

***Olerup SSP*[®] HLA-B*49**

Product number:	101.547-06u – without <i>Taq</i> polymerase
Lot number:	74M
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. 74M.

CHANGES COMPARED TO THE PREVIOUS *OLERUP SSP*[®] HLA-B*49 LOT.

The HLA-B*49 specificity and interpretation tables have been updated for the HLA-B alleles described since the previous *Olerup SSP*[®] HLA-B*49 lot was made (**Lot No. 86K**).

The amplification patterns for some rare HLA-B*49 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	Primer added for the B*49:20 allele.
8	-	Added	Primer added for the B*49:19N allele.
10	-	Added	Primer added for the B*49:16 allele.
14	-	Added	Primers added for the B*49:17 and B*49:19N alleles.
15	-	Added	Primer added for the B*49:17 allele.
16	Added	Added	Primer pair added for the B*49:18 allele.

PRODUCT DESCRIPTION

HLA-B*49 SSP typing

CONTENT

The primer set contains 5'- and 3'-primers for identifying the B*49:01 to B*49:20 alleles.

PLATE LAYOUT

Each HLA-B*49 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*49' in silver/gray ink.

Well No. 1 is marked with the Lot No. '74M'.

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*49 SSP subtypings will be influenced by two B*07, four B*08, most B*13, several B*15, two B*18, three B*27, six B*35, the B*37:10, the B*38:30, nine B*39, several B*40, nine B*41, the B*42:04, most B*44, the B*45, two B*46, the B*47, the B*50, most B*51, the B*52, the B*53:22, most B*54, most B*55, most B*56, four B*57, three B*58, the B*59, the B*73 and the B*78 alleles when present on the other haplotype.

UNIQUELY IDENTIFIED ALLELES

All the HLA-B*49, i.e. **B*49:01 to B*49:20**, recognized by the HLA Nomenclature Committee in October 2011¹ will be amplified by the primers in the HLA-B*49 SSP kit.

The HLA-B*49 subtyping kit cannot distinguish the B*49:01:01 to B*49:01:03 alleles.

The B*49:08 and 49:16 alleles can be distinguished by the different sizes of the specific PCR products generated by primer mix 10.

The B*49:13 and 49:14 alleles can be distinguished by the different sizes of the specific PCR products generated by primer mix 15.

¹HLA-B alleles listed on the IMGT/HLA web page 2011-October-10, release 3.6.0, www.ebi.ac.uk/imgt/hla.

RESOLUTION IN HOMO- AND HETEROZYGOTES

A total of 22 alleles generate 18 amplification patterns that can be combined in 171 homozygous and heterozygous combinations. 115 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.

+++---+	-----	*49:02, *49:04 = *49:02, *49:20
+++---+	-----+	*49:02, *49:15 = *49:02, *49:18
+++---+	-----	*49:01:01, *49:02 = *49:02, *49:06
+++---+	-----	*49:03, *49:06 = *49:06, *49:09
+++---+	-----	*49:04, *49:06 = *49:06, *49:20
+++---+	-----+	*49:06, *49:15 = *49:06, *49:18
+++---+	-----	*49:01:01, *49:06 = *49:06, *49:06
+++---+	-----	*49:03, *49:05 = *49:05, *49:09
+++---+	-----	*49:03, *49:04 = *49:03, *49:20 = *49:04, *49:09 = *49:09, *49:20
+++---+	-----+	*49:03, *49:19N = *49:09, *49:19N
+++---+	-----	*49:03, *49:07 = *49:07, *49:09
+++---+	-----	*49:03, *49:08 = *49:08, *49:09
+++---+	-----	*49:03, *49:10 = *49:09, *49:10
+++---+	-----	*49:03, *49:11 = *49:09, *49:11
+++---+	-----+	*49:03, *49:17 = *49:09, *49:17
+++---+	-----	*49:03, *49:12 = *49:09, *49:12
+++---+	-----	*49:03, *49:13 = *49:09, *49:13
+++---+	-----+	*49:03, *49:15 = *49:03, *49:18 = *49:09, *49:15 = *49:09, *49:18
+++---+	-----	*49:01:01, *49:03 = *49:01:01, *49:09 = *49:03, *49:09 = *49:09, *49:09
+++---+	-----	*49:04, *49:19N = *49:05, *49:12 = *49:05, *49:19N = *49:19N, *49:20
+++---+	-----	*49:01:01, *49:05 = *49:05, *49:20
+++---+	-----	*49:04, *49:07 = *49:07, *49:20
+++---+	-----	*49:04, *49:08 = *49:08, *49:20
+++---+	-----	*49:04, *49:10 = *49:10, *49:20
+++---+	-----	*49:04, *49:11 = *49:11, *49:20
+++---+	-----	*49:04, *49:17 = *49:17, *49:20
+++---+	-----	*49:04, *49:12 = *49:12, *49:20
+++---+	-----	*49:04, *49:13 = *49:13, *49:20
+++---+	-----	*49:04, *49:15 = *49:15, *49:20 = *49:18, *49:20
+++---+	-----	*49:01:01, *49:04 = *49:01:01, *49:20 = *49:04, *49:20 = *49:20, *49:20
+++---+	-----	*49:13, *49:19N = *49:17, *49:19N
+++---+	-----	*49:15, *49:19N = *49:18, *49:19N
+++---+	-----	*49:01:01, *49:19N = *49:12, *49:19N = *49:19N, *49:19N
+++---+	-----	*49:07, *49:15 = *49:07, *49:18
+++---+	-----	*49:01:01, *49:07 = *49:07, *49:07
+++---+	-----	*49:08, *49:15 = *49:08, *49:18
+++---+	-----	*49:01:01, *49:08 = *49:08, *49:08
+++---+	-----	*49:10, *49:15 = *49:10, *49:18
+++---+	-----	*49:01:01, *49:10 = *49:10, *49:10
+++---+	-----	*49:11, *49:15 = *49:11, *49:18
+++---+	-----	*49:01:01, *49:11 = *49:11, *49:11

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+----+-- - - - - - + + + *49:15, *49:17 = *49:17, *49:18
+----+-- - - - - - + + - *49:01:01, *49:17 = *49:12, *49:13 = *49:12, *49:17 = *49:13,
*49:17 = *49:17, *49:17
+----+-- - - - - - + - + *49:12, *49:15 = *49:12, *49:18
+----+-- - - - - - + - - *49:01:01, *49:12 = *49:12, *49:12
+----+-- - - - - - + + + *49:13, *49:15 = *49:13, *49:18
+----+-- - - - - - + - - *49:01:01, *49:13 = *49:13, *49:13
+----+-- - - - - - + *49:01:01, *49:15 = *49:01:01, *49:18 = *49:15, *49:15 =
*49:15, *49:18
+-----+ - - - - - *49:04, *49:05 = *49:05, *49:05

*49:01:01 = *49:01:01-49:01:03

*49:08 = *49:08 and 49:16

*49:13 = *49:13 and *49:14

SPECIFICITY TABLE

HLA-B*49 SSP subtyping

Specificities and sizes of the PCR products of the 16 primer mixes used for HLA-B*49 SSP subtyping

Primer Mix	Size of spec. PCR product ¹	Size of control band ²	Amplified HLA-B*49 alleles ³	Other amplified HLA-B alleles ⁴
1	145 bp	800 bp	*49:01:01-49:01:03, 49:04-49:20	*40:13, 40:19, 40:109, 40:117, 44:18, 44:25, 44:50, 44:95, 51:112, 57:45, 57:51
2^{6,8}	145 bp, 255 bp	1070 bp	*49:02, 49:06	*13:23, 18:09, 27:01, 37:10, 40:47, 40:96, 40:157, 44:15, 44:55, 44:103, 58:13
3	145 bp	1070 bp	*49:02	*40:47, 40:96, 40:110, 40:157, 44:02:01:01-44:02:12, 44:02:14-44:02:18, 44:02:20-44:05:02, 44:07, 44:10, 44:12-44:17, 44:19N-44:24, 44:26-44:39, 44:41:01-44:43:02, 44:45, 44:47-44:49, 44:51-44:56N, 44:58N-44:59, 44:61N-44:74, 44:76-44:82, 44:84-44:89, 44:91-44:94, 44:96-44:128, 44:132-44:133, 44:135-44:137, 47:04
4⁹	170 bp, 205 bp	1070 bp	*49:03, 49:09	*13:15, 18:04, 40:01:11, 40:58, 44:02:10, 44:34, 51:07:01, 51:62, 51:106, 52:01:02, 52:01:04, 52:01:09, 52:02-52:03, 52:09, 52:21, 52:25
5⁵	105 bp	1070 bp	*49:01:01-49:03, 49:06-49:17, 49:19N-49:20	*07:78, 13:02:01-13:03, 13:08Q-13:09, 13:14-13:16, 13:18-13:19, 13:27, 13:30-13:34, 13:37-13:38, 13:40-13:42, 13:44-13:45, 13:48-13:49N, 15:42, 35:60, 44:15, 44:18, 45:01, 45:03-45:08, 45:10-45:13, 46:11, 46:18, 50:01:01-50:02, 50:04-50:08, 50:10-50:11, 50:13, 50:15, 51:15, 52:25, 54:01:01-54:03, 54:05N, 54:07-54:08N, 54:10, 54:12-54:13, 54:16-54:24, 55:01:01-55:01:06, 55:01:08-55:03, 55:05, 55:07, 55:09-55:12, 55:15-55:16, 55:18-55:19, 55:21-55:22, 55:24-55:26, 55:29-55:31, 55:33-55:38, 55:40-55:41, 55:43, 55:45-55:48, 55:50, 55:52, 55:54, 56:01:01-56:01:04, 56:07-56:08, 56:13-56:14, 56:16-56:17, 56:19N-56:20:02, 56:23-56:30, 59:01:01:01-59:01:01:02, 59:04-59:05
6⁷	160 bp	1070 bp	*49:01:01-49:03, 49:06-49:17,	*13:01:01-13:03, 13:06-13:09, 13:11-13:12, 13:14-13:17, 13:19-13:20, 13:22:01-13:23, 13:25, 13:27-13:30, 13:32-13:34, 13:36-13:40, 13:42-13:45, 13:47-13:50, 13:52,

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			49:19N- 49:20	15:42, 15:86, 15:224, 35:60, 39:17, 40:48, 40:71, 44:10, 46:11, 46:18, 50:01:01-50:02, 50:04-50:08, 50:10-50:13, 50:15, 51:15, 51:62, 51:106, 52:25, 54:01:01-54:03, 54:05N, 54:07-54:08N, 54:12-54:13, 54:17-54:19, 54:21-54:24, 55:01:01-55:03, 55:05, 55:07, 55:10-55:12, 55:15-55:16, 55:18-55:19, 55:22, 55:24-55:26, 55:29-55:31, 55:33-55:36, 55:38-55:45, 55:47-55:48, 55:50, 55:53-55:54, 56:01:01-56:02, 56:04, 56:07-56:08, 56:10, 56:14, 56:16-56:17, 56:19N-56:20:02, 56:23-56:30, 59:01:01:01-59:01:01:02, 59:04-59:05
7^{5,10}	105 bp, 255 bp	1070 bp	*49:04- 49:05, 49:20	*13:04, 13:46, 15:04, 15:16:01-15:16:03, 15:67, 15:95, 15:137, 15:155, 15:222, 35:37, 39:06:01-39:06:02, 39:33-39:34, 39:50, 39:57, 39:62, 39:64, 40:86, 40:159, 44:15, 44:18, 44:20, 44:47, 44:100, 45:01-45:03, 45:05-45:07, 45:09, 45:11-45:13, 50:02, 50:09, 51:13:01-51:13:02, 51:23, 51:37, 51:63, 51:92, 51:97, 51:108, 52:14-52:15, 54:14, 55:13, 55:23, 55:32, 56:22, 59:03, 73:01-73:02
8^{5,11}	70 bp, 155 bp	1070 bp	*49:05, 49:19N	*07:78, 07:84, 08:09, 13:02:01-13:02:05, 13:02:07-13:04, 13:08Q-13:09, 13:14-13:16, 13:18-13:19, 13:27, 13:30-13:35, 13:37-13:38, 13:40-13:42, 13:44-13:49N, 15:04, 15:16:01-15:16:02, 15:42, 15:67, 15:83, 15:95, 15:137, 15:155, 15:222, 27:14, 27:81, 35:60, 39:06:01-39:06:02, 39:33-39:34, 39:50, 39:57, 39:62, 39:64, 40:06:01:01-40:06:04, 40:44, 40:53, 40:70, 40:75, 40:83, 40:86, 40:93, 40:95-40:96, 40:103, 40:109-40:110, 40:127, 40:131, 40:148, 40:159, 40:161-40:162, 40:165, 40:177, 41:01, 41:05-41:07, 41:09, 41:12, 41:14, 41:16-41:17, 42:04, 44:20, 44:47, 44:100, 46:11, 46:18, 51:01:01-51:01:18, 51:01:20-51:03, 51:05, 51:07:01-51:16, 51:18-51:24:04, 51:26-51:41N, 51:43-51:44N, 51:48-51:55, 51:57-51:58, 51:60-51:61, 51:63, 51:65-51:80, 51:82-51:93, 51:95-51:126, 52:01:01:01-52:27, 54:01:01-54:05N, 54:07-54:08N, 54:10-54:14, 54:16-54:24, 55:01:01-55:01:06, 55:01:08-55:03, 55:05, 55:07, 55:09-55:13, 55:15-55:26, 55:28-55:48, 55:50, 55:52-55:54, 56:01:01-56:01:04, 56:05:01-56:08, 56:13-56:17,

				56:19N-56:30, 58:08:01-58:08:02, 59:01:01:01-59:05, 73:01-73:02, 78:01:01- 78:07
9	245 bp	1070 bp	*49:07	*07:78, 07:84, 13:02:01-13:02:12, 13:08Q- 13:09, 13:14-13:16, 13:18-13:19, 13:27, 13:30-13:35, 13:37-13:38, 13:40-13:42, 13:44-13:45, 13:47, 13:49N, 27:14, 27:81, 39:50, 40:06:01:01-40:06:04, 40:44, 40:53, 40:70, 40:75, 40:83, 40:86, 40:93, 40:95- 40:96, 40:103, 40:109-40:110, 40:127, 40:131, 40:148, 40:159, 40:161-40:162, 40:165, 40:167, 40:177, 45:10, 51:10, 51:16, 51:31, 51:34, 51:82, 51:93, 52:08, 55:09, 55:22, 55:24, 73:01-73:02
10^{5,12}	80 bp, 250 bp	800 bp	*49:08, 49:16	
11	505 bp	1070 bp		*08:03, 08:52, 08:78, 38:30, 44:06, 44:18, 44:25, 44:95, 51:08, 51:20, 51:36, 51:44N, 51:97, 52:19, 53:22, 57:09, 57:24
12	135 bp	1070 bp	*49:10	*15:46, 15:53, 15:106, 35:47, 35:154, 40:10:01-40:10:02, 40:40, 40:49, 40:58, 40:110, 40:129, 40:164, 44:02:01:01- 44:05:03, 44:09-44:14, 44:16-44:17, 44:19N-44:39, 44:41:01-44:43:02, 44:45- 44:48, 44:50-44:54, 44:56N, 44:58N-44:59, 44:61N-44:80, 44:82, 44:84-44:102, 44:104- 44:110, 44:112-44:129, 44:132-44:133, 44:135-44:137, 47:01:01:01-47:08, 50:13, 57:45
13⁷	150 bp	1070 bp	*49:11	*13:01:01-13:03, 13:06-13:09, 13:11-13:12, 13:14-13:15, 13:17, 13:18 ^w , 13:19, 13:22:01-13:23, 13:25, 13:27-13:30, 13:32- 13:34, 13:36-13:40, 13:42-13:45, 13:47, 13:49N-13:50, 13:52, 15:86, 15:224, 35:60, 40:48, 40:71, 44:10, 46:11, 46:18, 51:15, 54:01:01-54:03, 54:05N, 54:07-54:08N, 54:10 ^w , 54:12-54:13, 54:17-54:19, 54:21- 54:24, 55:02:01-55:02:06, 55:07, 55:10, 55:12, 55:16, 55:18-55:19, 55:22, 55:26, 55:30, 55:34-55:35, 55:37 ^w , 55:39, 55:41- 55:43, 55:47-55:48, 55:50, 56:01:01-56:02, 56:04, 56:07-56:08, 56:10, 56:14, 56:16- 56:17, 56:19N-56:20:02, 56:23-56:24, 56:26-56:29, 59:01:01:01-59:01:01:02, 59:04-59:05

14 ¹³	155 bp, 190 bp	1070 bp	*49:12, 49:17, 49:19N	
15 ^{7,14}	160 bp, 190 bp, 290 bp	1070 bp	*49:13- 49:14, 49:17	
16 ^{5,15}	95 bp, 135 bp	1070 bp	*49:15, 49:18	*35:01:10, 35:04:02, 40:28, 50:14, 51:56:01- 51:56:02, 55:01:04

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*49 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*49 SSP subtyping. In addition, well number 10 contains the primer pair giving rise to the shorter, 800 bp, internal positive control band in order to allow kit identification.

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

³The B*49:08 and 49:16 alleles can be distinguished by the different sizes of the specific PCR products generated by primer mix 10.

The B*49:13 and 49:14 alleles can be distinguished by the different sizes of the specific PCR products generated by primer mix 15.

⁴Due to the sharing of sequence motifs between HLA-B alleles some non-HLA-B*49 alleles will be amplified by primer mixes 1 to 9, 11 to 13 and 16.

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

⁶Primer mix 2 may generate a false band of about 800 base pairs. This band should be disregarded when interpreting the HLA-B*49 SSP typings.

⁷Primer mixes 6, 13 and 15 have a tendency of giving rise to nonspecific amplifications.

⁸Primer mix 2: Specific PCR fragment of 145 bp in the B*49:06 and the B*58:13 alleles. Specific PCR fragment of 255 bp in the B*49:02 and in the B*13:23, 18:09, 27:01, 37:10, 40:47, 40:96, 40:157, 44:15, 44:55, 44:103 alleles.

⁹Primer mix 4: Specific PCR fragment of 170 bp in the B*49:03 and in the B*18:04, 40:01:11, 40:58, 44:02:10, 44:34, 51:07:01, 52:01:02, 52:01:04, 52:01:09, 52:02-52:03, 52:09 and 52:21 alleles. Specific PCR fragment of 205 bp in the B*49:09 and in the B*13:15, 51:62, 51:106 and 52:25 alleles.

¹⁰Primer mix 7: Specific PCR fragment of 105 bp in the B*49:04 and 49:05 and in the B*13:04, 13:46, 15:04, 15:16:01-15:16:03, 15:67, 15:95, 15:137, 15:155, 15:222, 35:37, 39:06:01-39:06:02, 39:33-39:34, 39:50, 39:57, 39:62, 39:64, 40:86, 40:159, 45:02, 45:09, 50:09, 51:13:01-51:13:02, 51:37, 51:63, 51:92, 51:97, 52:14, 54:14, 55:13, 55:23, 55:32, 56:22, 59:03 and 73:01-73:02 alleles. Specific PCR fragment of 255 bp in the B*49:20 and in the B*44:15,

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44:18, 44:20, 44:47, 44:100, 45:01-45:03, 45:05-45:07, 45:09, 45:11-45:13, 50:02, 51:23, 51:108 and 52:15 alleles.

¹¹Primer mix 8: Specific PCR fragment of 70 bp in the B*49:05 and in the B*07:78, 07:84, 08:09, 13:02:01-13:02:05, 13:02:07-13:04, 13:08Q-13:09, 13:14-13:16, 13:18-13:19, 13:27, 13:30-13:35, 13:37-13:38, 13:40-13:42, 13:44-13:49N, 15:04, 15:16:01-15:16:02, 15:42, 15:67, 15:83, 15:95, 15:137, 15:155, 15:222, 27:14, 27:81, 35:60, 39:06:01-39:06:02, 39:33-39:34, 39:50, 39:57, 39:62, 39:64, 40:06:01-40:06:04, 40:44, 40:53, 40:70, 40:75, 40:83, 40:86, 40:93, 40:95-40:96, 40:103, 40:109-40:110, 40:127, 40:131, 40:148, 40:159, 40:161-40:162, 40:165, 40:177, 41:01, 41:05-41:07, 41:09, 41:12, 41:14, 41:16-41:17, 42:04, 44:20, 44:47, 44:100, 46:11, 46:18, 51:01:01-51:01:18, 51:01:20-51:03, 51:05, 51:07:01-51:16, 51:18-51:24:04, 51:26-51:41N, 51:43-51:44N, 51:48-51:55, 51:57-51:58, 51:60-51:61, 51:63, 51:65-51:80, 51:82-51:93, 51:95-51:126, 52:01:01-52:27, 54:01:01-54:05N, 54:07-54:08N, 54:10-54:14, 54:16-54:24, 55:01:01-55:01:06, 55:01:08-55:03, 55:05, 55:07, 55:09-55:13, 55:15-55:26, 55:28-55:48, 55:50, 55:52-55:54, 56:01:01-56:01:04, 56:05:01-56:08, 56:13-56:17, 56:19N-56:30, 58:08:01-58:08:02, 59:01:01-59:05, 73:01-73:02 and 78:01:01-78:07 alleles. Specific PCR fragment of 155 bp in the B*49:19N allele.

¹²Primer mix 10: Specific PCR fragment of 80 bp in the B*49:16 allele. Specific PCR fragment of 250 bp in the B*49:08 allele.

¹³Primer mix 14: Specific PCR fragment of 155 bp in the B*49:19N allele. Specific PCR fragment of 190 bp in the B*49:12 and 49:17 alleles.

¹⁴Primer mix 15: Specific PCR fragment of 160 bp in the B*49:13 allele. Specific PCR fragment of 190 bp in the B*49:17 allele. Specific PCR fragment of 290 bp in the B*49:14 allele.

¹⁵Primer mix 16: Specific PCR fragment of 95 bp in the B*49:18 and in the B*35:01:10, 35:04:02, 40:28, 50:14, 51:56:01-51:56:02 and 55:01:04 alleles. Specific PCR fragment of 135 bp in the B*49:15 allele.

‘w’, may be weakly amplified.

INTERPRETATION TABLE								
HLA-B*49 SSP subtyping								
Amplification patterns of the B*49:01 to B*49:20 alleles								
	Well⁶							
	1	2	3	4	5	6	7	8
Length of spec.	145	145	145	170	105	160	105	70
PCR product(s)		255		205			255	155
Length of int.								
pos. control¹	800	1070	1070	1070	1070	1070	1070	1070
5'-primer²	206	97	206	141	357	420	357	357
	5' -gAA 3'	5' -TCC 3'	5' -gAA 3'	5' -ATT 3'	5' -Tgg 3'	5' -TTA 3'	5' -Tgg 3'	5' -Tgg 3'
		454		420				
		5' -ACA 3'		5' -TTA 3'				
3'-primer(s)³	309	309	309	272	420	538	419	387
	5' -ATC 3'	5' -gTg 3'	5' -gTg 3'	5' -Tgg 3'	5' -gCT 3'	5' -CAg 3'	5' -Cgg 3'	5' -TCC 3'
		559		583			419	470
		5' -CAg 3'		5' -gTg 3'			5' -CgA 3'	5' -TCT 3'
							572	
							5' -gCg 3'	
Well No.	1	2	3	4	5	6	7	8
HLA-B allele								
*49:01:01-49:01:03	1				5	6		
*49:02		2	3		5	6		
*49:03				4	5	6		
*49:04	1						7	
*49:05	1						7	8
*49:06	1	2			5	6		
*49:07	1				5	6		
*49:08, 49:16⁴	1				5	6		
*49:09	1			4	5	6		
*49:10	1				5	6		
*49:11	1				5	6		
*49:12	1				5	6		
*49:13, 49:14⁵	1				5	6		
*49:15	1				5	6		
*49:17	1				5	6		
*49:18	1							
*49:19N	1				5	6		8
*49:20	1				5	6	7	
*07:78, 13:31, 13:41, 55:09					5			8
Well No.	1	2	3	4	5	6	7	8

INTERPRETATION TABLE								
HLA-B*49 SSP subtyping								
Amplification patterns of the B*49:01 to B*49:20 alleles								
Well⁶								
9	10	11	12	13	14	15	16	
245	80	505	135	150	155	160	95	Length of spec.
	250				190	190	135	PCR product(s)
						290		
								Length of int.
1070	800	1070	1070	1070	1070	1070	1070	pos. control¹
357	357	317	97	420	357	357	176	5'-primer²
5' -Tgg 3'	5' -Tgg 3'	5' -gCT 3'	5' -TCT 3'	5' -TTA 3'	5' -Tgg 3'	5' -Tgg 3'	5' -gAC 3'	
							379	
							5' -ACC 3'	
559	394	538	193	527	470	476	272	3'-primer(s)³
5' -CTC 3'	5' -gCA 3'	5' -gTC 3'	5' -CgT 3'	5' -CCA 3'	5' -TCT 3'	5' -CCC 3'	5' -Tgg 3'	
	565				505	506	435	
	5' -CAg 3'				5' -gCT 3'	5' -Tgg 3'	5' -TCT 3'	
					506	608		
					5' -Tgg 3'	5' -gCT 3'		
9	10	11	12	13	14	15	16	Well No.
								HLA-B allele
								*49:01:01-49:01:03
								*49:02
								*49:03
								*49:04
								*49:05
								*49:06
9								*49:07
	10							*49:08, 49:16⁴
								*49:09
			12					*49:10
				13				*49:11
					14			*49:12
						15		*49:13, 49:14⁵
							16	*49:15
					14	15		*49:17
							16	*49:18
					14			*49:19N
								*49:20
9								*07:78, 13:31, 13:41, 55:09
9	10	11	12	13	14	15	16	Well No.

Lot No.: **74M**

Lot-specific information

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Length of spec.	145	145	145	170	105	160	105	70
PCR product(s)		255		205			255	155
Well No.	1	2	3	4	5	6	7	8
*07:84, 13:35, 27:14, 27:81, 40:06:01:01-40:06:04, 40:44, 40:53, 40:70, 40:75, 40:83, 40:93, 40:95, 40:103, 40:127, 40:131, 40:148, 40:161-40:162, 40:165, 40:177, 51:10, 51:16, 51:31, 51:34, 51:82, 51:93, 52:08								8
*08:03, 08:52, 08:78, 38:30, 44:06, 53:22, 57:09, 57:24								
*08:09, 15:83, 41:01, 41:05-41:07, 41:09, 41:12, 41:14, 41:16-41:17, 42:04, 51:01:01-51:01:18, 51:01:20-51:03, 51:05, 51:07:02, 51:09:01-51:09:02, 51:11N- 51:12, 51:14, 51:18-51:19, 51:21- 51:22, 51:24:01-51:24:04, 51:26- 51:30, 51:32-51:33, 51:35, 51:38- 51:41N, 51:43, 51:48-51:55, 51:57-51:58, 51:60-51:61, 51:65- 51:80, 51:83-51:91, 51:95-51:96, 51:98N-51:105, 51:107, 51:109- 51:111, 51:113-51:126, 52:01:01:01-52:01:01:02, 52:01:03, 52:01:05-52:01:08, 52:01:10, 52:04-52:07, 52:10:01- 52:13, 52:16-52:18, 52:20, 52:22- 52:24, 52:26-52:27, 54:04, 54:11, 55:17, 55:20, 55:28, 56:05:01- 56:06, 56:15, 56:21, 58:08:01- 58:08:02, 59:02, 78:01:01-78:07								8
*13:01:01-13:01:06, 13:06- 13:07N, 13:11-13:12, 13:17, 13:22:01-13:22:02, 13:25, 13:28- 13:29, 13:36, 13:39, 13:43, 13:50, 13:52, 15:86, 15:224, 40:48, 40:71, 56:02, 56:04, 56:10						6		
Well No.	1	2	3	4	5	6	7	8

245	80	505	135	150	155	160	95	Length of spec.
	250				190	190	135	PCR product(s)
						290		
9	10	11	12	13	14	15	16	Well No.
9								*07:84, 13:35, 27:14, 27:81, 40:06:01:01-40:06:04, 40:44, 40:53, 40:70, 40:75, 40:83, 40:93, 40:95, 40:103, 40:127, 40:131, 40:148, 40:161-40:162, 40:165, 40:177, 51:10, 51:16, 51:31, 51:34, 51:82, 51:93, 52:08
		11						*08:03, 08:52, 08:78, 38:30, 44:06, 53:22, 57:09, 57:24
								*08:09, 15:83, 41:01, 41:05-41:07, 41:09, 41:12, 41:14, 41:16-41:17, 42:04, 51:01:01-51:01:18, 51:01:20-51:03, 51:05, 51:07:02, 51:09:01-51:09:02, 51:11N- 51:12, 51:14, 51:18-51:19, 51:21- 51:22, 51:24:01-51:24:04, 51:26- 51:30, 51:32-51:33, 51:35, 51:38- 51:41N, 51:43, 51:48-51:55, 51:57-51:58, 51:60-51:61, 51:65- 51:80, 51:83-51:91, 51:95-51:96, 51:98N-51:105, 51:107, 51:109- 51:111, 51:113-51:126, 52:01:01:01-52:01:01:02, 52:01:03, 52:01:05-52:01:08, 52:01:10, 52:04-52:07, 52:10:01- 52:13, 52:16-52:18, 52:20, 52:22- 52:24, 52:26-52:27, 54:04, 54:11, 55:17, 55:20, 55:28, 56:05:01- 56:06, 56:15, 56:21, 58:08:01- 58:08:02, 59:02, 78:01:01-78:07
				13				*13:01:01-13:01:06, 13:06- 13:07N, 13:11-13:12, 13:17, 13:22:01-13:22:02, 13:25, 13:28- 13:29, 13:36, 13:39, 13:43, 13:50, 13:52, 15:86, 15:224, 40:48, 40:71, 56:02, 56:04, 56:10
9	10	11	12	13	14	15	16	Well No.

Lot No.: **74M**

Lot-specific information

www.olerup-ssp.com

Length of spec. PCR product(s)	145	145	145	170	105	160	105	70
		255		205			255	155
Well No.	1	2	3	4	5	6	7	8
*13:02:01-13:02:05, 13:02:07-13:02:12, 13:08Q-13:09, 13:14, 13:19, 13:27, 13:30, 13:32-13:34, 13:37-13:38, 13:40, 13:42, 13:44-13:45, 13:49N, 55:22					5	6		8
*13:02:06					5	6		
*13:03, 35:60, 46:11, 46:18, 51:15, 54:01:01-54:03, 54:05N, 54:07-54:08N, 54:12-54:13, 54:17-54:19, 54:21-54:24, 55:02:01-55:02:06, 55:07, 55:10, 55:12, 55:16, 55:18-55:19, 55:26, 55:30, 55:34-55:35, 55:41, 55:43, 55:47-55:48, 55:50, 56:01:01-56:01:04, 56:07-56:08, 56:14, 56:16-56:17, 56:19N-56:20:02, 56:23-56:24, 56:26-56:29, 59:01:01:01-59:01:01:02, 59:04-59:05					5	6		8
*13:04, 13:46, 15:04, 15:16:01-15:16:02, 15:67, 15:95, 15:137, 15:155, 15:222, 39:06:01-39:06:02, 39:33-39:34, 39:57, 39:62, 39:64, 51:13:01-51:13:02, 51:23, 51:37, 51:63, 51:92, 51:108, 52:14-52:15, 54:14, 55:13, 55:23, 55:32, 56:22, 59:03							7	8
*13:15				4	5	6		8
*13:16, 55:24					5	6		8
*13:18					5			8
*13:20, 39:17, 50:12, 55:01:07						6		
*13:23		2				6		
*13:47						6		8
*13:48, 15:42, 55:01:01-55:01:03, 55:01:05-55:01:06, 55:01:08, 55:03, 55:05, 55:11, 55:15, 55:25, 55:29, 55:31, 55:33, 55:36, 55:38, 55:40, 55:45, 55:54, 56:25, 56:30					5	6		8
*15:16:03, 35:37, 45:02, 45:09, 50:09							7	
Well No.	1	2	3	4	5	6	7	8

Lot No.: **74M**

Lot-specific information

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245	80	505	135	150	155	160	95	Length of spec. PCR product(s)
	250				190	190	135	
						290		
9	10	11	12	13	14	15	16	Well No.
9				13				*13:02:01-13:02:05, 13:02:07-13:02:12, 13:08Q-13:09, 13:14, 13:19, 13:27, 13:30, 13:32-13:34, 13:37-13:38, 13:40, 13:42, 13:44-13:45, 13:49N, 55:22
9				13				*13:02:06
				13				*13:03, 35:60, 46:11, 46:18, 51:15, 54:01:01-54:03, 54:05N, 54:07-54:08N, 54:12-54:13, 54:17-54:19, 54:21-54:24, 55:02:01-55:02:06, 55:07, 55:10, 55:12, 55:16, 55:18-55:19, 55:26, 55:30, 55:34-55:35, 55:41, 55:43, 55:47-55:48, 55:50, 56:01:01-56:01:04, 56:07-56:08, 56:14, 56:16-56:17, 56:19N-56:20:02, 56:23-56:24, 56:26-56:29, 59:01:01:01-59:01:01:02, 59:04-59:05
								*13:04, 13:46, 15:04, 15:16:01-15:16:02, 15:67, 15:95, 15:137, 15:155, 15:222, 39:06:01-39:06:02, 39:33-39:34, 39:57, 39:62, 39:64, 51:13:01-51:13:02, 51:23, 51:37, 51:63, 51:92, 51:108, 52:14-52:15, 54:14, 55:13, 55:23, 55:32, 56:22, 59:03
9				13				*13:15
9								*13:16, 55:24
9				w				*13:18
								*13:20, 39:17, 50:12, 55:01:07
				13				*13:23
9				13				*13:47
								*13:48, 15:42, 55:01:01-55:01:03, 55:01:05-55:01:06, 55:01:08, 55:03, 55:05, 55:11, 55:15, 55:25, 55:29, 55:31, 55:33, 55:36, 55:38, 55:40, 55:45, 55:54, 56:25, 56:30
								*15:16:03, 35:37, 45:02, 45:09, 50:09
9	10	11	12	13	14	15	16	Well No.

Lot No.: **74M**

Lot-specific information

www.olerup-ssp.com

Length of spec. PCR product(s)	145	145	145	170	105	160	105	70
		255		205			255	155
Well No.	1	2	3	4	5	6	7	8
*15:46, 15:53, 15:106, 35:47, 35:154, 40:10:01-40:10:02, 40:40, 40:49, 40:129, 40:164, 44:02:13, 44:02:19, 44:05:03, 44:09, 44:11, 44:46, 44:75, 44:90, 44:129, 47:01:01-47:03, 47:05- 47:08								
*18:04, 40:01:11				4				
*18:09, 27:01, 37:10, 58:13		2						
*35:01:10, 35:04:02, 40:28, 50:14, 51:56:01-51:56:02								
*39:50, 40:86, 40:159, 73:01- 73:02							7	8
*40:13, 40:19, 40:117, 57:51	1							
*40:47, 40:157, 44:55, 44:103		2	3					
*40:58				4				
*40:96		2	3					8
*40:109	1							8
*40:110			3					8
*40:167								
*44:02:01:01-44:02:09, 44:02:11- 44:02:12, 44:02:14-44:02:18, 44:02:20-44:05:02, 44:12-44:14, 44:16-44:17, 44:19N, 44:21- 44:24, 44:26-44:33, 44:35-44:39, 44:41:01-44:43:02, 44:45, 44:48, 44:51-44:54, 44:56N, 44:58N- 44:59, 44:61N-44:74, 44:76- 44:80, 44:82, 44:84-44:89, 44:91- 44:94, 44:96-44:99, 44:101- 44:102, 44:104-44:110, 44:112- 44:128, 44:132-44:133, 44:135- 44:137, 47:04			3					
*44:02:10, 44:34			3	4				
*44:07, 44:49, 44:81, 44:111			3					
*44:10			3			6		
*44:15		2	3		5		7	
*44:18	1				5		7	
*44:20, 44:47, 44:100			3				7	8
Well No.	1	2	3	4	5	6	7	8

Lot No.: **74M**

Lot-specific information

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245	80	505	135	150	155	160	95	Length of spec. PCR product(s)
	250				190	190	135	
						290		
9	10	11	12	13	14	15	16	Well No.
			12					*15:46, 15:53, 15:106, 35:47, 35:154, 40:10:01-40:10:02, 40:40, 40:49, 40:129, 40:164, 44:02:13, 44:02:19, 44:05:03, 44:09, 44:11, 44:46, 44:75, 44:90, 44:129, 47:01:01-47:03, 47:05- 47:08
								*18:04, 40:01:11
								*18:09, 27:01, 37:10, 58:13
							16	*35:01:10, 35:04:02, 40:28, 50:14, 51:56:01-51:56:02
9								*39:50, 40:86, 40:159, 73:01- 73:02
								*40:13, 40:19, 40:117, 57:51
								*40:47, 40:157, 44:55, 44:103
			12					*40:58
9								*40:96
9								*40:109
9			12					*40:110
9								*40:167
			12					*44:02:01:01-44:02:09, 44:02:11- 44:02:12, 44:02:14-44:02:18, 44:02:20-44:05:02, 44:12-44:14, 44:16-44:17, 44:19N, 44:21- 44:24, 44:26-44:33, 44:35-44:39, 44:41:01-44:43:02, 44:45, 44:48, 44:51-44:54, 44:56N, 44:58N- 44:59, 44:61N-44:74, 44:76- 44:80, 44:82, 44:84-44:89, 44:91- 44:94, 44:96-44:99, 44:101- 44:102, 44:104-44:110, 44:112- 44:128, 44:132-44:133, 44:135- 44:137, 47:04
			12					*44:02:10, 44:34
								*44:07, 44:49, 44:81, 44:111
			12	13				*44:10
								*44:15
		11						*44:18
			12					*44:20, 44:47, 44:100
9	10	11	12	13	14	15	16	Well No.

Lot No.: **74M**

Lot-specific information

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Length of spec. PCR product(s)	145	145	145	170	105	160	105	70
		255		205			255	155
Well No.	1	2	3	4	5	6	7	8
*44:25, 44:95	1							
*44:50, 57:45	1							
*45:01, 45:03, 45:05-45:07, 45:11-45:13					5		7	
*45:04, 45:08					5			
*45:10					5			
*50:01:01-50:01:03, 50:04-50:08, 50:10-50:11, 50:15					5	6		
*50:02					5	6	7	
*50:13					5	6		
*51:07:01, 52:01:02, 52:01:04, 52:01:09, 52:02-52:03, 52:09, 52:21				4				8
*51:08, 51:20, 51:36, 51:44N, 52:19								8
*51:62				4		6		
*51:97							7	8
*51:106				4		6		8
*51:112	1							8
*52:25				4	5	6		8
*54:10, 55:37					5			8
*54:16, 54:20, 55:21, 55:46, 55:52, 56:13					5			8
*55:01:04					5	6		8
*55:39, 55:42						6		8
*55:44, 55:53						6		8
HLA-B allele								
Well No.	1	2	3	4	5	6	7	8

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*49 SSP subtyping.

In addition, well number 10 contains 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 or 3rd exon, matching the specificity-determining 3'-end of the primer is given. Nucleotide numbering as on the www.ebi.ac.uk/imgt/hla web site. The sequence of the 3 terminal nucleotides of the primer is given.

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

Lot No.: **74M**

Lot-specific information

www.olerup-ssp.com

245	80	505	135	150	155	160	95	Length of spec. PCR product(s)
	250				190	190	135	
						290		
9	10	11	12	13	14	15	16	Well No.
		11	12					*44:25, 44:95
			12					*44:50, 57:45
								*45:01, 45:03, 45:05-45:07, 45:11-45:13
								*45:04, 45:08
9								*45:10
								*50:01:01-50:01:03, 50:04-50:08, 50:10-50:11, 50:15
								*50:02
			12					*50:13
								*51:07:01, 52:01:02, 52:01:04, 52:01:09, 52:02-52:03, 52:09, 52:21
		11						*51:08, 51:20, 51:36, 51:44N, 52:19
								*51:62
		11						*51:97
								*51:106
								*51:112
								*52:25
				w				*54:10, 55:37
								*54:16, 54:20, 55:21, 55:46, 55:52, 56:13
							16	*55:01:04
				13				*55:39, 55:42
								*55:44, 55:53
9	10	11	12	13	14	15	16	HLA-B allele Well No.

⁴The B*49:08 and 49:16 alleles can be distinguished by the different sizes of the specific PCR products generated by primer mix 10.

⁵The B*49:13 and 49:14 alleles can be distinguished by the different sizes of the specific PCR products generated by primer mix 15.

⁶Primer mix 2: Specific PCR fragment of 145 bp in the B*49:06 and the B*58:13 alleles. Specific PCR fragment of 255 bp in the B*49:02 and in the B*13:23, 18:09, 27:01, 37:10, 40:47, 40:96, 40:157, 44:15, 44:55, 44:103 alleles.

Primer mix 4: Specific PCR fragment of 170 bp in the B*49:03 and in the B*18:04, 40:01:11, 40:58, 44:02:10, 44:34, 51:07:01, 52:01:02, 52:01:04, 52:01:09, 52:02-52:03, 52:09 and 52:21 alleles. Specific PCR fragment of 205 bp in the B*49:09 and in the B*13:15, 51:62, 51:106 and 52:25 alleles.

Primer mix 7: Specific PCR fragment of 105 bp in the B*49:04 and 49:05 and in the B*13:04, 13:46, 15:04, 15:16:01-15:16:03, 15:67, 15:95, 15:137, 15:155, 15:222, 35:37, 39:06:01-39:06:02, 39:33-39:34, 39:50, 39:57, 39:62, 39:64, 40:86, 40:159, 45:02, 45:09, 50:09, 51:13:01-51:13:02,

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51:37, 51:63, 51:92, 51:97, 52:14, 54:14, 55:13, 55:23, 55:32, 56:22, 59:03 and 73:01-73:02 alleles. Specific PCR fragment of 255 bp in the B*49:20 and in the B*44:15, 44:18, 44:20, 44:47, 44:100, 45:01-45:03, 45:05-45:07, 45:09, 45:11-45:13, 50:02, 51:23, 51:108 and 52:15 alleles.

Primer mix 8: Specific PCR fragment of 70 bp in the B*49:05 and in the B*07:78, 07:84, 08:09, 13:02:01-13:02:05, 13:02:07-13:04, 13:08Q-13:09, 13:14-13:16, 13:18-13:19, 13:27, 13:30-13:35, 13:37-13:38, 13:40-13:42, 13:44-13:49N, 15:04, 15:16:01-15:16:02, 15:42, 15:67, 15:83, 15:95, 15:137, 15:155, 15:222, 27:14, 27:81, 35:60, 39:06:01-39:06:02, 39:33-39:34, 39:50, 39:57, 39:62, 39:64, 40:06:01:01-40:06:04, 40:44, 40:53, 40:70, 40:75, 40:83, 40:86, 40:93, 40:95-40:96, 40:103, 40:109-40:110, 40:127, 40:131, 40:148, 40:159, 40:161-40:162, 40:165, 40:177, 41:01, 41:05-41:07, 41:09, 41:12, 41:14, 41:16-41:17, 42:04, 44:20, 44:47, 44:100, 46:11, 46:18, 51:01:01-51:01:18, 51:01:20-51:03, 51:05, 51:07:01-51:16, 51:18-51:24:04, 51:26-51:41N, 51:43-51:44N, 51:48-51:55, 51:57-51:58, 51:60-51:61, 51:63, 51:65-51:80, 51:82-51:93, 51:95-51:126, 52:01:01:01-52:27, 54:01:01-54:05N, 54:07-54:08N, 54:10-54:14, 54:16-54:24, 55:01:01-55:01:06, 55:01:08-55:03, 55:05, 55:07, 55:09-55:13, 55:15-55:26, 55:28-55:48, 55:50, 55:52-55:54, 56:01:01-56:01:04, 56:05:01-56:08, 56:13-56:17, 56:19N-56:30, 58:08:01-58:08:02, 59:01:01:01-59:05, 73:01-73:02 and 78:01:01-78:07 alleles. Specific PCR fragment of 155 bp in the B*49:19N allele.

Primer mix 10: Specific PCR fragment of 80 bp in the B*49:16 allele. Specific PCR fragment of 250 bp in the B*49:08 allele.

Primer mix 14: Specific PCR fragment of 155 bp in the B*49:19N allele. Specific PCR fragment of 190 bp in the B*49:12 and 49:17 alleles.

Primer mix 15: Specific PCR fragment of 160 bp in the B*49:13 allele. Specific PCR fragment of 190 bp in the B*49:17 allele. Specific PCR fragment of 290 bp in the B*49:14 allele.

Primer mix 16: Specific PCR fragment of 95 bp in the B*49:18 and in the B*35:01:10, 35:04:02, 40:28, 50:14, 51:56:01-51:56:02 and 55:01:04 alleles. Specific PCR fragment of 135 bp in the B*49:15 allele.

‘w’, may be weakly amplified.

CELL LINE VALIDATION SHEET																				
HLA-B*49 SSP primer set																				
					Well															
					1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
				Prod. No.:	201191101	201191102	201191103	201191104	201191105	201191106	201191107	201191108	201191109	201191110	201191111	201191112	201191113	201191114	201191115	201191116
	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*49 SSP****Product number:** 101.547-06u – without *Taq* polymerase**Lot number:** 74M**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	2011-911-01	9	2011-911-09
2	2011-911-02	10	2011-911-10
3	2011-911-03	11	2011-911-11
4	2011-911-04	12	2011-911-12
5	2011-911-05	13	2011-911-13
6	2011-911-06	14	2011-911-14
7	2011-911-07	15	2011-911-15
8	2011-911-08	16	2011-911-16

The specificity of each primer solution of the HLA-B*49 primer set has been tested against 48 well characterized IHWC cell line DNAs.

No DNAs carrying the alleles to be amplified by primer solutions 2, 4, 10, 11 and 14 to 16 were available. The specificities of the primers in primer solutions 2, 4, 11 and 16 were tested by separately adding additional 3'-primers, respectively additional 5'-primers. In primer solution 10, 14 and 15, it was only possible to test the 5'-primer, the 3'-primer was not possible to test. In primer solutions 2 and 16, one 5'-primer was not possible to test, and in primer solution 8, one 3'-primer was not possible to test.

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

Date of approval: 2011-December-15

Approved by:

Production Quality Control

Declaration of Conformity

Product name: *Olerup* SSP® HLA-B*49

Product number: 101.547-06u

Lot number: 74M

Intended use: HLA-B*49 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-15

Ann-Cathrin Jareman
Head of QA and Regulatory Affairs

Lot No.: **74M**

Lot-specific information

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