, 15:108, 15:119, 15:133-15:134, 15:153, 15:161		2	3					
*15:29		2						
*15:49, 15:74		2					7	
Well No.	1	2	3	4	5	6	7	8

Lot No.: **42K**

Lot-specific information

www.olerup-ssp.com

145	90	90	90	175	170	230	220	Length of spec.
205	145	145					350	PCR product(s)
							425	
9	10	11	12	13	14	15	16	Well No.
					14		16	*07:13
					14	15		*07:16, 07:37-07:38, 07:75, 07:91
					14	15	16	*07:27
					14	15		*07:50, 18:15, 18:19, 18:21, 18:30
					14			*07:69, 07:85, 14:02:03
								*08:02
								*08:03, 08:23, 35:25
								*08:04, 18:01:02, 18:03
								*08:17
								*08:38
								*08:54, 15:91, 15:123, 15:151, 40:12, 48:22
				13			16	*08:55, 67:02
						15		*13:14, 18:29, 27:01, 27:23, 27:29, 27:44, 35:50, 35:84, 37:22, 40:02:01-40:04, 40:06:01:01-40:06:02, 40:08-40:09, 40:11, 40:13, 40:18-40:20, 40:24, 40:27, 40:29, 40:35, 40:37, 40:39-40:40, 40:44, 40:56, 40:64, 40:68, 40:70-40:71, 40:74-40:75, 40:78, 40:82-40:83, 40:85-40:86, 40:89-40:91, 40:93-40:94, 40:96-40:97, 40:99, 48:02:02, 57:10
			12		14			*14:01, 14:07N-14:08, 14:10, 14:12, 39:36
			12		14			*14:02:01-14:02:02, 14:02:04-14:03, 14:05-14:06:02, 14:09, 14:11, 14:13, 14:15-14:17
			12		14			*14:04
					14	15		*14:14
					14			*14:18
					14			*15:03:01-15:03:03, 15:47, 15:54, 15:62, 15:69, 15:98, 15:103, 15:127, 15:131-15:132, 15:156, 15:158, 15:173, 52:16
					14			*15:09-15:10:02, 15:18:01-15:18:04, 15:23, 15:37, 15:72, 15:80, 15:90, 15:93, 15:99, 15:108, 15:119, 15:133-15:134, 15:153, 15:161
					14			*15:29
					14			*15:49, 15:74
9	10	11	12	13	14	15	16	Well No.

Lot No.: **42K**

Lot-specific information

www.olerup-ssp.com

Length of spec.	185	190	170	105	210	170	160	185
PCR product(s)							205	230
Well No.	1	2	3	4	5	6	7	8
*15:51-15:52, 15:114, 15:124, 15:176, 15:186		2	3					
*15:61						6	7	
*15:64		2				6		
*15:68, 37:07, 37:13, 48:05, 48:08, 48:15		2				6	7	
*15:71, 15:175, 27:18, 40:05, 40:26, 40:28, 40:95, 40:98								
*15:115		2	3		5			
*15:189								8
*18:01:01, 18:01:03-18:02, 18:05-18:06, 18:08, 18:10-18:11, 18:13-18:14, 18:17N-18:18, 18:20, 18:22-18:24, 18:26-18:28, 18:31-18:32, 18:34-18:49, 37:08, 48:16		2				6		
*18:07:01-18:07:02, 48:06		2						
*18:09		2			5	6		
*18:12, 37:01:01-37:06, 37:09, 37:11-37:12, 37:14-37:20, 39:49, 42:11, 48:01:01-48:02:01, 48:03:01-48:04, 48:07, 48:09-48:14, 48:17-48:21		2				6	7	
*18:25		2				6		
*18:33		2	3					
*35:26, 35:35, C*02:02:07, C*05:01:06								8
*37:10		2			5	6	7	
*37:21		2					7	
*39:01:01:01-39:01:01:02L, 39:01:03, 39:01:05-39:01:08, 39:01:10-39:01:11, 39:06:01-39:06:02, 39:09, 39:26-39:28, 39:38Q, 39:40N-39:41, 39:44, 39:46, 39:48, 39:51, 39:53, 39:57	1		3					
*39:01:04	1		3					
*39:01:09, 39:19:01			3					
*39:02:01	1					6	7	
*39:02:02, 39:23						6	7	
*39:03, 39:14, 39:24	1		3					
*39:04			3					8
*39:05:01-39:05:02, 39:11, 39:56	1	2	3					
*39:07, 39:55	1	2	3					
*39:08	1	2				6	7	
Well No.	1	2	3	4	5	6	7	8

Lot No.: **42K**

Lot-specific information

www.olerup-ssp.com

145	90	90	90	175	170	230	220	Length of spec.
205	145	145					350	PCR product(s)
							425	
9	10	11	12	13	14	15	16	Well No.
								*15:51-15:52, 15:114, 15:124, 15:176, 15:186
					14			*15:61
					14			*15:64
					14	15		*15:68, 37:07, 37:13, 48:05, 48:08, 48:15
					14	15		*15:71, 15:175, 27:18, 40:05, 40:26, 40:28, 40:95, 40:98
					14			*15:115
			12		14			*15:189
						15		*18:01:01, 18:01:03-18:02, 18:05- 18:06, 18:08, 18:10-18:11, 18:13- 18:14, 18:17N-18:18, 18:20, 18:22- 18:24, 18:26-18:28, 18:31-18:32, 18:34-18:49, 37:08, 48:16
						15		*18:07:01-18:07:02, 48:06
						15		*18:09
						15		*18:12, 37:01:01-37:06, 37:09, 37:11- 37:12, 37:14-37:20, 39:49, 42:11, 48:01:01-48:02:01, 48:03:01-48:04, 48:07, 48:09-48:14, 48:17-48:21
								*18:25
						15		*18:33
								*35:26, 35:35, C*02:02:07, C*05:01:06
						15		*37:10
						15		*37:21
			12	13				*39:01:01:01-39:01:01:02L, 39:01:03, 39:01:05-39:01:08, 39:01:10- 39:01:11, 39:06:01-39:06:02, 39:09, 39:26-39:28, 39:38Q, 39:40N-39:41, 39:44, 39:46, 39:48, 39:51, 39:53, 39:57
				13				*39:01:04
				13				*39:01:09, 39:19:01
			12	13				*39:02:01
				13				*39:02:02, 39:23
			12	13			16	*39:03, 39:14, 39:24
			12	13				*39:04
				13		15		*39:05:01-39:05:02, 39:11, 39:56
						15		*39:07, 39:55
				13		15		*39:08
9	10	11	12	13	14	15	16	Well No.

Lot No.: **42K**

Lot-specific information

www.olerup-ssp.com

Length of spec.	185	190	170	105	210	170	160	185
PCR product(s)							205	230
Well No.	1	2	3	4	5	6	7	8
*39:10, 39:16, 67:01:02								
*39:12, 39:45			3					
*39:13:01-39:13:02		2				6	7	
*39:15, 39:25N, 39:30, 39:32-39:34, 39:43, 39:47, 39:50	1		3					
*39:18, 39:35	1		3					
*39:19:02	1		3					
*39:20		2						
*39:22	1		3				7	
*39:29	1		3					
*39:31	w		3					
*39:39	1					6		
*39:42	1		3					8
*39:52, 39:54, 67:01:01	1							
*44:06, 51:05, 51:08-51:10, 51:15, 51:19-51:20, 51:31, 51:40, 51:42, 51:44N, 51:53, 51:73, 51:81, 51:93, 52:03, 52:10, 52:19, 53:01:01-53:02, 53:04-53:05, 53:07, 53:10, 53:14- 53:20, 53:22-53:23, 58:01:01-58:02, 58:04-58:05, 58:07, 58:09-58:11, 58:13-58:16, 58:18, 58:21-58:28								
*49:03, 51:01:01-51:04, 51:06- 51:07:02, 51:11N-51:14, 51:16-51:18, 51:21-51:24:03, 51:26-51:30, 51:32- 51:39, 51:41N, 51:43, 51:45-51:46, 51:48-51:52, 51:55-51:56, 51:58- 51:72, 51:74-51:77, 51:79-51:80, 51:82-51:92, 51:94-51:95, 52:01:01- 52:01:05, 52:04-52:09, 52:11-52:15, 52:17-52:18, 53:06, 53:08:01- 53:08:02, 58:06, 58:08, 58:19								
*51:57								
*53:21								
*58:12		2						
*58:20								
HLA-B allele								
Well No.	1	2	3	4	5	6	7	8

Lot No.: **42K**

Lot-specific information

www.olerup-ssp.com

145	90	90	90	175	170	230	220	Length of spec.
205	145	145					350	PCR product(s)
							425	
9	10	11	12	13	14	15	16	Well No.
				13				*39:10, 39:16, 67:01:02
			12	13				*39:12, 39:45
				13		15		*39:13:01-39:13:02
			12					*39:15, 39:25N, 39:30, 39:32-39:34, 39:43, 39:47, 39:50
			12	13	14			*39:18, 39:35
	10		12	13				*39:19:02
				13		15		*39:20
			12	13				*39:22
			12				16	*39:29
			12	13				*39:31
			12	13				*39:39
			12	13				*39:42
			12	13				*39:52, 39:54, 67:01:01
9								*44:06, 51:05, 51:08-51:10, 51:15, 51:19-51:20, 51:31, 51:40, 51:42, 51:44N, 51:53, 51:73, 51:81, 51:93, 52:03, 52:10, 52:19, 53:01:01-53:02, 53:04-53:05, 53:07, 53:10, 53:14- 53:20, 53:22-53:23, 58:01:01-58:02, 58:04-58:05, 58:07, 58:09-58:11, 58:13-58:16, 58:18, 58:21-58:28
9					14			*49:03, 51:01:01-51:04, 51:06- 51:07:02, 51:11N-51:14, 51:16-51:18, 51:21-51:24:03, 51:26-51:30, 51:32- 51:39, 51:41N, 51:43, 51:45-51:46, 51:48-51:52, 51:55-51:56, 51:58- 51:72, 51:74-51:77, 51:79-51:80, 51:82-51:92, 51:94-51:95, 52:01:01- 52:01:05, 52:04-52:09, 52:11-52:15, 52:17-52:18, 53:06, 53:08:01- 53:08:02, 58:06, 58:08, 58:19
9					14	15		*51:57
9						15		*53:21
9								*58:12
9				13				*58:20
								HLA-B allele
9	10	11	12	13	14	15	16	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*38 subtyping. In addition, wells number 2, 3, 6, 7, 8, 12 and 13 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 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, or in the 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 B*38:11 and 38:19 alleles may can be distinguished by the different sizes of the specific PCR products generated by primer mix 16.

⁵The B*38:17 and B*39:37 alleles give rise to identical amplification patterns with the HLA-B*38 primer set. These two alleles can be distinguished by the HLA-B low resolution and/or HLA-B*39 kits.

⁶Primer mix 7: Specific PCR fragment of 160 bp in the B*38:03-38:04 and in the B*08:17, 08:38, 08:54, 15:03:01-15:03:03, 15:47, 15:49, 15:54, 15:61-15:62, 15:68-15:69, 15:74, 15:91, 15:98, 15:103, 15:123, 15:127, 15:131-15:132, 15:151, 15:156, 15:158, 15:173, 18:12, 37:01:01-37:07, 37:09-37:21, 39:02:01-39:02:02, 39:08, 39:13:01-39:13:02, 39:22-39:23, 39:49, 40:12, 42:11, 48:01:01-48:02:01, 48:03:01-48:05, 48:07-48:15, 48:17-48:22 and 52:16 alleles. Specific PCR fragment of 205 bp in the B*38:21 allele.

Primer mix 8: Specific PCR fragment of 185 bp in the B*38:05 and in the B*14:02:01-14:02:02, 14:02:04-14:03, 14:04w, 14:05-14:06:02, 14:09, 14:11, 14:13, 14:15-14:18, 15:189, 35:26 and 39:04 and in the C*02:02:07, C*05:01:06 alleles. Specific PCR fragment of 230 bp in the B*38:15, 38:20 and 38:22 and in the B*35:35 and 39:42 alleles.

Primer mix 9: Specific PCR fragment of 145 bp in the B*38:06-38:07 and in the B*44:06, 49:03, 51:01:01-51:24:03, 51:26-51:46, 51:48-51:53, 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 205 bp in the B*38:21 allele.

Primer mix 10: Specific PCR fragment of 90 bp in the B*38:07 and 38:12 and in the B*39:19:02 alleles. Specific PCR fragment of 145 bp in the B*38:16 allele.

Primer mix 11: Specific PCR fragment of 90 bp in the B*38:13 allele. Specific PCR fragment of 145 bp in the B*38:08 and 38:18 alleles.

Primer mix 16: Specific PCR fragment of 220 bp in the B* 38:19 and in the B*08:55, 39:03, 39:14, 39:24, 39:29 and 39:37 alleles. Specific PCR fragment of 350 bp in the B*38:11 and the B*07:13 and 67:02 alleles. Specific PCR fragment of 425 bp in the B*38:17 and the B*07:27 alleles.

'w', might be weakly amplified.

CERTIFICATE OF ANALYSIS

Olerup SSP® HLA-B*38 SSP

Product number: 101.565-12u – without *Taq* polymerase
Lot number: 42K
Expiry date: 2012-September-01
Number of tests: 12
Number of wells per test: 16

Well specifications:

Well No.	Production No.	Well No.	Production No.
1	2010-759-01	9	2010-759-09
2	2010-759-02	10	2010-759-10
3	2010-759-03	11	2010-759-11
4	2010-759-04	12	2010-759-12
5	2010-759-05	13	2010-759-13
6	2010-759-06	14	2010-759-14
7	2010-759-07	15	2010-759-15
8	2010-759-08	16	2010-759-16

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 10, 11 and 16 were available. The specificities of the primers in these primer solutions were tested by separately adding one additional 5'-primer, respectively one or more additional 3'-primer. In primer solutions 7, 8, 9 and 11, one of the 5'-primers was not possible to test, and in primer solution 11 two of the 3'-primers were not possible to test. Additional primers in primer solutions 8 and 9 were tested by separately adding one or two 5'-primers or 3'-primers.

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

Date of approval: 2010-September-03

Approved by:

Quality Control, Supervisor

Lot No.: **42K**

Lot-specific information

www.olerup-ssp.com

Declaration of Conformity

Product name: Olerup SSP® HLA-B*38
Product number: 101.565-12u
Lot number: 42K

Intended use: HLA-B*38 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-September-03

Olle Olerup
Managing Director

Lot No.: **42K**

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**.