

Olerup SSP[®] HLA-B*37

Product number:	101.541-06 – including <i>Taq</i> polymerase
Lot number:	53M
Expiry date:	2014-April-01
Number of tests:	6
Number of wells per test:	24
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. 53M.

CHANGES COMPARED TO THE PREVIOUS *OLERUP SSP*[®] HLA-B*37 LOT.

The HLA-B*37 specificity and interpretation tables have been updated for the HLA-B alleles described since the previous *Olerup SSP*[®] HLA-B*37 lot was made (Lot No. 72K).

One well has been added to the HLA-B*37 kit, well **24**.
The amplification patterns for some rare HLA-B*37 alleles
only differ by the length of the specific PCR products.

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

Well	5'-primer	3'-primer	rationale
2	Added	Added	Primer pair added for the B*37:28 allele, exchanged positive control primer pair.
10	-	Added	Primer added for the B*37:26 allele.
13	-	Added	Increased yield of HLA-specific PCR product.
21	-	Added	Primer added for the B*37:27 allele.
24	New	New	New primer pair for the B*37:29 allele.

PRODUCT DESCRIPTION

HLA-B*37 SSP typing

CONTENT

The primer set contains 5'- and 3'-primers for identifying the B*37:01 to B*37:29 alleles.

PLATE LAYOUT

Each HLA-B*37 test consists of 24 PCR reactions in a 24 well cut PCR plate.

1	2	3	4	5	6	7	8
9	10	11	12	13	14	15	16
17	18	19	20	21	22	23	24

The 24 well PCR plate is marked with 'HLA-B*37' in silver/gray ink.

Well No. 1 is marked with the Lot No. '53M'.

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 24 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*37 SSP subtypings will be influenced by most B*07, the B*08, the B*13:23, the B*14:10, several B*15, the B*18, the B*27, the B*35, three B*38, four B*39, the B*40, the B*41, the B*42, several B*44, the B*45, the B*46:14, B*47, four B*48, the B*49, the B*50, seven B*51, the B*52:19, two B*53, the B*54:02, two B*55, two B*56, two B*57, the B*73, the B*78 and B*82 alleles when present on the other haplotype. In addition, the C*07:68 allele will be amplified by primer mix 1 and the C*02:23 and C*04:77 alleles will be amplified by primer mix 8.

UNIQUELY IDENTIFIED ALLELES

All the HLA-B*37, i.e. **B*37:01 to B*37:29**, recognized by the HLA Nomenclature Committee in April 2011¹ will be amplified by the primers in the HLA-B*37 SSP kit. The HLA-B*37 subtyping kit cannot distinguish the B*37:01:01 to B*37:01:07 or the B*37:04:01 and 37:04:02 alleles.

The HLA-B*37:24 and 37:27 alleles can be distinguished by the different sizes of the specific PCR products generated by primer mix 21.

¹HLA-B alleles listed on the IMGT/HLA web page 2011-April-08, release 3.4.0, www.ebi.ac.uk/imgt/hla.

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RESOLUTION IN HOMO- AND HETEROZYGOTES

A total of 39 alleles generate 28 amplification patterns that can be combined in 406 homozygous and heterozygous combinations. 208 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.

+++++---	----+----	-----	*37:02, *37:13 = *37:13, *37:28
+++-----	----+----	-----	*37:02, *37:03N = *37:03N, *37:28
++-----	----+----	-----	*37:02, *37:04:01 = *37:04:01, *37:28
++-----	-++-----	-----+	*37:02, *37:14 = *37:14, *37:28
++-----	----+----	-----+	*37:02, *37:11 = *37:11, *37:28
++-----	----+----	-----	*37:02, *37:05 = *37:05, *37:28
++-----	----+----	-----	*37:02, *37:06 = *37:06, *37:28
++-----	+---+----	-----	*37:02, *37:08 = *37:02, *37:22 = *37:08, *37:28 = *37:22, *37:28
++-----	-++-----	-----	*37:02, *37:26 = *37:26, *37:28
++-----	----+----	-----	*37:02, *37:18 = *37:18, *37:28
++-----	----+----	-----	*37:02, *37:10 = *37:02, *37:15 = *37:10, *37:28 = *37:15, *37:28
++-----	----+----	+-----	*37:02, *37:25 = *37:25, *37:28
++-----	----+----	-+-----	*37:02, *37:20 = *37:20, *37:28
++-----	----+----	--+-----	*37:02, *37:21 = *37:21, *37:28
++-----	----+----	---+-----	*37:02, *37:16Q = *37:16Q, *37:28
++-----	----+----	----+-----	*37:02, *37:24 = *37:24, *37:28
++-----	----+----	-----+--	*37:02, *37:17 = *37:17, *37:28
++-----	----+----	-----+-	*37:02, *37:23 = *37:19, *37:28 = *37:23, *37:28
++-----	----+----	-----++	*37:02, *37:29 = *37:28, *37:29
++-----	----+----	-----	*37:01:01, *37:02 = *37:01:01, *37:28 = *37:02, *37:28 = *37:28, *37:28
+++++---	+---+----	-----	*37:08, *37:13 = *37:13, *37:22
+-----	----+----	-----	*37:10, *37:13 = *37:13, *37:15
+-----	----+----	-----+	*37:13, *37:19 = *37:13, *37:23
+++++---	----+----	-----	*37:01:01, *37:13 = *37:03N, *37:04:01 = *37:03N, *37:13 = *37:04:01, *37:13 = *37:13, *37:13
+-----	+---+----	-----	*37:03N, *37:08 = *37:03N, *37:22
+-----	----+----	-----	*37:03N, *37:10 = *37:03N, *37:15
+-----	----+----	-----+	*37:03N, *37:19 = *37:03N, *37:23
+-----	----+----	-----	*37:01:01, *37:03N = *37:03N, *37:03N
+-----	+---+----	-----	*37:04:01, *37:08 = *37:04:01, *37:22
+-----	----+----	-----	*37:04:01, *37:10 = *37:04:01, *37:15
+-----	----+----	-----+	*37:04:01, *37:19 = *37:04:01, *37:23
+-----	----+----	-----	*37:01:01, *37:04:01 = *37:04:01, *37:04:01
+-----	-++-----	-----++	*37:14, *37:19 = *37:14, *37:23
+-----	-++-----	-----+	*37:01:01, *37:14 = *37:14, *37:26 = *37:14, *37:29
+-----	----+----	-----++	*37:11, *37:19 = *37:11, *37:23
+-----	----+----	-----+	*37:01:01, *37:11 = *37:11, *37:29
+-----	----+----	-----+-	*37:05, *37:19 = *37:05, *37:23
+-----	+---+----	-----	*37:06, *37:08 = *37:06, *37:22
+-----	----+----	-----	*37:06, *37:10 = *37:06, *37:15
+-----	----+----	-----+	*37:06, *37:19 = *37:06, *37:23
+-----	----+----	-----	*37:01:01, *37:06 = *37:06, *37:06
+-----	+---+----	-----	*37:07, *37:08 = *37:07, *37:22
+-----	----+----	-----	*37:07, *37:10 = *37:07, *37:15
+-----	++-----	-----	*37:08, *37:26 = *37:22, *37:26
+-----	+++++---	-----	*37:08, *37:09 = *37:09, *37:22
+-----	+++++---	-----	*37:08, *37:18 = *37:18, *37:22
+-----	+---+----	-----	*37:08, *37:10 = *37:08, *37:15 = *37:15, *37:22

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+---+--- +---+---+ -----	*37:08, *37:12 = *37:12, *37:22
+---+--- +---+---+ +-----	*37:08, *37:25 = *37:22, *37:25
+---+--- +---+---+ -+-----	*37:08, *37:20 = *37:20, *37:22
+---+--- +---+---+ ---+-----	*37:08, *37:21 = *37:21, *37:22
+---+--- +---+---+ ---+-----	*37:08, *37:16Q = *37:16Q, *37:22
+---+--- +---+---+ -----+---	*37:08, *37:24 = *37:22, *37:24
+---+--- +---+---+ -----+---	*37:08, *37:17 = *37:17, *37:22
+---+--- +---+---+ -----+---	*37:08, *37:19 = *37:08, *37:23 = *37:19, *37:22 = *37:22, *37:23
+---+--- +---+---+ -----+---	*37:08, *37:29 = *37:22, *37:29
+---+--- +---+---+ -----	*37:01:01, *37:08 = *37:01:01, *37:22 = *37:08, *37:22
+---+--- -+---+--- -----	*37:10, *37:26 = *37:15, *37:26
+---+--- -+---+--- -----+---	*37:19, *37:26 = *37:23, *37:26
+---+--- -+---+--- -----	*37:01:01, *37:26 = *37:26, *37:26
+---+--- -+---+---+ -----	*37:09, *37:10 = *37:09, *37:15
+---+--- -+---+--- -----	*37:10, *37:18 = *37:15, *37:18
+---+--- -+---+---+ -----	*37:01:01, *37:09 = *37:09, *37:18 = *37:12, *37:18
+---+--- -+---+--- -----+---	*37:18, *37:19 = *37:18, *37:23
+---+--- -+---+--- -----	*37:01:01, *37:18 = *37:18, *37:18
+---+--- -+---+---+ -----	*37:10, *37:12 = *37:12, *37:15
+---+--- -+---+---+ +-----	*37:10, *37:25 = *37:15, *37:25
+---+--- -+---+--- -+-----	*37:10, *37:20 = *37:15, *37:20
+---+--- -+---+--- ---+-----	*37:10, *37:21 = *37:15, *37:21
+---+--- -+---+--- ---+-----	*37:10, *37:16Q = *37:15, *37:16Q
+---+--- -+---+--- -----+---	*37:10, *37:24 = *37:15, *37:24
+---+--- -+---+--- -----+---	*37:10, *37:17 = *37:15, *37:17
+---+--- -+---+--- -----+---	*37:10, *37:19 = *37:10, *37:23 = *37:15, *37:19 = *37:15, *37:23
+---+--- -+---+--- -----+---	*37:10, *37:29 = *37:15, *37:29
+---+--- -+---+--- -----	*37:01:01, *37:10 = *37:01:01, *37:15 = *37:10, *37:15 = *37:15, *37:15
+---+--- -+---+---+ +-----+---	*37:19, *37:25 = *37:23, *37:25
+---+--- -+---+---+ +-----	*37:01:01, *37:25 = *37:25, *37:25
+---+--- -+---+--- -+-----+---	*37:19, *37:20 = *37:20, *37:23
+---+--- -+---+--- -+-----	*37:01:01, *37:20 = *37:20, *37:20
+---+--- -+---+--- ---+-----+---	*37:19, *37:21 = *37:21, *37:23
+---+--- -+---+--- ---+-----	*37:01:01, *37:21 = *37:21, *37:21
+---+--- -+---+--- ---+-----+---	*37:16Q, *37:19 = *37:16Q, *37:23
+---+--- -+---+--- ---+-----	*37:01:01, *37:16Q = *37:16Q, *37:16Q
+---+--- -+---+--- -----+---	*37:19, *37:24 = *37:23, *37:24
+---+--- -+---+--- -----+---	*37:01:01, *37:24 = *37:24, *37:24
+---+--- -+---+--- -----+---	*37:17, *37:19 = *37:17, *37:23
+---+--- -+---+--- -----+---	*37:01:01, *37:17 = *37:17, *37:17
+---+--- -+---+--- -----+---	*37:19, *37:29 = *37:23, *37:29
+---+--- -+---+--- -----+---	*37:01:01, *37:19 = *37:01:01, *37:23 = *37:19, *37:23 = *37:23, *37:23
+---+--- -+---+--- -----+---	*37:01:01, *37:29 = *37:29, *37:29
+---+--- -+---+--- -----+---	*37:05, *37:14 = *37:14, *37:14
+---+--- -+---+---+ -----+---	*37:05, *37:11 = *37:11, *37:11
-----+--- -+---+--- -----	*37:09, *37:09 = *37:09, *37:12

*37:01:01 = *37:01:01-37:01:07
*37:04:01 = *37:04:01-37:04:02
*37:24 = *37:24 and 37:27

SPECIFICITY TABLE

HLA-B*37 SSP subtyping

Specificities and sizes of the PCR products of the 24 primer mixes used for HLA-B*37 SSP subtyping

Primer Mix	Size of spec. PCR product ¹	Size of control band ²	Amplified HLA-B*37 alleles ³	Other amplified HLA-B alleles ⁴
1	210 bp	800 bp	*37:01:01-37:01:07, 37:03N-37:06, 37:08, 37:10-37:11, 37:13-37:18, 37:20-37:29	*08:49, C*07:68
2 ^{5,8}	95 bp, 135 bp	800 bp	*37:02, 37:28	*07:27, 27:01-27:05:16, 27:07-27:10, 27:12-27:19, 27:23, 27:25-27:29, 27:31-27:32, 27:34-27:80, 38:17, 47:04-47:05
3 ⁹	200 bp, 235 bp	1070 bp	*37:03N, 37:13	
4 ¹⁰	200 bp, 255 bp	1070 bp	*37:04:01-37:04:02, 37:13	*18:18
5	210 bp	1070 bp	*37:01:01-37:04:02, 37:06-37:09, 37:12-37:13, 37:15-37:21, 37:23-37:29	*07:27, 18:54, 38:17
6	145 bp	1070 bp	*37:05, 37:11, 37:14 ^w	*07:65, 08:32, 15:46, 15:53, 15:106, 15:143, 15:202, 15:212, 18:01:01-18:08, 18:10-18:15, 18:17N-18:36, 18:38-18:53, 18:55-18:63, 35:01:01:01-35:08:01, 35:08:03-35:24:02, 35:27-35:45, 35:47-35:48, 35:50-35:72, 35:74-35:163, 39:19:01-39:19:02, 40:01:01-40:11:02, 40:14:01-40:16, 40:18, 40:20, 40:22N-40:40, 40:42-40:45, 40:48-40:75, 40:77-40:92, 40:94-40:95, 40:97-40:108, 40:111-40:116, 40:118N-40:136, 40:138-40:156, 40:158-40:164, 41:01-41:04, 41:05 ^w , 41:06-41:18, 44:09, 44:46, 44:75, 44:90, 44:129, 45:01-45:13, 47:02, 47:03 ^w , 50:01:01-50:02, 50:04-50:05, 50:07-50:13, 56:06, 78:01:01-78:07

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7	135 bp	1070 bp	*37:06	*47:01:01:01-47:01:02, 47:05-47:08
8⁵	120 bp	1070 bp	*37:07	*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, 07:123-07:130, 15:138, 40:15-40:16, 40:23, 40:32, 40:98, 40:158, 48:05, 48:08, 48:15, C*02:23, C*04:77
9^{5,11}	80 bp, 215 bp	1070 bp	*37:08, 37:22	*07:27, 18:54, 38:17, 53:03
10^{5,6,12}	110 bp, 145 bp	1070 bp	*37:14, 37:26	
11^{5,13}	95 bp, 215 bp	1070 bp	*37:09, 37:18	*07:04, 07:19, 07:25, 08:01:01-08:05, 08:07-08:08N, 08:10-08:11, 08:14-08:15, 08:17-08:19N, 08:21-08:24, 08:26-08:39, 08:41-08:48, 08:50-08:54, 08:56-08:59, 08:61-08:69, 35:87, 41:02:01-41:02:03, 41:04, 41:10-41:11, 41:13, 41:15, 41:18, 42:01:01-42:02, 42:05:01-42:12, 42:14-42:16, 44:106
12	205 bp	1070 bp	*37:01:01-37:07, 37:09-37:29	*13:23, 15:71, 15:175, 15:204, 15:210, 15:212, 18:12, 27:01-27:21, 27:24-27:36, 27:38-27:80, 35:63, 40:01:01-40:07, 40:09, 40:11:01-40:11:02, 40:13-40:16, 40:18-40:20, 40:22N-40:24, 40:26-40:39, 40:42-40:48, 40:50-40:57, 40:59-40:67, 40:70-40:105, 40:107-40:109, 40:111-40:128, 40:130-40:136, 40:138-40:163, 41:01-41:18, 44:15, 44:18, 44:55, 44:103, 45:01-45:13, 48:22, 49:01:01-49:09, 49:11-49:17, 50:01:01-50:02, 50:04-50:12
13¹⁴	170 bp, 255 bp	800 bp	*37:10, 37:15	*13:23, 18:09, 27:01, 40:47, 40:96, 40:157, 44:15, 44:55, 44:103, 49:02
14⁷	245 bp	1070 bp	*37:11	*08:62, 15:71, 15:175, 15:204, 15:210, 15:212, 18:01:01-18:01:12, 18:02-18:03, 18:05-18:08, 18:10-18:15, 18:17N-18:24, 18:26-18:42, 18:44-18:48, 18:50-18:53, 18:55-18:63, 27:08, 27:12, 27:18, 27:26,

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				27:33, 27:40, 27:44, 35:50, 35:63, 35:84, 35:162, 39:31, 40:01:01-40:01:04, 40:01:06-40:09, 40:11:01-40:11:02, 40:14:01-40:16, 40:18, 40:20, 40:22N-40:36, 40:38-40:39, 40:42-40:46, 40:48, 40:50-40:57, 40:59-40:75, 40:77-40:95, 40:97-40:108, 40:111-40:116, 40:118N-40:128, 40:130-40:134, 40:136, 40:138-40:156, 40:158-40:163, 41:01-41:04, 41:06-41:18, 42:02, 42:09, 45:01-45:13, 46:14, 48:22, 50:01:01-50:02, 50:04-50:12, 54:02, 55:16, 73:01-73:02
15	135 bp	1070 bp	*37:11	*07:65, 08:32, 15:202, 18:01:01-18:08, 18:10-18:15, 18:17N-18:36, 18:38-18:47, 18:50-18:53, 18:55-18:63, 35:01:01:01-35:02:02, 35:02:04-35:03:02, 35:03:04-35:08:01, 35:08:03-35:18, 35:20:01-35:24:02, 35:28-35:45, 35:48, 35:50-35:55, 35:57-35:62, 35:64-35:72, 35:74-35:153, 35:155-35:163, 39:19:01-39:19:02, 56:06, 78:01:01-78:05, 78:07
16	170 bp	1070 bp	*37:09, 37:12	*07:04, 07:19, 07:25, 08:01:01-08:05, 08:07-08:12:03, 08:15-08:19N, 08:21-08:24, 08:26-08:27, 08:29-08:39, 08:41-08:48, 08:50-08:54, 08:56-08:69, 15:51, 15:83, 15:179, 15:199, 15:218Q, 18:56, 35:38, 35:87, 35:115, 38:30, 40:136, 41:01-41:09, 41:11-41:18, 42:01:01-42:02, 42:04-42:16, 44:14, 44:17, 44:51, 44:62, 44:123, 45:09, 51:08, 51:20, 51:36, 51:44N, 51:97, 52:19, 53:22, 55:20, 56:13, 57:09, 57:24, 82:01-82:03
17	165 bp	1070 bp	*37:25	*45:03
18	195 bp	1070 bp	*37:20	
19	215 bp	1070 bp	*37:21	*08:62, 18:07:01-18:07:02, 18:29, 27:23, 35:50, 35:84, 35:162, 40:07-40:08, 40:13, 40:68, 40:106, 40:162, 51:103

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20	235 bp	800 bp	*37:16Q	
21¹⁵	165 bp, 270 bp	1070 bp	*37:24, 37:27	*27:57, 40:152
22⁶	175 bp	1070 bp	*37:17	*40:153
23^{5,16}	90 bp, 345 bp	1070 bp	*37:19, 37:23	*14:10, 27:69, 35:59, 38:20, 39:42, 44:117, 51:32
24	135 bp	1070 bp	*37:11, 37:14, 37:29	*07:65, 08:32, 15:202, 18:01:01- 18:08, 18:10-18:15, 18:17N-18:36, 18:38-18:47, 18:50-18:53, 18:55- 18:63, 35:01:01:01-35:03:02, 35:03:04-35:08:01, 35:08:03- 35:18, 35:20:01-35:24:02, 35:28- 35:45, 35:48, 35:50-35:51, 35:53N- 35:55, 35:57-35:62, 35:64-35:72, 35:74-35:153, 35:155-35:163, 39:19:01-39:19:02, 56:06, 78:01:01-78:05, 78:07

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*37 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*37 SSP subtyping.

In addition, wells number 2, 13 and 20 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.

³The HLA-B*37:24 and 37:27 alleles can be distinguished by the different sizes of the specific PCR products generated by primer mix 21.

⁴Due to the sharing of sequence motifs between HLA-B alleles non-HLA-B*37 alleles will be amplified by primer mixes 1,2, 4 to 9, 11 to 17, 19 and 21 to 24. In addition, the C*07:68 allele will be amplified by primer mix 1, and the C*02:23 and C*04:77 alleles will be amplified by primer mix 8.

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

⁶Primer mixes 10 and 22 may give rise to nonspecific amplifications.

⁷Primer mix 14 may give a lower yield of specific PCR product than the other HLA-B*37 primer mixes.

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⁸Primer mix 2: Specific PCR fragment of 95 bp in the B*37:02 and in the B*27:01-27:02:02, 27:04:01-27:04:04, 27:08, 27:12, 27:15, 27:18, 27:23, 27:25-27:26, 27:31, 27:36, 27:40, 27:42, 27:44, 27:49, 27:52-27:53, 27:57, 27:61-27:63, 27:65N-27:69, 27:75, 27:77, 27:79 and 47:04-47:05 alleles. Specific PCR fragment of 135 bp in the B*37:28 and the B*07:27, 27:07, 27:09, 27:14, 27:19, 27:27, 27:32, 27:34-27:35, 27:41, 27:43, 27:46, 27:70, 27:76, 27:78 and 38:17 alleles. Specific PCR fragment of 95 and 135 bp in the 27:03, 27:05:02-27:05:16, 27:10, 27:13, 27:16-27:17, 27:28-27:29, 27:37-27:39, 27:45, 27:47-27:48, 27:50-27:51, 27:54-27:56, 27:58-27:60, 27:64N, 27:71-27:74 and 27:80 alleles.

⁹Primer mix 3: Specific PCR fragment of 200 bp in the B*37:13 allele. Specific PCR fragment of 235 bp in the B*37:03N allele.

¹⁰Primer mix 4: Specific PCR fragment of 200 bp in the B*37:13 allele. Specific PCR fragment of 255 bp in the B*37:04:01-37:04:02 and B*18:18 alleles.

¹¹Primer mix 9: Specific PCR fragment of 80 bp in the B*37:08 and the B*07:27, 18:54, 38:17 and 53:03 alleles. Specific PCR fragment of 215 bp in the B*37:22 allele.

¹²Primer mix 10: Specific PCR fragment of 110 bp in the B*37:26 allele. Specific PCR fragment of 145 bp in the B*37:14 allele.

¹³Primer mix 11: Specific PCR fragment of 95 bp in the B*37:18 allele. Specific PCR fragment of 215 bp in the B*37:09 and the B*07:04, 07:19, 07:25, 08:01:01-08:05, 08:07-08:08N, 08:10-08:11, 08:14-08:15, 08:17-08:19N, 08:21-08:24, 08:26-08:39, 08:41-08:48, 08:50-08:54, 08:56-08:59, 08:61-08:69, 35:87, 41:02:01-41:02:03, 41:04, 41:10-41:11, 41:13, 41:15, 41:18, 42:01:01-42:02, 42:05:01-42:12, 42:14-42:16 and 44:106 alleles.

¹⁴Primer mix 13: Specific PCR fragment of 170 bp in the B*37:15 allele. Specific PCR fragment of 255 bp in the B*37:10 and the B*13:23, 18:09, 27:01, 40:47, 40:96, 40:157, 44:15, 44:55, 44:103 and 49:02 alleles.

¹⁵Primer mix 21: Specific PCR fragment of 165 bp in the B*37:27 and the B*27:57 alleles. Specific PCR fragment of 270 bp in the B*37:24 and the B*40:152 alleles.

¹⁶Primer mix 23: Specific PCR fragment of 90 bp in the B*37:19 and in the B*14:10, 35:59, 38:20, 39:42 and 44:117 alleles. Specific PCR fragment of 345 bp in the B*37:23 and in the B*27:69 and 51:32 alleles.

'w', might be weakly amplified.

INTERPRETATION TABLE

HLA-B*37 SSP subtyping

Amplification patterns of the HLA-B*37:01 to *37:29 alleles

	Well ⁵											
	1	2	3	4	5	6	7	8	9	10	11	12
Length of spec.	210	95	200	200	210	145	135	120	80	110	95	205
PCR product(s)		135	235	255					215	145	215	
Length of int.	800	800	1070	1070	1070	1070	1070	1070	1070	1070	1070	1070
pos. control ¹												
5'-primer(s) ²	368	206	142	368	142	206	206	527	126	206	363	97
	5'-gTC 3'	5'-AgA 3'	5'-TCT 3'	5'-gTC 3'	5'-TCT 3'	5'-gAA 3'	5'-gAA 3'	5'-TgA 3'	5'-ggA 3'	5'-gAC 3'	5'-AgC 3'	5'-TCC 3'
		363	368			206			261		483	
		5'-AAT 3'	5'-gTC 3'			5'-gAC 3'			5'-AAC 3'		5'-gAA 3'	
3'-primer(s) ³	538	301	337	527	311	311	301	605	301	275	538	259
	5'-gTC 3'	5'-gTC 3'	5'-CTA 3'	5'-CCT 3'	5'-ggg 3'	5'-ggT 3'	5'-gTC 3'	5'-gCT 3'	5'-gTC 3'	5'-TCA 3'	5'-gTC 3'	5'-CTC 3'
		418	527	583	311					311		259
		5'-gTC 3'	5'-CCT 3'	5'-gTg 3'	5'-ggg 3'					5'-ggT 3'		5'-CTC 3'
Well No.	1	2	3	4	5	6	7	8	9	10	11	12
HLA-B allele												
*37:01:01-37:01:07	1				5							12
*37:02		2			5							12
*37:03N	1		3		5							12
*37:04:01-37:04:02	1			4	5							12
*37:05	1					6						12
*37:06	1				5		7					12
*37:07					5			8				12
*37:08	1				5				9			
*37:09					5						11	12
*37:10	1											12
*37:11	1					6						12
*37:12					5							12
*37:13	1		3	4	5							12
*37:14	1					w				10		12
*37:15	1				5							12
*37:16Q	1				5							12
Well No.	1	2	3	4	5	6	7	8	9	10	11	12

INTERPRETATION TABLE												
HLA-B*37 SSP subtyping												
Amplification patterns of the HLA-B*37:01 to *37:29 alleles												
Well⁵												
13	14	15	16	17	18	19	20	21	22	23	24	
170	245	135	170	165	195	215	235	165	175	90	135	Length of spec.
255								270		345		PCR product(s)
800	1070	1070	1070	1070	1070	1070	800	1070	1070	1070	1070	Length of int.
												pos. control ¹
97	97	206	409	416	385	97	368	97	520	369	206	5'-primer(s) ²
5'-TCC ^{3'}	5'-TCC ^{3'}	5'-gAC ^{3'}	5'-ggC ^{3'}	5'-CCg ^{3'}	5'-ggg ^{3'}	5'-TCC ^{3'}	5'-gTC ^{3'}	5'-TCC ^{3'}	5'-CgA ^{3'}	5'-TAC ^{3'}	5'-gAC ^{3'}	
										3 rd I		
										5'-Agg ^{3'}		
227	302	302	538	538	538	272	563	221	3 rd I	419	301	3'-primer(s) ³
5'-CTg ^{3'}	5'-ggC ^{3'}	5'-ggC ^{3'}	5'-gTC ^{3'}	5'-gTC ^{3'}	5'-gTC ^{3'}	5'-TgA ^{3'}	5'-CgT ^{3'}	5'-ACC ^{3'}	5'-TAT ^{3'}	5'-CgA ^{3'}	5'-gCT ^{3'}	
309								326		872		
5'-gTg ^{3'}								5'-TgC ^{3'}		5'-TCA ^{3'}		
13	14	15	16	17	18	19	20	21	22	23	24	Well No.
												HLA-B allele
												*37:01:01-37:01:07
												*37:02
												*37:03N
												*37:04:01-37:04:02
												*37:05
												*37:06
												*37:07
												*37:08
			16									*37:09
13												*37:10
	14	15									24	*37:11
			16									*37:12
												*37:13
											24	*37:14
13												*37:15
							20					*37:16Q
13	14	15	16	17	18	19	20	21	22	23	24	Well No.

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Lot-specific information

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Length of spec.	210	95	200	200	210	145	135	120	80	110	95	205
PCR product(s)		135	235	255					215	145	215	
Well No.	1	2	3	4	5	6	7	8	9	10	11	12
*37:17	1				5							12
*37:18	1				5						11	12
*37:19					5							12
*37:20	1				5							12
*37:21	1				5							12
*37:22	1								9			12
*37:23	1				5							12
*37:24, 37:27 ⁴	1				5							12
*37:25	1				5							12
*37:26	1				5					10		12
*37:28	1	2			5							12
*37:29	1				5							12
*07:02:01-07:03, 07:05:01-07:18:02, 07:20-07:24, 07:26, 07:28-07:32, 07:34-07:39, 07:41-07:47, 07:49N- 07:50, 07:52, 07:54-07:59, 07:61- 07:64, 07:66-07:99, 07:101-07:121, 07:123-07:130, 15:138, 48:05, 48:08, 48:15, C*02:23, C*04:77								8				
*07:04								8			11	
*07:19, 07:25, 08:01:01-08:05, 08:07- 08:08N, 08:10-08:11, 08:15, 08:17- 08:19N, 08:21-08:24, 08:26-08:27, 08:29-08:31, 08:33-08:39, 08:41- 08:48, 08:50-08:54, 08:56-08:59, 08:61, 08:63-08:69, 42:01:01- 42:01:02, 42:05:01-42:08, 42:10- 42:12, 42:14-42:16											11	
*07:27		2			5			8	9			
*07:65						6		8				
*08:09, 08:12:01-08:12:03, 08:16, 08:60, 15:51, 15:83, 15:179, 15:199, 15:218Q, 38:30, 42:04, 42:13, 44:14, 44:17, 44:51, 44:62, 44:123, 51:08, 51:20, 51:36, 51:44N, 51:97, 52:19, 53:22, 55:20, 56:13, 57:09, 57:24, 82:01-82:03												
*08:14, 08:28, 44:106											11	
*08:32, 35:87						6					11	
Well No.	1	2	3	4	5	6	7	8	9	10	11	12

Lot No.: **53M**

Lot-specific information

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170	245	135	170	165	195	215	235	165	175	90	135	Length of spec.
255								270		345		PCR product(s)
13	14	15	16	17	18	19	20	21	22	23	24	Well No.
									22			*37:17
												*37:18
										23		*37:19
				18								*37:20
					19							*37:21
										23		*37:22
												*37:23
								21				*37:24, 37:27 ⁴
				17								*37:25
												*37:26
												*37:28
											24	*37:29
												*07:02:01-07:03, 07:05:01-07:18:02, 07:20-07:24, 07:26, 07:28-07:32, 07:34-07:39, 07:41-07:47, 07:49N- 07:50, 07:52, 07:54-07:59, 07:61- 07:64, 07:66-07:99, 07:101-07:121, 07:123-07:130, 15:138, 48:05, 48:08, 48:15, C*02:23, C*04:77
			16									*07:04
			16									*07:19, 07:25, 08:01:01-08:05, 08:07- 08:08N, 08:10-08:11, 08:15, 08:17- 08:19N, 08:21-08:24, 08:26-08:27, 08:29-08:31, 08:33-08:39, 08:41- 08:48, 08:50-08:54, 08:56-08:59, 08:61, 08:63-08:69, 42:01:01- 42:01:02, 42:05:01-42:08, 42:10- 42:12, 42:14-42:16
												*07:27
		15									24	*07:65
			16									*08:09, 08:12:01-08:12:03, 08:16, 08:60, 15:51, 15:83, 15:179, 15:199, 15:218Q, 38:30, 42:04, 42:13, 44:14, 44:17, 44:51, 44:62, 44:123, 51:08, 51:20, 51:36, 51:44N, 51:97, 52:19, 53:22, 55:20, 56:13, 57:09, 57:24, 82:01-82:03
												*08:14, 08:28, 44:106
		15	16								24	*08:32, 35:87
13	14	15	16	17	18	19	20	21	22	23	24	Well No.

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Lot-specific information

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Length of spec.	210	95	200	200	210	145	135	120	80	110	95	205
PCR product(s)		135	235	255					215	145	215	
Well No.	1	2	3	4	5	6	7	8	9	10	11	12
*08:49, C*07:68	1											
*08:62											11	
*13:23, 40:47, 40:96, 40:157, 44:15, 44:55, 44:103, 49:02												12
*14:10, 38:20, 39:42, 44:117, 51:32												
*15:46, 15:53, 15:106, 15:143, 18:49, 35:03:03, 35:19, 35:27, 35:47, 35:56, 35:154, 40:10:01-40:10:02, 40:40, 40:49, 40:58, 40:129, 40:164, 44:09, 44:46, 44:75, 44:90, 44:129, 47:02, 50:13, 78:06						6						
*15:71, 15:175, 15:204, 15:210, 27:33, 40:46, 40:93, 48:22, 50:06												12
*15:202, 18:01:13, 18:04, 18:25, 18:43, 35:01:01-35:02:02, 35:02:04-35:03:02, 35:03:04- 35:08:01, 35:08:03-35:18, 35:20:01- 35:24:02, 35:28-35:37, 35:39-35:45, 35:48, 35:51, 35:53N-35:55, 35:57- 35:58, 35:60-35:62, 35:64-35:72, 35:74-35:83, 35:85-35:86, 35:88- 35:114, 35:116-35:153, 35:155- 35:161, 35:163, 39:19:01-39:19:02, 56:06, 78:01:01-78:05, 78:07						6						
*15:212, 35:63, 40:01:01-40:01:04, 40:01:06-40:06:03, 40:09, 40:11:01- 40:11:02, 40:14:01-40:14:03, 40:18, 40:20, 40:22N, 40:24, 40:26-40:31, 40:33-40:36, 40:38-40:39, 40:42- 40:45, 40:48, 40:50-40:57, 40:59- 40:67, 40:70-40:75, 40:77-40:92, 40:94-40:95, 40:97, 40:99-40:105, 40:107-40:108, 40:111-40:116, 40:118N-40:128, 40:130-40:134, 40:138-40:151, 40:154-40:156, 40:159-40:161, 40:163, 45:01-45:02, 45:04-45:08, 45:10-45:13, 50:01:01- 50:02, 50:04-50:05, 50:07-50:12						6						12
Well No.	1	2	3	4	5	6	7	8	9	10	11	12

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170	245	135	170	165	195	215	235	165	175	90	135	Length of spec.
255								270		345		PCR product(s)
13	14	15	16	17	18	19	20	21	22	23	24	Well No.
												*08:49, C*07:68
	14		16			19						*08:62
13												*13:23, 40:47, 40:96, 40:157, 44:15, 44:55, 44:103, 49:02
										23		*14:10, 38:20, 39:42, 44:117, 51:32
												*15:46, 15:53, 15:106, 15:143, 18:49, 35:03:03, 35:19, 35:27, 35:47, 35:56, 35:154, 40:10:01-40:10:02, 40:40, 40:49, 40:58, 40:129, 40:164, 44:09, 44:46, 44:75, 44:90, 44:129, 47:02, 50:13, 78:06
	14											*15:71, 15:175, 15:204, 15:210, 27:33, 40:46, 40:93, 48:22, 50:06
		15									24	*15:202, 18:01:13, 18:04, 18:25, 18:43, 35:01:01-35:02:02, 35:02:04-35:03:02, 35:03:04- 35:08:01, 35:08:03-35:18, 35:20:01- 35:24:02, 35:28-35:37, 35:39-35:45, 35:48, 35:51, 35:53N-35:55, 35:57- 35:58, 35:60-35:62, 35:64-35:72, 35:74-35:83, 35:85-35:86, 35:88- 35:114, 35:116-35:153, 35:155- 35:161, 35:163, 39:19:01-39:19:02, 56:06, 78:01:01-78:05, 78:07
	14											*15:212, 35:63, 40:01:01-40:01:04, 40:01:06-40:06:03, 40:09, 40:11:01- 40:11:02, 40:14:01-40:14:03, 40:18, 40:20, 40:22N, 40:24, 40:26-40:31, 40:33-40:36, 40:38-40:39, 40:42- 40:45, 40:48, 40:50-40:57, 40:59- 40:67, 40:70-40:75, 40:77-40:92, 40:94-40:95, 40:97, 40:99-40:105, 40:107-40:108, 40:111-40:116, 40:118N-40:128, 40:130-40:134, 40:138-40:151, 40:154-40:156, 40:159-40:161, 40:163, 45:01-45:02, 45:04-45:08, 45:10-45:13, 50:01:01- 50:02, 50:04-50:05, 50:07-50:12
13	14	15	16	17	18	19	20	21	22	23	24	Well No.

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Length of spec.	210	95	200	200	210	145	135	120	80	110	95	205
PCR product(s)		135	235	255					215	145	215	
Well No.	1	2	3	4	5	6	7	8	9	10	11	12
*18:01:01-18:01:12, 18:02-18:03, 18:05-18:06, 18:08, 18:10-18:11, 18:13-18:15, 18:17N, 18:19-18:24, 18:26-18:28, 18:30-18:36, 18:38- 18:42, 18:44-18:47, 18:50-18:53, 18:55, 18:57-18:63						6						
*18:07:01-18:07:02, 18:29, 35:50, 35:84, 35:162						6						
*18:09												
*18:12						6						12
*18:18				4		6						
*18:37, 39:31, 46:14, 54:02, 55:16, 73:01-73:02												
*18:48, 40:25, 40:69						6						
*18:54					5				9			
*18:56						6						
*27:01		2										12
*27:02:01-27:05:16, 27:07, 27:09- 27:10, 27:13-27:17, 27:19, 27:25, 27:27-27:29, 27:31-27:32, 27:34- 27:36, 27:38-27:39, 27:41-27:43, 27:45-27:56, 27:58-27:68, 27:70- 27:80		2										12
*27:06, 27:11, 27:20-27:21, 27:24, 27:30, 40:19, 40:76, 40:109, 40:117, 44:18, 49:01:01-49:01:03, 49:03- 49:09, 49:11-49:17												12
*27:08, 27:12, 27:18, 27:26, 27:40, 27:44		2										12
*27:23		2										
*27:37, 47:04		2										
*27:57		2										12
*27:69		2										12
*35:02:03						6						
*35:38, 35:115						6						
*35:52						6						
*35:59						6						
*38:17		2			5				9			
*40:01:05, 40:37, 40:135						6						12
*40:07, 40:162						6						12
Well No.	1	2	3	4	5	6	7	8	9	10	11	12

Lot No.: **53M**

Lot-specific information

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170	245	135	170	165	195	215	235	165	175	90	135	Length of spec.
255								270		345		PCR product(s)
13	14	15	16	17	18	19	20	21	22	23	24	Well No.
	14	15									24	*18:01:01-18:01:12, 18:02-18:03, 18:05-18:06, 18:08, 18:10-18:11, 18:13-18:15, 18:17N, 18:19-18:24, 18:26-18:28, 18:30-18:36, 18:38-18:42, 18:44-18:47, 18:50-18:53, 18:55, 18:57-18:63
	14	15				19					24	*18:07:01-18:07:02, 18:29, 35:50, 35:84, 35:162
13												*18:09
	14	15									24	*18:12
	14	15									24	*18:18
	14											*18:37, 39:31, 46:14, 54:02, 55:16, 73:01-73:02
	14											*18:48, 40:25, 40:69
												*18:54
	14	15	16								24	*18:56
13												*27:01
												*27:02:01-27:05:16, 27:07, 27:09-27:10, 27:13-27:17, 27:19, 27:25, 27:27-27:29, 27:31-27:32, 27:34-27:36, 27:38-27:39, 27:41-27:43, 27:45-27:56, 27:58-27:68, 27:70-27:80
												*27:06, 27:11, 27:20-27:21, 27:24, 27:30, 40:19, 40:76, 40:109, 40:117, 44:18, 49:01:01-49:01:03, 49:03-49:09, 49:11-49:17
	14											*27:08, 27:12, 27:18, 27:26, 27:40, 27:44
						19						*27:23
												*27:37, 47:04
								21				*27:57
										23		*27:69
											24	*35:02:03
		15	16								24	*35:38, 35:115
		15										*35:52
		15								23	24	*35:59
												*38:17
												*40:01:05, 40:37, 40:135
	14					19						*40:07, 40:162
13	14	15	16	17	18	19	20	21	22	23	24	Well No.

Lot No.: **53M**

Lot-specific information

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Length of spec.	210	95	200	200	210	145	135	120	80	110	95	205
PCR product(s)		135	235	255					215	145	215	
Well No.	1	2	3	4	5	6	7	8	9	10	11	12
*40:08, 40:68, 40:106						6						
*40:13												12
*40:15-40:16, 40:23, 40:32, 40:98, 40:158						6		8				12
*40:136, 41:01, 41:03:01-41:03:02, 41:06-41:09, 41:12, 41:14, 41:16-41:17, 45:09						6						12
*40:152						6						12
*40:153						6						12
*41:02:01-41:02:03, 41:04, 41:11, 41:13, 41:15, 41:18						6					11	12
*41:05						w						12
*41:10						6					11	12
*42:02, 42:09											11	
*45:03						6						12
*47:01:01:01-47:01:02, 47:06-47:08							7					
*47:03						w						
*47:05		2					7					
*51:103												
*53:03									9			
HLA-B allele												
Well No.	1	2	3	4	5	6	7	8	9	10	11	12

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*37 SSP subtyping.

In addition, wells number 2, 13 and 20 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 or the 3rd intron, matching the specificity-determining 3'-end of the primer is given. Nucleotide numbering as on the www.ebi.ac.uk/imgt/hla web site. The sequence of the 3 terminal nucleotides of the primer is given.

³The nucleotide position, in the 2nd, 3rd or 4th exon or 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 HLA-B*37:24 and 37:27 alleles can be distinguished by the different sizes of the specific PCR products generated by primer mix 21.

⁵Primer mix 2: Specific PCR fragment of 95 bp in the B*37:02 and in the B*27:01-27:02:02, 27:04:01-27:04:04, 27:08, 27:12, 27:15, 27:18, 27:23, 27:25-27:26, 27:31, 27:36, 27:40, 27:42, 27:44, 27:49, 27:52-27:53, 27:57, 27:61-27:63, 27:65N-27:69, 27:75, 27:77, 27:79 and 47:04-47:05 alleles. Specific PCR fragment of 135 bp in the B*37:28 and the B*07:27, 27:07, 27:09, 27:14, 27:19, 27:27, 27:32, 27:34-27:35, 27:41, 27:43, 27:46, 27:70, 27:76, 27:78 and 38:17 alleles. Specific PCR fragment of 95 and 135 bp in the 27:03, 27:05:02-27:05:16, 27:10, 27:13, 27:16-27:17, 27:28-27:29, 27:37-27:39, 27:45, 27:47-27:48, 27:50-27:51, 27:54-27:56, 27:58-27:60, 27:64N, 27:71-27:74 and 27:80 alleles.

Lot No.: **53M**

Lot-specific information

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170	245	135	170	165	195	215	235	165	175	90	135	Length of spec.
255								270		345		PCR product(s)
13	14	15	16	17	18	19	20	21	22	23	24	Well No.
	14					19						*40:08, 40:68, 40:106
						19						*40:13
	14											*40:15-40:16, 40:23, 40:32, 40:98, 40:158
	14		16									*40:136, 41:01, 41:03:01-41:03:02, 41:06-41:09, 41:12, 41:14, 41:16- 41:17, 45:09
	14							21				*40:152
	14								22			*40:153
	14		16									*41:02:01-41:02:03, 41:04, 41:11, 41:13, 41:15, 41:18
			16									*41:05
	14											*41:10
	14		16									*42:02, 42:09
	14			17								*45:03
												*47:01:01:01-47:01:02, 47:06-47:08
												*47:03
												*47:05
						19						*51:103
												*53:03
												HLA-B allele
13	14	15	16	17	18	19	20	21	22	23	24	Well No.

Primer mix 3: Specific PCR fragment of 200 bp in the B*37:13 allele. Specific PCR fragment of 235 bp in the B*37:03N allele.

Primer mix 4: Specific PCR fragment of 200 bp in the B*37:13 allele. Specific PCR fragment of 255 bp in the B*37:04:01-37:04:02 and B*18:18 alleles.

Primer mix 9: Specific PCR fragment of 80 bp in the B*37:08 and the B*07:27, 18:54, 38:17 and 53:03 alleles. Specific PCR fragment of 215 bp in the B*37:22 allele.

Primer mix 10: Specific PCR fragment of 110 bp in the B*37:26 allele. Specific PCR fragment of 145 bp in the B*37:14 allele.

Primer mix 11: Specific PCR fragment of 95 bp in the B*37:18 allele. Specific PCR fragment of 215 bp in the B*37:09 and the B*07:04, 07:19, 07:25, 08:01:01-08:05, 08:07-08:08N, 08:10-08:11, 08:14-08:15, 08:17-08:19N, 08:21-08:24, 08:26-08:39, 08:41-08:48, 08:50-08:54, 08:56-08:59, 08:61-08:69, 35:87, 41:02:01-41:02:03, 41:04, 41:10-41:11, 41:13, 41:15, 41:18, 42:01:01-42:02, 42:05:01-42:12, 42:14-42:16 and 44:106 alleles.

Primer mix 13: Specific PCR fragment of 170 bp in the B*37:15 allele. Specific PCR fragment of 255 bp in the B*37:10 and the B*13:23, 18:09, 27:01, 40:47, 40:96, 40:157, 44:15, 44:55, 44:103 and 49:02 alleles.

Primer mix 21: Specific PCR fragment of 165 bp in the B*37:27 and the B*27:57 alleles. Specific PCR fragment of 270 bp in the B*37:24 and the B*40:152 alleles.

Primer mix 23: Specific PCR fragment of 90 bp in the B*37:19 and in the B*14:10, 35:59, 38:20, 39:42 and 44:117 alleles. Specific PCR fragment of 345 bp in the B*37:23 and in the B*27:69 and 51:32 alleles.

'w', might be weakly amplified.

CELL LINE VALIDATION SHEET																			
HLA-B*37 SSP primer set																			
				Well															
				Prod. No.:															
				200845701	201159602	200845703	200845704	200845705	200845706	200845707	200960808	201079709	201159610	201079711	200960812	201159613	200960814	200845715	200845716
	IHC cell line		B*	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
1	9001 SA		*07:02	-	-	-	-	-	-	-	+	-	-	-	-	-	-	-	-
2	9280 LK707		*52:01	*73:01	-	-	-	-	-	-	-	-	-	-	-	-	+	-	-
3	9011 E4181324		*52:01		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
4	9275 GU373		*15:10	*53:01	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
5	9009 KAS011		*37:01		+	-	-	-	+	-	-	-	-	-	-	-	-	-	-
6	9353 SM		*39:01	*51:01	-	-	-	-	-	-	-	-	-	-	+	-	-	-	-
7	9020 QBL		*18:01		-	-	-	-	-	+	-	-	-	-	-	-	+	+	-
8	9025 DEU		*35:01		-	-	-	-	-	+	-	-	-	-	-	-	-	+	-
9	9026 YAR		*38:01		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
10	9107 LKT3		*54:01		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
11	9051 PITOUT		*44:03		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
12	9052 DBB		*57:01		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
13	9004 JESTHOM		*27:05		-	+	-	-	-	-	-	-	-	-	+	-	-	-	-
14	9071 OLGA		*15:01	*15:20	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
15	9075 DKB		*40:01		-	-	-	-	-	+	-	-	-	-	+	-	+	-	-
16	9037 SWEIG007		*40:02		-	-	-	-	-	+	-	-	-	-	+	-	+	-	-
17	9282 CTM3953540		*08:01	*55:01	-	-	-	-	-	-	-	-	-	+	-	-	-	-	+
18	9257 32367		*14:01	*56:01	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
19	9038 BM16		*18:01		-	-	-	-	-	+	-	-	-	-	-	-	+	+	-
20	9059 SLE005		*40:01		-	-	-	-	-	+	-	-	-	-	+	-	+	-	-
21	9064 AMALA		*15:01		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
22	9056 KOSE		*35:03		-	-	-	-	-	+	-	-	-	-	-	-	-	+	-
23	9124 IHL		*40:02	*56:02	-	-	-	-	-	+	-	-	-	-	+	-	+	-	-
24	9035 JBUSH		*38:01		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
25	9049 IBW9		*14:02		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
26	9285 WT49		*58:01		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
27	9191 CH1007		*07:05	*51:01	-	-	-	-	-	-	+	-	-	-	-	-	-	-	-
28	9320 BEL5GB		*44:02	*44:03	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
29	9050 MOU		*44:03		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
30	9021 RSH		*42:01		-	-	-	-	-	-	-	-	-	+	-	-	-	-	+
31	9019 DUCAF		*18:01		-	-	-	-	-	+	-	-	-	-	-	-	+	+	-
32	9297 HAG		*41:02		-	-	-	-	-	+	-	-	-	+	+	-	+	-	+
33	9098 MT14B		*40:01		-	-	-	-	-	+	-	-	-	-	+	-	+	-	-
34	9104 DHIF		*38:01		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
35	9302 SSTO		*44:02		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
36	9024 KT17		*15:01	*35:01	-	-	-	-	-	+	-	-	-	-	-	-	-	+	-
37	9065 HHKB		*07:02		-	-	-	-	-	-	+	-	-	-	-	-	-	-	-
38	9099 LZL		*15:01		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
39	9315 CML		*08:01	*27:05	-	+	-	-	-	-	-	-	-	+	+	-	-	-	+
40	9134 WHONP199		*13:02	*46:01	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
41	9055 H0301		*14:02		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
42	9066 TAB089		*46:01		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
43	9076 T7526		*46:01		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
44	9057 TEM		*38:01		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
45	9239 SHJO		*42:01	*50:01	-	-	-	-	-	+	-	-	-	+	+	-	+	-	+
46	9013 SCHU		*07:02		-	-	-	-	-	-	+	-	-	-	-	-	-	-	-
47	9045 TUBO		*51:01		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
48	9303 TER-ND		*35:01	*44:03	-	-	-	-	-	+	-	-	-	-	-	-	-	+	-

CELL LINE VALIDATION SHEET													
HLA-B*37 SSP primer set					Well								
					17	18	19	20	21	22	23	24	
					Prod. No.:	201079717	201079718	201079719	201079720	201159621	201079722	201079723	201159624
	IHWC cell line		B*										
1	9001 SA		*07:02		-	-	-	-	-	-	-	-	-
2	9280 LK707		*52:01	*73:01	-	-	-	-	-	-	-	-	-
3	9011 E4181324		*52:01		-	-	-	-	-	-	-	-	-
4	9275 GU373		*15:10	*53:01	-	-	-	-	-	-	-	-	-
5	9009 KAS011		*37:01		-	-	-	-	-	-	-	-	-
6	9353 SM		*39:01	*51:01	-	-	-	-	-	-	-	-	-
7	9020 QBL		*18:01		-	-	-	-	-	-	-	-	+
8	9025 DEU		*35:01		-	-	-	-	-	-	-	-	+
9	9026 YAR		*38:01		-	-	-	-	-	-	-	-	-
10	9107 LKT3		*54:01		-	-	-	-	-	-	-	-	-
11	9051 PITOUT		*44:03		-	-	-	-	-	-	-	-	-
12	9052 DBB		*57:01		-	-	-	-	-	-	-	-	-
13	9004 JESTHOM		*27:05		-	-	-	-	-	-	-	-	-
14	9071 OLGA		*15:01	*15:20	-	-	-	-	-	-	-	-	-
15	9075 DKB		*40:01		-	-	-	-	-	-	-	-	-
16	9037 SWEIG007		*40:02		-	-	-	-	-	-	-	-	-
17	9282 CTM3953540		*08:01	*55:01	-	-	-	-	-	-	-	-	-
18	9257 32367		*14:01	*56:01	-	-	-	-	-	-	-	-	-
19	9038 BM16		*18:01		-	-	-	-	-	-	-	-	+
20	9059 SLE005		*40:01		-	-	-	-	-	-	-	-	-
21	9064 AMALA		*15:01		-	-	-	-	-	-	-	-	-
22	9056 KOSE		*35:03		-	-	-	-	-	-	-	-	+
23	9124 IHL		*40:02	*56:02	-	-	-	-	-	-	-	-	-
24	9035 JBUSH		*38:01		-	-	-	-	-	-	-	-	-
25	9049 IBW9		*14:02		-	-	-	-	-	-	-	-	-
26	9285 WT49		*58:01		-	-	-	-	-	-	-	-	-
27	9191 CH1007		*07:05	*51:01	-	-	-	-	-	-	-	-	-
28	9320 BEL5GB		*44:02	*44:03	-	-	-	-	-	-	-	-	-
29	9050 MOU		*44:03		-	-	-	-	-	-	-	-	-
30	9021 RSH		*42:01		-	-	-	-	-	-	-	-	-
31	9019 DUCAF		*18:01		-	-	-	-	-	-	-	-	+
32	9297 HAG		*41:02		-	-	-	-	-	-	-	-	-
33	9098 MT14B		*40:01		-	-	-	-	-	-	-	-	-
34	9104 DHIF		*38:01		-	-	-	-	-	-	-	-	-
35	9302 SSTO		*44:02		-	-	-	-	-	-	-	-	-
36	9024 KT17		*15:01	*35:01	-	-	-	-	-	-	-	-	+
37	9065 HHKB		*07:02		-	-	-	-	-	-	-	-	-
38	9099 LZL		*15:01		-	-	-	-	-	-	-	-	-
39	9315 CML		*08:01	*27:05	-	-	-	-	-	-	-	-	-
40	9134 WHONP199		*13:02	*46:01	-	-	-	-	-	-	-	-	-
41	9055 H0301		*14:02		-	-	-	-	-	-	-	-	-
42	9066 TAB089		*46:01		-	-	-	-	-	-	-	-	-
43	9076 T7526		*46:01		-	-	-	-	-	-	-	-	-
44	9057 TEM		*38:01		-	-	-	-	-	-	-	-	-
45	9239 SHJO		*42:01	*50:01	-	-	-	-	-	-	-	-	-
46	9013 SCHU		*07:02		-	-	-	-	-	-	-	-	-
47	9045 TUBO		*51:01		-	-	-	-	-	-	-	-	-
48	9303 TER-ND		*35:01	*44:03	-	-	-	-	-	-	-	-	+

CERTIFICATE OF ANALYSIS

Olerup SSP® HLA-B*37 SSP

Product number: 101.541-06 – including *Taq* polymerase
Lot number: 53M
Expiry date: 2014-April-01
Number of tests: 6
Number of wells per test: 24

Well specifications:

Well No.	Production No.	Well No.	Production No.	Well No.	Production No.
1	2008-457-01	9	2010-797-09	17	2010-797-17
2	2011-596-02	10	2011-596-10	18	2010-797-18
3	2008-457-03	11	2010-797-11	19	2010-797-19
4	2008-457-04	12	2009-608-12	20	2010-797-20
5	2008-457-05	13	2011-596-13	21	2011-596-21
6	2008-457-06	14	2009-608-14	22	2010-797-22
7	2008-457-07	15	2008-457-15	23	2010-797-23
8	2009-608-08	16	2008-457-16	24	2011-596-24

The specificity of each primer solution of the HLA-B*37 primer set has been tested against 48 well characterized IHWC cell line DNAs.

No DNAs carrying the allele to be amplified by primer solutions 3, 4, 9, 10, 17, 18 and 20 to 23 were available.

The specificities of the primers in primer solutions 4, 9, 10 and 23 were tested by separately adding one additional 3'-primer, respectively one additional 5'-primer. In primer solutions 3, 20 and 21 the 5'-primers were tested by separately adding one additional 3'-primer, the 3'-primers were not possible to test. In primer solutions 17, 18 and 22 the 3'-primers were tested by separately adding one additional 3'-primer, the 5'-primers were not possible to test. In primer solutions 4, 10, 13 and 23 one 3'-primer was not possible to test, and in primer solutions 9 and 11 one 5'-primer was not possible to test.

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

Date of approval: 2011-November-09

Approved by:

Production Quality Control

Lot No.: **53M**

Lot-specific information

www.olerup-ssp.com

Declaration of Conformity

Product name: *Olerup* SSP® HLA-B*37
Product number: 101.541-06
Lot number: 53M

Intended use: HLA-B*37 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-November-09

Ann-Cathrin Jareman
Head of QA and Regulatory Affairs

Lot No.: **53M**

Lot-specific information

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