

Olerup SSP[®] HLA-C*14

Product number:	101.625-06u – without <i>Taq</i> polymerase
Lot number:	20L
Expiry date:	2013-September-01
Number of tests:	6
Number of wells per test:	23
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. 20L.

CHANGES COMPARED TO THE PREVIOUS *OLERUP SSP*[®] HLA-C*14 LOT

The HLA-C*14 specificity and interpretation tables have been updated for the HLA-C alleles described since the previous *Olerup SSP*[®] HLA-C*14 lot was made (Lot No. 50G).

Seven wells have been added to the HLA-C*14 kit, wells **17 to 23**.
The amplification patterns for some rare HLA-C*14 alleles only differ
by the length of the specific PCR products.

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

Well	5'-primer	3'-primer	rationale
1	-	Added	Primer added for the C*14:27 allele.
2	-	Added	Primer added for improved yield of specific primer pair.
7	Modified	Modified	Modified primers for improved yield of specific primer pair.
10	-	Added	Primer added for the C*14:21N allele.
12	Added	Added	Primer pair added for the C*14:23 allele.
14	-	Added	Primer added for the C*14:15 allele.
17	New	New	New primer pairs for the C*14:22 and C*14:27 alleles.

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18	New	New	New primer pairs for the C*14:17 and C*14:26 alleles.
19	New	New	New primer pairs for the C*14:18 and C*14:29 alleles.
20	New	New	New primer pairs for the C*14:19 and C*14:28 alleles.
21	New	New	New primer pair for the C*14:20 allele.
22	New	New	New primer pair for the C*14:24 allele.
23	New	New	New primer pair for the C*14:25 allele.

PRODUCT DESCRIPTION

HLA-C*14 SSP typing

CONTENT

The primer set contains 5'- and 3'-primers for identifying the C*14:02 to C*14:29 alleles.

PLATE LAYOUT

Each HLA-C*14 test consists of 23 PCR reactions in a 24 well cut PCR plate.

Well 24 is empty.

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

The 24 well cut PCR plate is marked with 'HLA-C*14' in silver/gray ink .

Well No. 1 is marked with the Lot No. '20L'.

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-C*14 SSP subtypings will be influenced by five C*01, five C*02, the C*03, most C*04, the C*05:01:12, most C*06, most C*07, most C*08, most C*12, five C*15, many C*16, the C*17 and the C*18 alleles when present on the other haplotype.

In addition, primer mix 4 will amplify the B*35:0802 and B*67:02 alleles, primer mix 7 will amplify the B*07:13 and B*07:15 alleles and primer mix 8 will amplify the B*55:30 allele.

UNIQUELY IDENTIFIED ALLELES

All the HLA-C*14 alleles, i.e. **C*14:02 to C*14:29**, recognized by the HLA Nomenclature Committee in January 2011¹ will be amplified by the primers in the HLA-C*14 SSP kit.

The C*14:18 and 14:29 alleles can be distinguished by the different sizes of the specific PCR products generated by primer mix 19.

The HLA-C*14 subtyping kit cannot distinguish the C*14:02:01 and 14:02:04-14:02:07 alleles.

¹HLA-C alleles listed on the IMGT/HLA web page 2011-January-14, release 3.3.0, www.ebi.ac.uk/imgt/hla.

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RESOLUTION IN HOMO- AND HETEROZYGOTES

A total of 34 alleles generate 29 amplification patterns that can be combined in 435 homozygous and heterozygous combinations. 284 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.

++-++++	+----+---	-----	*14:05, *14:10 = *14:09, *14:10
++-++++	+-----	-----	*14:03, *14:05 = *14:03, *14:09
++-++++	+-----	-----	*14:02:03, *14:05 = *14:02:03, *14:09
++-++++	+---+---	-----	*14:06, *14:10 = *14:10, *14:21N
++-++++	++-----	-----	*14:03, *14:06 = *14:03, *14:21N
++-++++	+---+---	+-----	*14:10, *14:16 = *14:10, *14:22 = *14:10, *14:27
++-++++	+---+---	-+-----	*14:10, *14:17 = *14:10, *14:26
++-++++	+---+---	----+---	*14:10, *14:19 = *14:10, *14:28
++-++++	+---+---	-----	*14:02:01, *14:10 = *14:02:02, *14:10 = *14:03, *14:14 = *14:10, *14:14
++-++++	+-----	+-----	*14:02:03, *14:22 = *14:03, *14:16 = *14:03, *14:22 = *14:03, *14:27
++-++++	+-----	-+-----	*14:03, *14:17 = *14:03, *14:26
++-++++	+-----	----+---	*14:03, *14:19 = *14:03, *14:28
++-++++	+-----	-----	*14:02:01, *14:03 = *14:02:02, *14:03
++-++++	++-----	-----	*14:02:03, *14:06 = *14:02:03, *14:21N
++-++++	+---+---	-+-----	*14:08, *14:17 = *14:08, *14:26
++-++++	+---+---	-----	*14:02:01, *14:08 = *14:02:02, *14:08 = *14:02:03, *14:23 = *14:08, *14:23
++-++++	+-----	+-----	*14:02:03, *14:16 = *14:02:03, *14:27
++-++++	+-----	-+-----	*14:02:03, *14:17 = *14:02:03, *14:26
++-++++	+-----	----+---	*14:02:03, *14:19 = *14:02:03, *14:28
++-++++	+-----	-----	*14:02:01, *14:02:03 = *14:02:02, *14:02:03
++-++++	+---+---	-----	*14:05, *14:08 = *14:08, *14:09
++-++++	+-----	-----	*14:04, *14:05 = *14:04, *14:09
++-++++	+-----+	-----	*14:05, *14:12 = *14:09, *14:12
++-++++	++-----	-----	*14:04, *14:06 = *14:04, *14:21N
++-++++	+-----	+-----	*14:04, *14:16 = *14:04, *14:27
++-++++	+-----	-+-----	*14:04, *14:17 = *14:04, *14:26
++-++++	+-----	----+---	*14:04, *14:19 = *14:04, *14:28
++-++++	+-----	-----	*14:02:01, *14:04 = *14:02:02, *14:04 = *14:04, *14:04
++-++++	+-----+	-----	*14:06, *14:12 = *14:12, *14:21N
++-++++	+-----+	+-----	*14:12, *14:16 = *14:12, *14:27
++-++++	+-----+	-+-----	*14:12, *14:17 = *14:12, *14:26
++-++++	+-----+	----+---	*14:12, *14:19 = *14:12, *14:28
++-++++	+-----+	-----	*14:02:01, *14:12 = *14:02:02, *14:12 = *14:12, *14:12
++-++++	+-----	+-----	*14:05, *14:22 = *14:09, *14:22
++-++++	++-----	+-----	*14:06, *14:22 = *14:21N, *14:22
++-++++	+-----	++-----	*14:17, *14:22 = *14:22, *14:26
++-++++	+-----	+---+---	*14:19, *14:22 = *14:22, *14:28
++-++++	+-----	+-----	*14:02:01, *14:22 = *14:02:02, *14:22 = *14:16, *14:22 = *14:22, *14:22 = *14:22, *14:27
++-++++	++-----	-----	*14:05, *14:21N = *14:09, *14:21N
++-++++	+---+---	-----	*14:05, *14:07N = *14:07N, *14:09
++-++++	+---+---	-----	*14:05, *14:23 = *14:09, *14:23
++-++++	+---+---	-----	*14:05, *14:14 = *14:09, *14:14
++-++++	+-----+	-----	*14:05, *14:11 = *14:09, *14:11
++-++++	+-----+	-----	*14:05, *14:13 = *14:09, *14:13
++-++++	+-----	+-----	*14:05, *14:27 = *14:09, *14:27
++-++++	+-----	-+-----	*14:05, *14:17 = *14:05, *14:26 = *14:09, *14:26
++-++++	+-----	----+---	*14:05, *14:18 = *14:09, *14:18

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+---+--- +----- -++---	*14:05, *14:19 = *14:09, *14:19
+---+--- +----- -++---	*14:05, *14:20 = *14:09, *14:20
+---+--- +----- -++---	*14:05, *14:24 = *14:09, *14:24
+---+--- +----- -++---	*14:05, *14:25 = *14:09, *14:25
+---+--- +----- -++---	*14:02:01, *14:05 = *14:02:01, *14:09 = *14:02:02, *14:05
+---+--- +----- -++---	*14:06, *14:07N = *14:07N, *14:21N
+---+--- +----- -++---	*14:06, *14:23 = *14:21N, *14:23
+---+--- +----- -++---	*14:06, *14:14 = *14:14, *14:21N
+---+--- +----- -++---	*14:15, *14:17 = *14:15, *14:26
+---+--- +----- -++---	*14:02:01, *14:15 = *14:02:02, *14:15 = *14:06, *14:11 = *14:11, *14:15 = *14:11, *14:21N = *14:15, *14:21N
+---+--- +----- -++---	*14:06, *14:13 = *14:13, *14:21N
+---+--- +----- -++---	*14:06, *14:27 = *14:16, *14:21N = *14:21N, *14:27
+---+--- +----- -++---	*14:06, *14:17 = *14:06, *14:26 = *14:17, *14:21N = *14:21N, *14:26
+---+--- +----- -++---	*14:06, *14:18 = *14:18, *14:21N
+---+--- +----- -++---	*14:06, *14:19 = *14:19, *14:21N = *14:21N, *14:28
+---+--- +----- -++---	*14:06, *14:20 = *14:20, *14:21N
+---+--- +----- -++---	*14:06, *14:24 = *14:21N, *14:24
+---+--- +----- -++---	*14:06, *14:25 = *14:21N, *14:25
+---+--- +----- -++---	*14:02:01, *14:06 = *14:02:01, *14:21N = *14:02:02, *14:06 = *14:02:02, *14:21N = *14:06, *14:21N = *14:21N, *14:21N
+---+--- +----- -++---	*14:07N, *14:16 = *14:07N, *14:27
+---+--- +----- -++---	*14:07N, *14:17 = *14:07N, *14:26
+---+--- +----- -++---	*14:07N, *14:19 = *14:07N, *14:28
+---+--- +----- -++---	*14:02:01, *14:07N = *14:02:02, *14:07N = *14:07N, *14:07N
+---+--- +----- -++---	*14:16, *14:23 = *14:23, *14:27
+---+--- +----- -++---	*14:17, *14:23 = *14:23, *14:26
+---+--- +----- -++---	*14:19, *14:23 = *14:23, *14:28
+---+--- +----- -++---	*14:02:01, *14:23 = *14:02:02, *14:23 = *14:23, *14:23
+---+--- +----- -++---	*14:14, *14:16 = *14:14, *14:27
+---+--- +----- -++---	*14:14, *14:17 = *14:14, *14:26
+---+--- +----- -++---	*14:14, *14:19 = *14:14, *14:28
+---+--- +----- -++---	*14:02:01, *14:14 = *14:02:02, *14:14 = *14:14, *14:14
+---+--- +----- -++---	*14:11, *14:16 = *14:11, *14:27
+---+--- +----- -++---	*14:11, *14:17 = *14:11, *14:26
+---+--- +----- -++---	*14:11, *14:19 = *14:11, *14:28
+---+--- +----- -++---	*14:02:01, *14:11 = *14:02:02, *14:11 = *14:11, *14:11
+---+--- +----- -++---	*14:13, *14:16 = *14:13, *14:27
+---+--- +----- -++---	*14:13, *14:17 = *14:13, *14:26
+---+--- +----- -++---	*14:13, *14:19 = *14:13, *14:28
+---+--- +----- -++---	*14:02:01, *14:13 = *14:02:02, *14:13 = *14:13, *14:13
+---+--- +----- -++---	*14:16, *14:17 = *14:16, *14:26 = *14:17, *14:27 = *14:26, *14:27
+---+--- +----- -++---	*14:16, *14:18 = *14:18, *14:27
+---+--- +----- -++---	*14:16, *14:19 = *14:19, *14:27 = *14:27, *14:28
+---+--- +----- -++---	*14:16, *14:20 = *14:20, *14:27
+---+--- +----- -++---	*14:16, *14:24 = *14:24, *14:27
+---+--- +----- -++---	*14:16, *14:25 = *14:25, *14:27
+---+--- +----- -++---	*14:02:01, *14:16 = *14:02:01, *14:27 = *14:02:02, *14:16 = *14:02:02, *14:27 = *14:16, *14:27 = *14:27, *14:27
+---+--- +----- -++---	*14:17, *14:18 = *14:18, *14:26
+---+--- +----- -++---	*14:17, *14:19 = *14:19, *14:26 = *14:26, *14:28
+---+--- +----- -++---	*14:17, *14:20 = *14:20, *14:26
+---+--- +----- -++---	*14:17, *14:24 = *14:24, *14:26
+---+--- +----- -++---	*14:17, *14:25 = *14:25, *14:26
+---+--- +----- -++---	*14:02:01, *14:17 = *14:02:01, *14:26 = *14:02:02, *14:26 = *14:17, *14:26 = *14:26, *14:26



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+---+---	+-----	---+---	*14:18, *14:19 = *14:18, *14:28
+---+---	+-----	---+---	*14:02:01, *14:18 = *14:02:02, *14:18 = *14:18, *14:18
+---+---	+-----	---+---	*14:19, *14:20 = *14:20, *14:28
+---+---	+-----	---+---	*14:19, *14:24 = *14:24, *14:28
+---+---	+-----	---+---	*14:19, *14:25 = *14:25, *14:28
+---+---	+-----	---+---	*14:02:01, *14:19 = *14:02:01, *14:28 = *14:02:02, *14:19 = *14:19, *14:19 = *14:19, *14:28
+---+---	+-----	---+---	*14:02:01, *14:20 = *14:02:02, *14:20 = *14:20, *14:20
+---+---	+-----	---+---	*14:02:01, *14:24 = *14:02:02, *14:24 = *14:24, *14:24
+---+---	+-----	---+---	*14:02:01, *14:25 = *14:02:02, *14:25 = *14:25, *14:25
+---+---	+-----	---+---	*14:02:01, *14:02:01 = *14:02:01, *14:02:02
+---+---	+-----	---+---	*14:02:02, *14:17 = *14:17, *14:17
+---+---	+-----	---+---	*14:05, *14:15 = *14:09, *14:15
+---+---	+-----	---+---	*14:05, *14:06 = *14:06, *14:09
+---+---	+-----	---+---	*14:05, *14:16 = *14:09, *14:16
+---+---	+-----	---+---	*14:05, *14:05 = *14:05, *14:09
+---+---	+-----	---+---	*14:06, *14:15 = *14:15, *14:15
+---+---	+-----	---+---	*14:02:03, *14:10 = *14:03, *14:10 = *14:10, *14:10
+---+---	+-----	---+---	*14:02:03, *14:03 = *14:03, *14:03

*14:02:01 = *14:02:01 and 14:02:04-14:02:07

*14:18 = *14:18 and 14:29

SPECIFICITY TABLE

HLA-C*14 SSP subtyping

Specificities and sizes of the PCR products of the 23 primer mixes used for HLA-C*14 SSP subtyping

Primer Mix	Size of spec. PCR product ¹	Size of control band ²	Amplified HLA-C*14 alleles ³	Other amplified HLA Class I alleles ⁴
1	145 bp	800 bp	*14:02:01-14:02:02, 14:02:04-14:02:07, 14:04-14:07N, 14:09, 14:11-14:29	*07:64
2	145 bp	1070 bp	*14:02:03, 14:03, 14:08, 14:10	*04:01:01:01-04:01:22, 04:01:24-04:01:26, 04:04:01-04:05, 04:07-04:15:03, 04:17-04:20, 04:23-04:25, 04:26 ^w , 04:27-04:41, 04:43-04:55, 04:57-04:70, 04:72-04:79, 04:81-04:84, 15:36
3	245 bp	800 bp	*14:04, 14:12	*04:01:01:01-04:01:26, 04:04:01-04:05, 04:07-04:10, 04:12-04:15:03, 04:17-04:20, 04:23-04:25, 04:26 ^w , 04:27-04:28, 04:30-04:35, 04:37-04:41, 04:43-04:54, 04:56-04:70, 04:72-04:79, 04:81-04:84, 15:36
4	140 bp	1070 bp	*14:02:03, 14:03, 14:08, 14:10, 14:22	*01:21, 02:12 ^w , 02:27:01-02:27:02, 04:11, 04:29, 04:36, 04:55, 07:02:09, 08:01:01-08:09, 08:11-08:46, 12:02:01-12:03:03, 12:03:05-12:03:08, 12:03:10-12:03:15, 12:06-12:08, 12:10:01-12:20, 12:22-12:26, 12:28-12:32, 12:34-12:40, 12:42Q-12:51, 15:07, 15:21 ^w , 15:25, 16:01:01, 16:01:03-16:01:06, 16:04:01, 16:06-16:08, 16:10-16:11, 16:13-16:18, 16:20-16:24, 16:26-16:32, B*35:08:02, B*67:02

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5	210 bp	1070 bp	*14:02:01- 14:04, 14:07N, 14:10-14:14, 14:17-14:27, 14:29	
6⁵	130 bp	1070 bp	*14:05, 14:09	*03:02:01-03:04:20, 03:06- 03:13, 03:15-03:24, 03:26, 03:28-03:43:01, 03:44-03:57, 03:59-03:85, 03:88, 03:91- 03:93, 03:95-03:98, 03:100- 03:101, 03:104-03:108, 04:15:01-04:15:03, 04:17, 04:80, 06:02:08, 16:01:06
7⁵	130 bp	1070 bp	*14:04	*01:17, 01:23, 03:15, 03:27, 03:38:01-03:38:02, 03:69, 04:01:23, 06:02:01:01- 06:02:01:02, 06:02:03-06:04, 06:06-06:43, 06:45-06:58, 07:01:01-07:02:07, 07:02:10- 07:20, 07:22-07:33N, 07:35- 07:38, 07:41-07:68, 07:70- 07:71, 07:73-07:151, 07:153- 07:155, 07:157-07:171, 12:03:04, 12:03:09, 12:04:01, 17:01:01:01-17:01:03, 17:01:05-17:08, 18:01-18:04, B*07:13, B*07:15
8	210 bp	1070 bp	*14:03, 14:10, 14:22	*01:48, 02:12 ^w , 02:27:01- 02:27:02, 03:02:01-03:04:16, 03:04:18-03:06, 03:08-03:09, 03:10 ^w , 03:12-03:14, 03:16- 03:17, 03:19-03:28, 03:29 ^w , 03:30-03:36, 03:38:01- 03:38:02, 03:40-03:44, 03:46- 03:49, 03:51-03:63, 03:65- 03:98, 03:100-03:106, 03:108, 07:20, 07:96, 07:127, 15:07, 15:21 ^w , 15:25, 15:43, B*55:30
9	140 bp	1070 bp	*14:02:01, 14:02:03-14:08, 14:10-14:16, 14:18-14:27, 14:29	*03:17, 03:71, 04:37, 06:02:08, 16:01:06
10^{5,6}	100 bp, 210 bp	1070 bp	*14:06, 14:15, 14:21N	

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11	205 bp	1070 bp	*14:07N	
12⁷	225 bp, 320 bp	1070 bp	*14:08, 14:23	
13^{5,8}	125 bp, 285 bp	1070 bp	*14:10, 14:14	*04:52, 04:55
14⁹	200 bp, 290 bp	1070 bp	*14:11, 14:15	
15	150 bp	800 bp	*14:12	*01:14, 02:02:13, 03:07, 03:10, 03:15, 03:29, 03:45, 04:01:23, 05:01:12, 06:02:01:01-06:02:01:02, 06:02:03-06:04, 06:06-06:10, 06:12-06:58, 07:07, 07:09, 07:76, 12:04:01, 17:01:01:01- 17:01:03, 17:01:05-17:08, 18:01-18:04
16	410 bp	1070 bp	*14:13	*03:15, 03:32, 03:45, 03:60, 04:01:01:01-04:01:04, 04:01:06, 04:01:08, 04:01:10- 04:01:26, 04:03-04:04:01, 04:05-04:10, 04:12-04:20, 04:23-04:32, 04:34-04:54, 04:56-04:84, 06:02:08, 18:01- 18:04
17¹⁰	150 bp, 210 bp	1070 bp	*14:16, 14:22, 14:27	*02:17
18^{5,11}	90 bp, 185 bp	1070 bp	*14:17, 14:26	
19^{5,12}	85 bp, 185 bp	1070 bp	*14:18, 14:29	
20^{5,13}	105 bp, 140 bp	1070 bp	*14:19, 14:28	*03:88
21	230 bp	1070 bp	*14:20	
22⁵	95 bp	1070 bp	*14:24	
23	230 bp	1070 bp	*14:25	*02:17

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-C*14 resolution 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 length of the specific PCR product(s) of the alleles amplified by these primer mixes is 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.

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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-C*14 SSP subtyping.

In addition, wells number 3 and 15 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 C*14:18 and 14:29 alleles can be distinguished by the different sizes of the specific PCR products generated by primer mix 19.

⁴Due to the sharing of sequence motifs between HLA-C alleles non-HLA-C*14 alleles will be amplified by primer mixes 1 to 4, 6 to 9, 13, 15 to 17, 20 and 23. In addition, primer mix 4 will amplify the B*35:0802 and B*67:02 alleles, primer mix 7 will amplify the B*07:13 and B*07:15 alleles and primer mix 8 will amplify the B*55:30 allele.

⁵Specific PCR fragments shorter than 130 base pairs have a lower intensity and are less sharp than longer PCR bands.

⁶Primer mix 10: specific PCR product of 100 bp in the C*14:21N allele. Specific PCR product of 210 bp in the C*14:06 and 14:15 alleles.

⁷Primer mix 12: specific PCR product of 225 bp in the C*14:08 allele. Specific PCR product of 320 bp in the C*14:23 allele.

⁸Primer mix 13: specific PCR product of 125 bp in the C*14:14 allele. Specific PCR product of 285 bp in the C*14:10 and the C*04:52 and 04:55 alleles.

⁹Primer mix 14: specific PCR product of 200 bp in the C*14:15 allele. Specific PCR product of 290 bp in the C*14:11 allele.

¹⁰Primer mix 17: specific PCR product of 150 bp in the C*14:22 and 14:27 alleles. Specific PCR product of 210 bp in the C*14:16 and the C*02:17 alleles.

¹¹Primer mix 18: specific PCR product of 90 bp in the C*14:26 allele. Specific PCR product of 185 bp in the C*14:17 allele.

¹²Primer mix 19: specific PCR product of 85 bp in the C*14:18 allele. Specific PCR product of 185 bp in the C*14:29 allele.

¹³Primer mix 20: specific PCR product of 105 bp in the C*14:19 and the C*03:88 alleles. Specific PCR product of 140 bp in the C*14:28 allele.

'w', may be weakly amplified.

INTERPRETATION TABLE

HLA-C*14 SSP subtyping

Amplification patterns of the HLA-C*14:02 to 14:29 alleles

	Well ⁶											
	1	2	3	4	5	6	7	8	9	10	11	12
Length of spec.	145	145	245	140	210	130	130	210	140	100	205	225
PCR product(s)										210		320
Length of int.	800	1070	800	1070	1070	1070	1070	1070	1070	1070	1070	1070
pos. control ¹												
5'-primer ²	98	98	98	201	368	368	201	134	361	368	419	356
	5'-CTC 3'	5'-CTC 3'	5'-CTC 3'	5'-CCA 3'	5'-gTT 3'	5'-gTA 3'	5'-CCg 3'	5'-CCA 3'	5'-AgT 3'	5'-gTT 3'	5'-gTC 3'	5'-CCC 3'
												3 rd I
												5'-TgT 3'
3'-primer(s) ³	201	201	302	302	538	459	289	302	459	426	585	538
	5'-CTC 3'	5'-CTT 3'	5'-ggT 3'	5'-ggC 3'	5'-CCg 3'	5'-AgA 3'	5'-AgC 3'	5'-ggC 3'	5'-AgA 3'	5'-TCT 3'	5'-AgT 3'	5'-CCg 3'
	205						289			539		872
	5'-CCT 3'						5'-AgC 3'			5'-TCA 3'		5'-CCA 3'
Well No.	1	2	3	4	5	6	7	8	9	10	11	12
HLA-C allele ⁴												
*14:02:01, 14:02:04-14:02:07	1				5				9			
*14:02:02	1				5							
*14:02:03		2		4	5				9			
*14:03		2		4	5			8	9			
*14:04	1		3		5		7		9			
*14:05	1					6			9			
*14:06	1								9	10		
*14:07N	1				5				9		11	
*14:08		2		4					9			12
*14:09	1					6						
*14:10		2		4	5			8	9			
*14:11	1				5				9			
*14:12	1		3		5				9			
*14:13	1				5				9			
*14:14	1				5				9			
*14:15	1								9	10		
Well No.	1	2	3	4	5	6	7	8	9	10	11	12

INTERPRETATION TABLE											
HLA-C*14 SSP subtyping											
Amplification patterns of the HLA-C*14:02 to 14:29 alleles											
Well ⁶											
13	14	15	16	17	18	19	20	21	22	23	
125	200	150	410	150	90	85	105	230	95	230	Length of spec.
285	290			210	185	185	140				PCR product(s)
1070	1070	800	1070	1070	1070	1070	1070	1070	1070	1070	Length of int.
											pos. control ¹
98	368	201	341	98	368	98	361	368	406	368	5'-primer ²
5'-CTC ^{3'}	5'-gTT ^{3'}	5'-CCg ^{3'}	5'-ggA ^{3'}	5'-CTC ^{3'}	5'-gTT ^{3'}	5'-CTC ^{3'}	5'-AgC ^{3'}	5'-gTT ^{3'}	5'-gCC ^{3'}	5'-gTT ^{3'}	
				368		368	395				
				5'-gTT ^{3'}		5'-gTT ^{3'}	5'-gCA ^{3'}				
180	527	312	459	205	419	142	459	559	459	559	3'-primer(s) ³
5'-TCC ^{3'}	5'-CCg ^{3'}	5'-AgT ^{3'}	5'-AgA ^{3'}	5'-CCT ^{3'}	5'-CgA ^{3'}	5'-TgA ^{3'}	5'-AgA ^{3'}	5'-CAg ^{3'}	5'-AgA ^{3'}	5'-CTC ^{3'}	
343	619			538	512	511					
5'-T ^{3'}	5'-TTT ^{3'}			5'-CCA ^{3'}	5'-CCA ^{3'}	5'-CCg ^{3'}					
13	14	15	16	17	18	19	20	21	22	23	Well No.
											HLA-C allele ⁴
											*14:02:01, 14:02:04-14:02:07
											*14:02:02
											*14:02:03
											*14:03
											*14:04
											*14:05
											*14:06
											*14:07N
											*14:08
											*14:09
13											*14:10
	14										*14:11
		15									*14:12
			16								*14:13
13											*14:14
	14										*14:15
13	14	15	16	17	18	19	20	21	22	23	Well No.

Lot No.: **20L**

Lot-specific information

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Length of spec.	145	145	245	140	210	130	130	210	140	100	205	225
PCR product(s)										210		320
Well No.	1	2	3	4	5	6	7	8	9	10	11	12
*14:16	1								9			
*14:17	1				5							
*14:18, 14:29 ⁵	1				5				9			
*14:19	1				5				9			
*14:20	1				5				9			
*14:21N	1				5				9	10		
*14:22	1			4	5			8	9			
*14:23	1				5				9			12
*14:24	1				5				9			
*14:25	1				5				9			
*14:26	1				5				9			
*14:27	1				5				9			
*14:28	1											
*01:14, 02:02:13, 05:01:12, 06:44												
*01:17, 01:23, 06:11, 07:01:01-07:02:07, 07:02:10-07:06, 07:08, 07:10-07:19, 07:22-07:33N, 07:35-07:38, 07:41-07:63, 07:65-07:68, 07:70-07:71, 07:73-07:75, 07:77-07:95, 07:97-07:126, 07:128-07:151, 07:153-07:155, 07:157-07:171, 12:03:04, 12:03:09, <i>B*07:13, B*07:15</i>							7					
*01:21, 07:02:09, 08:01:01-08:09, 08:11-08:46, 12:02:01-12:03:03, 12:03:05-12:03:08, 12:03:10-12:03:15, 12:06-12:08, 12:10:01-12:20, 12:22-12:26, 12:28-12:32, 12:34-12:40, 12:42Q-12:51, 16:01:01, 16:01:03-16:01:05, 16:04:01, 16:06-16:08, 16:10-16:11, 16:13-16:18, 16:20-16:24, 16:26-16:32, <i>B*35:08:02, B*67:02</i>				4								
*01:48, 03:05, 03:14, 03:25, 03:43:02, 03:58, 03:86-03:87, 03:89-03:90, 03:94, 03:102-03:103, 15:43, <i>B*55:30</i>								8				
Well No.	1	2	3	4	5	6	7	8	9	10	11	12



Lot No.: **20L**

Lot-specific information

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125	200	150	410	150	90	85	105	230	95	230	Length of spec. PCR product(s)
13	14	15	16	17	18	19	20	21	22	23	Well No.
				17							*14:16
					18						*14:17
						19					*14:18, 14:29 ⁵
							20				*14:19
								21			*14:20
											*14:21N
				17							*14:22
											*14:23
									22		*14:24
										23	*14:25
					18						*14:26
				17							*14:27
							20				*14:28
		15									*01:14, 02:02:13, 05:01:12, 06:44
											*01:17, 01:23, 06:11, 07:01:01- 07:02:07, 07:02:10-07:06, 07:08, 07:10-07:19, 07:22- 07:33N, 07:35-07:38, 07:41- 07:63, 07:65-07:68, 07:70- 07:71, 07:73-07:75, 07:77- 07:95, 07:97-07:126, 07:128- 07:151, 07:153-07:155, 07:157- 07:171, 12:03:04, 12:03:09, <i>B*07:13, B*07:15</i>
											*01:21, 07:02:09, 08:01:01- 08:09, 08:11-08:46, 12:02:01- 12:03:03, 12:03:05-12:03:08, 12:03:10-12:03:15, 12:06- 12:08, 12:10:01-12:20, 12:22- 12:26, 12:28-12:32, 12:34- 12:40, 12:42Q-12:51, 16:01:01, 16:01:03-16:01:05, 16:04:01, 16:06-16:08, 16:10-16:11, 16:13- 16:18, 16:20-16:24, 16:26- 16:32, <i>B*35:08:02, B*67:02</i>
											*01:48, 03:05, 03:14, 03:25, 03:43:02, 03:58, 03:86-03:87, 03:89-03:90, 03:94, 03:102- 03:103, 15:43, <i>B*55:30</i>
13	14	15	16	17	18	19	20	21	22	23	Well No.



Lot No.: **20L**

Lot-specific information

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Length of spec.	145	145	245	140	210	130	130	210	140	100	205	225
PCR product(s)										210		320
Well No.	1	2	3	4	5	6	7	8	9	10	11	12
*02:12, 15:21				w				w				
*02:17												
*02:27:01-02:27:02, 15:07, 15:25				4				8				
*03:02:01-03:04:16, 03:04:18-03:04:20, 03:06, 03:08-03:09, 03:12-03:13, 03:16, 03:19-03:24, 03:26, 03:28, 03:30-03:31, 03:33-03:36, 03:40-03:43:01, 03:44, 03:46-03:49, 03:51-03:57, 03:59, 03:61-03:63, 03:65-03:68, 03:70, 03:72-03:85, 03:91-03:93, 03:95-03:98, 03:100-03:101, 03:104-03:106, 03:108							6	8				
*03:04:17, 03:11:01-03:11:02, 03:18, 03:37, 03:39, 03:50, 03:64, 03:107						6						
*03:07						6						
*03:10, 03:29						6		w				
*03:15						6	7					
*03:17, 03:71						6		8	9			
*03:27, 07:20, 07:96, 07:127							7	8				
*03:32, 03:60						6		8				
*03:38:01-03:38:02, 03:69						6	7	8				
*03:45						6						
*03:88						6		8				
*04:01:01:01-04:01:04, 04:01:06, 04:01:08, 04:01:10-04:01:22, 04:01:24-04:01:26, 04:04:01, 04:05, 04:07-04:10, 04:12-04:14, 04:18-04:20, 04:23-04:25, 04:27-04:28, 04:30-04:32, 04:34-04:35, 04:38-04:41, 04:43-04:51, 04:53-04:54, 04:57-04:70, 04:72-04:79, 04:81-04:84		2	3									
*04:01:05, 04:01:07, 04:01:09, 04:04:02, 04:33, 15:36		2	3									
Well No.	1	2	3	4	5	6	7	8	9	10	11	12

Lot No.: **20L**

Lot-specific information

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125	200	150	410	150	90	85	105	230	95	230	Length of spec.
285	290			210	185	185	140				PCR product(s)
13	14	15	16	17	18	19	20	21	22	23	Well No.
											*02:12, 15:21
				17						23	*02:17
											*02:27:01-02:27:02, 15:07, 15:25
											*03:02:01-03:04:16, 03:04:18- 03:04:20, 03:06, 03:08-03:09, 03:12-03:13, 03:16, 03:19- 03:24, 03:26, 03:28, 03:30- 03:31, 03:33-03:36, 03:40- 03:43:01, 03:44, 03:46-03:49, 03:51-03:57, 03:59, 03:61- 03:63, 03:65-03:68, 03:70, 03:72-03:85, 03:91-03:93, 03:95- 03:98, 03:100-03:101, 03:104- 03:106, 03:108
											*03:04:17, 03:11:01-03:11:02, 03:18, 03:37, 03:39, 03:50, 03:64, 03:107
		15									*03:07
		15									*03:10, 03:29
		15	16								*03:15
											*03:17, 03:71
											*03:27, 07:20, 07:96, 07:127
			16								*03:32, 03:60
											*03:38:01-03:38:02, 03:69
		15	16								*03:45
							20				*03:88
			16								*04:01:01:01-04:01:04, 04:01:06, 04:01:08, 04:01:10- 04:01:22, 04:01:24-04:01:26, 04:04:01, 04:05, 04:07-04:10, 04:12-04:14, 04:18-04:20, 04:23- 04:25, 04:27-04:28, 04:30- 04:32, 04:34-04:35, 04:38- 04:41, 04:43-04:51, 04:53- 04:54, 04:57-04:70, 04:72- 04:79, 04:81-04:84
											*04:01:05, 04:01:07, 04:01:09, 04:04:02, 04:33, 15:36
13	14	15	16	17	18	19	20	21	22	23	Well No.

Length of spec.	145	145	245	140	210	130	130	210	140	100	205	225
PCR product(s)										210		320
Well No.	1	2	3	4	5	6	7	8	9	10	11	12
*04:01:23			3				7					
*04:03, 04:06, 04:16, 04:42, 04:71												
*04:11		2		4								
*04:15:01-04:15:03, 04:17		2	3			6						
*04:26		w	w									
*04:29, 04:36		2		4								
*04:37		2	3						9			
*04:52		2	3									
*04:55		2		4								
*04:56			3									
*04:80						6						
*06:02:01:01-06:02:01:02, 06:02:03-06:02:07, 06:02:09-06:04, 06:06-06:10, 06:12-06:43, 06:45-06:58, 07:07, 07:09, 07:76, 12:04:01, 17:01:01:01-17:01:03, 17:01:05-17:08							7					
*06:02:08						6	7		9			
*07:64	1						7					
*16:01:06				4		6			9			
*18:01-18:04							7					
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-C*14 SSP subtyping.

In addition, wells number 3 and 15 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 and 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, 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-Cw*1401 nucleotide sequence has been shown to be identical to C*14:02.

⁵The C*14:18 and 14:29 alleles can be distinguished by the different sizes of the specific PCR products generated by primer mix 19.

Lot No.: **20L**

Lot-specific information

www.olerup-ssp.com

125	200	150	410	150	90	85	105	230	95	230	Length of spec.
285	290			210	185	185	140				PCR product(s)
13	14	15	16	17	18	19	20	21	22	23	Well No.
		15	16								*04:01:23
			16								*04:03, 04:06, 04:16, 04:42, 04:71
											*04:11
			16								*04:15:01-04:15:03, 04:17
			16								*04:26
			16								*04:29, 04:36
			16								*04:37
13			16								*04:52
13											*04:55
			16								*04:56
			16								*04:80
		15									*06:02:01:01-06:02:01:02, 06:02:03-06:02:07, 06:02:09- 06:04, 06:06-06:10, 06:12- 06:43, 06:45-06:58, 07:07, 07:09, 07:76, 12:04:01, 17:01:01:01-17:01:03, 17:01:05- 17:08
		15	16								*06:02:08
											*07:64
											*16:01:06
		15	16								*18:01-18:04
13	14	15	16	17	18	19	20	21	22	23	Well No.

⁶Primer mix 10: specific PCR product of 100 bp in the C*14:21N allele. Specific PCR product of 210 bp in the C*14:06 and 14:15 alleles.

Primer mix 12: specific PCR product of 225 bp in the C*14:08 allele. Specific PCR product of 320 bp in the C*14:23 allele.

Primer mix 13: specific PCR product of 125 bp in the C*14:14 allele. Specific PCR product of 285 bp in the C*14:10 and the C*04:52 and 04:55 alleles.

Primer mix 14: specific PCR product of 200 bp in the C*14:15 allele. Specific PCR product of 290 bp in the C*14:11 allele.

Primer mix 17: specific PCR product of 150 bp in the C*14:22 and 14:27 alleles. Specific PCR product of 210 bp in the C*14:16 and the C*02:17 alleles.

Primer mix 18: specific PCR product of 90 bp in the C*14:26 allele. Specific PCR product of 185 bp in the C*14:17 allele.

Primer mix 19: specific PCR product of 85 bp in the C*14:18 allele. Specific PCR product of 185 bp in the C*14:29 allele.

Primer mix 20: specific PCR product of 105 bp in the C*14:19 and the C*03:88 alleles. Specific PCR product of 140 bp in the C*14:28 allele.

'w', may be weakly amplified.

CELL LINE VALIDATION SHEET																				
HLA-C*14 SSP primer set																				
				Well																
				1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	
				Prod. No.:	201183701	201183702	200853503	200965804	200965805	200853506	201183707	200853508	200853509	201183710	200853511	201183712	201183713	201183714	200965815	200965816
IHCW cell line			C*																	
1	9001	SA	*07:02		-	-	-	-	-	-	+	-	-	-	-	-	-	-	-	-
2	9280	LK707	*07:01	*15:05	-	-	-	-	-	-	+	-	-	-	-	-	-	-	-	-
3	9011	E4181324	*12:02		-	-	-	+	-	-	-	-	-	-	-	-	-	-	-	-
4	9275	GU373	*03:04	*04:01	-	+	+	-	-	+	-	+	-	-	-	-	-	-	-	+
5	9009	KAS011	*06:02		-	-	-	-	-	-	+	-	-	-	-	-	-	-	-	+
6	9353	SM	*03:04	*07:02	-	-	-	-	-	+	+	+	-	-	-	-	-	-	-	-
7	9020	QBL	*05:01		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
8	9025	DEU	*04:01		-	+	+	-	-	-	+	-	-	-	-	-	-	-	-	+
9	9026	YAR	*12:03		-	-	-	+	-	-	-	-	-	-	-	-	-	-	-	-
10	9107	LKT3	*01:02		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
11	9051	PITOUT	*16:01		-	-	-	+	-	-	-	-	-	-	-	-	-	-	-	-
12	9052	DBB	*06:02		-	-	-	-	-	-	+	-	-	-	-	-	-	-	+	-
13	9004	JESTHOM	*01:02		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
14	9071	OLGA	*01:02	*03:04	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
15	9075	DKB	*03:04		-	-	-	-	-	+	-	+	-	-	-	-	-	-	-	-
16	9037	SWEIG007	*02:02		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
17	9282	CTM3953540	*03:03	*07:01	-	-	-	-	-	+	+	+	-	-	-	-	-	-	-	-
18	9257	32367	*01:02	*07:05	-	-	-	-	-	-	+	-	-	-	-	-	-	-	-	-
19	9038	BM16	*07:01		-	-	-	-	-	-	+	-	-	-	-	-	-	-	-	-
20	9059	SLE005	*03:04		-	-	-	-	-	+	-	+	-	-	-	-	-	-	-	-
21	9064	AMALA	*03:03		-	-	-	-	-	+	-	+	-	-	-	-	-	-	-	-
22	9056	KOSE	*12:03		-	-	-	+	-	-	-	-	-	-	-	-	-	-	-	-
23	9124	IHL	*01:02	*15:02	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
24	9035	JBUSH	*12:03		-	-	-	+	-	-	-	-	-	-	-	-	-	-	-	-
25	9049	IBW9	*08:02		-	-	-	+	-	-	-	-	-	-	-	-	-	-	-	-
26	9285	WT49	*07:01		-	-	-	-	-	-	+	-	-	-	-	-	-	-	-	-
27	9191	CH1007	*07:04	*15:05	-	-	-	-	-	-	+	-	-	-	-	-	-	-	-	-
28	9320	BEL5GB	*05:01	*16:01	-	-	-	+	-	-	-	-	-	-	-	-	-	-	-	-
29	9050	MOU	*16:01		-	-	-	+	-	-	-	-	-	-	-	-	-	-	-	-
30	9021	RSH	*17:01		-	-	-	-	-	-	+	-	-	-	-	-	-	-	+	-
31	9019	DUCAF	*05:01		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
32	9297	HAG	*17:01	*17:03	-	-	-	-	-	-	+	-	-	-	-	-	-	-	+	-
33	9098	MT14B	*03:04		-	-	-	-	-	+	-	+	-	-	-	-	-	-	-	-
34	9104	DHIF	*12:03		-	-	-	+	-	-	-	-	-	-	-	-	-	-	-	-
35	9302	SSTO	*05:01		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
36	9024	KT17	*03:03	*04:01	-	+	+	-	-	+	-	+	-	-	-	-	-	-	-	+
37	9065	HHKB	*07:02		-	-	-	-	-	-	+	-	-	-	-	-	-	-	-	-
38	9099	LZL	*03:03		-	-	-	-	-	+	-	+	-	-	-	-	-	-	-	-
39	9315	CML	*02:02	*07:01	-	-	-	-	-	-	+	-	-	-	-	-	-	-	-	-
40	9134	WHONP199	*01:02	*06:02	-	-	-	-	-	-	+	-	-	-	-	-	-	-	+	-
41	9055	H0301	*08:02		-	-	-	+	-	-	-	-	-	-	-	-	-	-	-	-
42	9066	TAB089	*01:02		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
43	9076	T7526	*01:02	*08:01	-	-	-	+	-	-	-	-	-	-	-	-	-	-	-	-
44	9057	TEM	*12:03		-	-	-	+	-	-	-	-	-	-	-	-	-	-	-	-
45	9239	SHJO	*06:02	*17:01	-	-	-	-	-	-	+	-	-	-	-	-	-	-	+	-
46	9013	SCHU	*07:02		-	-	-	-	-	-	+	-	-	-	-	-	-	-	-	-
47	9045	TUBO	*07:04	*15:02	-	-	-	-	-	-	+	-	-	-	-	-	-	-	-	-
48	9303	TER-ND	*04:01	*16:01	-	+	+	+	-	-	-	-	-	-	-	-	-	-	-	+

CELL LINE VALIDATION SHEET											
HLA-C*14 SSP primer set											
				Well							
				17	18	19	20	21	22	23	
				Prod. No.:	201183717	201183718	201183719	201183720	201183721	201183722	201183723
IHWC cell line			C*								
1	9001	SA	*07:02	-	-	-	-	-	-	-	-
2	9280	LK707	*07:01	*15:05	-	-	-	-	-	-	-
3	9011	E4181324	*12:02		-	-	-	-	-	-	-
4	9275	GU373	*03:04	*04:01	-	-	-	-	-	-	-
5	9009	KAS011	*06:02		-	-	-	-	-	-	-
6	9353	SM	*03:04	*07:02	-	-	-	-	-	-	-
7	9020	QBL	*05:01		-	-	-	-	-	-	-
8	9025	DEU	*04:01		-	-	-	-	-	-	-
9	9026	YAR	*12:03		-	-	-	-	-	-	-
10	9107	LKT3	*01:02		-	-	-	-	-	-	-
11	9051	PITOUT	*16:01		-	-	-	-	-	-	-
12	9052	DBB	*06:02		-	-	-	-	-	-	-
13	9004	JESTHOM	*01:02		-	-	-	-	-	-	-
14	9071	OLGA	*01:02	*03:04	-	-	-	-	-	-	-
15	9075	DKB	*03:04		-	-	-	-	-	-	-
16	9037	SWEIG007	*02:02		-	-	-	-	-	-	-
17	9282	CTM3953540	*03:03	*07:01	-	-	-	-	-	-	-
18	9257	32367	*01:02	*07:05	-	-	-	-	-	-	-
19	9038	BM16	*07:01		-	-	-	-	-	-	-
20	9059	SLE005	*03:04		-	-	-	-	-	-	-
21	9064	AMALA	*03:03		-	-	-	-	-	-	-
22	9056	KOSE	*12:03		-	-	-	-	-	-	-
23	9124	IHL	*01:02	*15:02	-	-	-	-	-	-	-
24	9035	JBUSH	*12:03		-	-	-	-	-	-	-
25	9049	IBW9	*08:02		-	-	-	-	-	-	-
26	9285	WT49	*07:01		-	-	-	-	-	-	-
27	9191	CH1007	*07:04	*15:05	-	-	-	-	-	-	-
28	9320	BEL5GB	*05:01	*16:01	-	-	-	-	-	-	-
29	9050	MOU	*16:01		-	-	-	-	-	-	-
30	9021	RSH	*17:01		-	-	-	-	-	-	-
31	9019	DUCAF	*05:01		-	-	-	-	-	-	-
32	9297	HAG	*17:01	*17:03	-	-	-	-	-	-	-
33	9098	MT14B	*03:04		-	-	-	-	-	-	-
34	9104	DHIF	*12:03		-	-	-	-	-	-	-
35	9302	SSTO	*05:01		-	-	-	-	-	-	-
36	9024	KT17	*03:03	*04:01	-	-	-	-	-	-	-
37	9065	HHKB	*07:02		-	-	-	-	-	-	-
38	9099	LZL	*03:03		-	-	-	-	-	-	-
39	9315	CML	*02:02	*07:01	-	-	-	-	-	-	-
40	9134	WHONP199	*01:02	*06:02	-	-	-	-	-	-	-
41	9055	H0301	*08:02		-	-	-	-	-	-	-
42	9066	TAB089	*01:02		-	-	-	-	-	-	-
43	9076	T7526	*01:02	*08:01	-	-	-	-	-	-	-
44	9057	TEM	*12:03		-	-	-	-	-	-	-
45	9239	SHJO	*06:02	*17:01	-	-	-	-	-	-	-
46	9013	SCHU	*07:02		-	-	-	-	-	-	-
47	9045	TUBO	*07:04	*15:02	-	-	-	-	-	-	-
48	9303	TER-ND	*04:01	*16:01	-	-	-	-	-	-	-

CERTIFICATE OF ANALYSIS

Olerup SSP® HLA-C*14 SSP

Product number: 101.625-06u – without *Taq* polymerase
Lot number: 20L
Expiry date: 2013-September-01
Number of tests: 6
Number of wells per test: 23

Well specifications:

Well No.	Production No.	Well No.	Production No.	Well No.	Production No.
1	2011-837-01	9	2008-535-09	17	2011-837-17
2	2011-837-02	10	2011-837-10	18	2011-837-18
3	2008-535-03	11	2008-535-11	19	2011-837-19
4	2009-658-04	12	2011-837-12	20	2011-837-20
5	2009-658-05	13	2011-837-13	21	2011-837-21
6	2008-535-06	14	2011-837-14	22	2011-837-22
7	2011-837-07	15	2009-658-15	23	2011-837-23
8	2008-535-08	16	2009-658-16		

The specificity of each primer solution of the HLA-C*14 primer set has been tested against 48 well characterized IHWC cell line DNAs.

No DNAs carrying the alleles to be amplified by primer mixes 10 to 14 and 17 to 23 were available. The specificities of the primers in primer solutions 10, 12 to 14, 17 to 19, 21 and 23 were tested by separately adding one additional 5'-primer, respectively one additional 3'-primer. In primer solution 11, it was only possible to test the 5'-primer, the 3'-primer was not possible to test. In primer solutions 20 and 22, it was only possible to test the 3'-primers, the 5'-primers were not possible to test. In primer solutions 1, 10, 12 to 14, 17 and 19 one of the 3'-primers was not possible to test, and in primer solution 12 one of the 5'-primers was not possible to test. Finally, one additional 5'-primer in primer solution 6 was tested by adding one additional 3'-primer.

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

Date of approval: 2011-April-01

Approved by:

Quality Control, Supervisor

Declaration of Conformity

Product name: *Olerup* SSP® HLA-C*14
Product number: 101.625-06u
Lot number: 20L

Intended use: HLA-C*14 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 III, 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.

Saltsjöbaden, Sweden
2011- April-01

Olle Olerup
Managing Director

Lot No.: **20L**

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**.