

Olerup SSP® HLA-C*02

Product number:	101.622-12 – including <i>Taq</i> polymerase
Lot number:	02K
Expiry date:	2012-May-01
Number of tests:	12
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. 02K.

CHANGES COMPARED TO THE PREVIOUS *OLERUP SSP*® HLA-C*02 Lot

The HLA-C*02 specificity and interpretation tables have been updated for the HLA-C alleles described since the previous *Olerup SSP*® HLA-C*02 lot was made (Lot No. 74F).

Eight wells has been added to the C*02 kit,
wells **17** to **24**.

The amplification patterns for some rare HLA-C*02 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
3	-	Added	Primer added for the C*02:31 allele.
4	Removed	-	Primer for the C*02:21 allele removed.
8	-	Added	Primer added for the C*02:33 allele.
11	-	Added	Primer added for the C*02:32 allele.
13	Moved	Moved, added	Primer pair to well 17, primer added for increased yield of the C*02:12 allele.
17	New, added	New, added	Primer pair from well 13, new primer pair for the C*02:31 allele.

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18	New	New	New primer pairs for the C*02:26:01 and C*02:26:02 alleles.
19	New	New	New primer pair for the C*02:28 allele.
20	New	New	New primer pair for the C*02:24 allele.
21	New	New	New primer pairs for the C*02:25Q and C*02:30 alleles.
22	New	New	New primer pair for the C*02:34 allele.
23	New	New	New primer pairs for the C*02:29 and C*02:35 alleles.
24	New	New	New primer pair for the C*02:36 allele.

Change in revision R01 compared to R00:

1. Primer mix 9 does not amplify the C*02:14 allele. This has been corrected in the specificity and amplification tables.

PRODUCT DESCRIPTION

HLA-C*02 SSP typing

INTENDED USE

The primer set contains 5'- and 3'-primers for identifying the C*02:02 to C*02:36 alleles.

PLATE LAYOUT

Each HLA-C*02 test consists of 24 10 µl 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-C*02' in silver/gray ink.

Well No. 1 is marked with the Lot No. '02K'.

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*02 SSP subtypings will be influenced by other HLA-C alleles, as primer mixes 1, 5 to 8, 10, 12, 16, 18, 19, 21, 22 and 24 amplify non-HLA-C*02 alleles. In addition, primer mix 3 will amplify the B*27:34, 40:02:07, 40:06:02 and weakly the B*57:03:02 allele, primer mix 5 will amplify the B*07:02:07 allele, primer mix 16 will amplify the B*58:02 allele and primer mix 19 will weakly amplify the B*73:01 allele.

UNIQUELY IDENTIFIED ALLELES

All the HLA-C*02 alleles, i.e. **C*02:02 to C*02:36**, recognized by the HLA Nomenclature Committee in April 2010¹ will be amplified by the primers in the HLA-C*02 SSP kit.

The HLA-C*02 subtyping kit cannot distinguish the C*02:02:01-02:02:03 and 02:02:06-02:02:11 alleles or the C*02:26:01 and C*02:26:02 alleles.

The C*02:15 and 02:21 alleles may be distinguished by the different sizes of the specific PCR products generated by primer mix 15.

The C*02:25Q and 02:30 alleles may be distinguished by the different sizes of the specific PCR products generated by primer mix 21.

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

RESOLUTION IN HOMO- AND HETEROZYGOTES

The 35 phenotypically different HLA-C*02 alleles give rise to 35 different amplification patterns. The C*02:15 and C*02:21 alleles and the C*02:25Q and C*02:30 alleles have patterns that only differ in size of specific PCR product. The C*02:02:05 has a different pattern than the other C*02:02 alleles, and the C*02:16:01 and C*02:16:02 alleles have different patterns. These amplification patterns can be combined in 630 homozygous and heterozygous combinations. 401 of these genotypes do not give rise to unique amplification patterns. The different lengths of the specific PCR products generated by primer mixes 3, 5, 8, 11, 12, 15, 17, 21 and 23 were not considered in these calculations.

+++++---	++-----	+-----	02:05, 02:31 = 02:22, 02:31
+++++---	++-----	-----	02:05, 02:20 = 02:20, 02:22
++++---+	++-----	+-----	02:08, 02:31 = 02:31, 02:33
++++---+	++-----	-----	02:08, 02:20 = 02:20, 02:33
++++-----	+++-----+	--+-----	02:03, 02:09 = 02:18, 02:28
++++-----	+++-----+	-----+-	02:18, 02:29 = 02:18, 02:35
++++-----	+++-----+	-----	02:02, 02:18 = 02:09, 02:16:02 = 02:09, 02:18 = 02:18, 02:20
++++-----	+++-----	+-----	02:09, 02:31 = 02:31, 02:32
++++-----	+++-----	-----	02:09, 02:20 = 02:20, 02:32
++++-----	+++-----	+-----	02:11, 02:31 = 02:14, 02:31
++++-----	+++-----	-----	02:11, 02:20 = 02:14, 02:20
++++-----	+++-----	+-----	02:12, 02:31 = 02:27, 02:31
++++-----	+++-----	-----	02:12, 02:20 = 02:20, 02:27
++++-----	+++-----+	+-----	02:16:01, 02:31 = 02:16:02, 02:31
++++-----	+++-----+	--+-----	02:03, 02:29 = 02:03, 02:35
++++-----	+++-----+	--+-----	02:02, 02:03 = 02:03, 02:20 = 02:03, 02:28 = 02:16:02, 02:28
++++-----	+++-----+	-----+-	02:16:02, 02:29 = 02:16:02, 02:35
++++-----	+++-----+	-----	02:02, 02:16:02 = 02:16:01, 02:20 = 02:16:02, 02:20
++++-----	+++-----	+-----+-	02:29, 02:31 = 02:31, 02:35
++++-----	+++-----	+-----+	02:20, 02:23 = 02:23, 02:31 = 02:31, 02:36
++++-----	+++-----	+-----	02:02, 02:31 = 02:02:05, 02:31 = 02:10, 02:31 = 02:20, 02:31 = 02:31, 02:31
++++-----	+++-----	-----+-	02:20, 02:29 = 02:20, 02:35
++++-----	+++-----	-----	02:02, 02:20 = 02:02:05, 02:20 = 02:10, 02:20 = 02:20, 02:20
+++++---	++-----	-----	02:04, 02:05 = 02:04, 02:22
+++++---	++-----	-----	02:04, 02:08 = 02:04, 02:33
+++++---	+++-----	-----	02:04, 02:09 = 02:04, 02:32
+++++---	+++-----	-----	02:04, 02:11 = 02:04, 02:14
+++++---	+++-----	-----	02:04, 02:12 = 02:04, 02:27
+++++---	+++-----	-----+-	02:04, 02:29 = 02:04, 02:35
+++++---	+++-----	-----	02:02, 02:04 = 02:02:05, 02:04 = 02:04, 02:04 = 02:04, 02:10
+++++---	++-----	-----	02:05, 02:19 = 02:19, 02:22
+++++---	++-----	-----	02:05, 02:07 = 02:07, 02:22
+++++---	++-----	-----	02:05, 02:08 = 02:08, 02:22 = 02:22, 02:33
+++++---	+++-----	-----	02:05, 02:09 = 02:09, 02:22 = 02:22, 02:32
+++++---	+++-----	-----+-	02:17, 02:29 = 02:17, 02:35
+++++---	+++-----	-----	02:02, 02:17 = 02:05, 02:11 = 02:11, 02:17 = 02:11, 02:22 = 02:14, 02:22 = 02:17, 02:22
+++++---	+++-----	-----	02:05, 02:27 = 02:12, 02:22 = 02:22, 02:27
+++++---	+++-----	-----	02:05, 02:13 = 02:13, 02:22

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++---+--- ++---+--	02:05,02:15 = 02:15,02:22
++---+--- ++----- +-----+	02:05,02:23 = 02:22,02:23
++---+--- ++----- -+-----	02:05,02:26 = 02:22,02:26
++---+--- ++----- --+-----	02:05,02:28 = 02:22,02:28
++---+--- ++----- ---+-----	02:05,02:24 = 02:22,02:24
++---+--- ++----- ----+---	02:05,02:25Q = 02:22,02:25Q
++---+--- ++----- -----+--	02:05,02:34 = 02:22,02:34
++---+--- ++----- -----+-	02:05,02:29 = 02:05,02:35 = 02:22,02:29 = 02:22,02:35
++---+--- ++----- -----+	02:05,02:36 = 02:22,02:36
++---+--- ++----- -----	02:02,02:05 = 02:02,02:22 = 02:02:05,02:22 = 02:05,02:22 = 02:10,02:22 = 02:22,02:22
++---+-- + +-----	02:08,02:19 = 02:19,02:33
++---+-- + +-----	02:09,02:19 = 02:19,02:32
++---+-- + +-----	02:11,02:19 = 02:14,02:19
++---+-- + +-----	02:12,02:19 = 02:19,02:27
++---+-- + +----- +-----+	02:06,02:23 = 02:19,02:23
++---+-- + +----- -----++	02:06,02:29 = 02:06,02:35
++---+-- + +----- -----+-	02:19,02:29 = 02:19,02:35
++---+-- + +----- -----+	02:02,02:06 = 02:06,02:19 = 02:06,02:36 = 02:19,02:36
++---+-- + +----- -----	02:02,02:19 = 02:02:05,02:19 = 02:10,02:19 = 02:19,02:19
++---++ + +-----	02:07,02:08 = 02:07,02:33
++---+-- + +-----	02:07,02:09 = 02:07,02:32
++---+-- + +-----	02:07,02:11 = 02:07,02:14
++---+-- + +-----	02:07,02:12 = 02:07,02:27
++---+-- + +----- +-----+	02:07,02:29 = 02:07,02:35
++---+-- + +----- -----	02:02,02:07 = 02:02:05,02:07 = 02:07,02:07 = 02:07,02:10
++-----+ + +-----	02:08,02:09 = 02:08,02:32 = 02:09,02:33
++-----+ + +-----	02:08,02:11 = 02:08,02:14 = 02:11,02:33
++-----+ + +-----	02:08,02:12 = 02:08,02:27 = 02:27,02:33
++-----+ + +-----	02:08,02:13 = 02:13,02:33
++-----+ + +-----	02:08,02:15 = 02:15,02:33
++-----+ + +----- +-----+	02:08,02:23 = 02:23,02:33
++-----+ + +----- -+-----	02:08,02:26 = 02:26,02:33
++-----+ + +----- --+-----	02:08,02:28 = 02:28,02:33
++-----+ + +----- ---+-----	02:08,02:24 = 02:24,02:33
++-----+ + +----- ----+---	02:08,02:25Q = 02:25Q,02:33
++-----+ + +----- -----+--	02:08,02:34 = 02:33,02:34
++-----+ + +----- -----+-	02:08,02:29 = 02:08,02:35 = 02:29,02:33 = 02:33,02:35
++-----+ + +----- -----+	02:08,02:36 = 02:33,02:36
++-----+ + +----- -----	02:02,02:08 = 02:02,02:33 = 02:02:05,02:08 = 02:08,02:08 = 02:08,02:10 = 02:08,02:33
++----- + + +-----	02:09,02:11 = 02:09,02:14 = 02:11,02:32
++----- + + +-----	02:09,02:12 = 02:09,02:27 = 02:27,02:32
++----- + + +-----	02:09,02:13 = 02:13,02:32
++----- + + +-----	02:09,02:15 = 02:15,02:32
++----- + + +----- +-----+	02:09,02:23 = 02:23,02:32
++----- + + +----- -+-----	02:09,02:26 = 02:26,02:32
++----- + + +----- --+-----	02:09,02:28 = 02:28,02:32
++----- + + +----- ---+-----	02:09,02:24 = 02:24,02:32
++----- + + +----- ----+---	02:09,02:25Q = 02:25Q,02:32
++----- + + +----- -----+--	02:09,02:34 = 02:32,02:34
++----- + + +----- -----+-	02:09,02:29 = 02:09,02:35 = 02:29,02:32 = 02:32,02:35
++----- + + +----- -----+	02:09,02:36 = 02:32,02:36

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++-----	+++-----	-----	02:02,02:09 = 02:02,02:32 = 02:02:05,02:09 =
			02:09,02:09 = 02:09,02:10 = 02:09,02:32
++-----	++-++----	-----	02:11,02:12 = 02:11,02:27 = 02:14,02:27
++-----	++++++-	-----	02:11,02:13 = 02:13,02:14
++-----	++++++-	-----	02:11,02:15 = 02:14,02:15
++-----	++-+-----	+-----+	02:11,02:23 = 02:14,02:23
++-----	++-+-----	-+-----	02:11,02:26 = 02:14,02:26
++-----	++-+-----	--+-----	02:11,02:28 = 02:14,02:28
++-----	++-+-----	---+-----	02:11,02:24 = 02:14,02:24
++-----	+++-----	-----+	02:11,02:25Q = 02:14,02:25Q
++-----	+++-----	-----+	02:11,02:34 = 02:14,02:34
++-----	+++-----	-----+	02:11,02:29 = 02:11,02:35 = 02:14,02:29 =
			02:14,02:35
++-----	+++-----	-----+	02:11,02:36 = 02:14,02:36
++-----	++-+-----	-----	02:02,02:11 = 02:02,02:14 = 02:02:05,02:11 =
			02:10,02:11 = 02:11,02:11 = 02:11,02:14
++-----	++-+++-	-----	02:12,02:13 = 02:13,02:27
++-----	++-+++-	-----	02:12,02:15 = 02:15,02:27
++-----	++-+++-	+-----+	02:12,02:23 = 02:23,02:27
++-----	++-+++-	-+-----	02:12,02:26 = 02:26,02:27
++-----	++-+++-	--+-----	02:12,02:28 = 02:27,02:28
++-----	++-+++-	---+-----	02:12,02:24 = 02:24,02:27
++-----	++-+++-	-----+	02:12,02:25Q = 02:25Q,02:27
++-----	++-+++-	-----+	02:12,02:34 = 02:27,02:34
++-----	++-+++-	-----+	02:12,02:29 = 02:12,02:35 = 02:27,02:29 =
			02:27,02:35
++-----	+++-----	-----+	02:12,02:36 = 02:27,02:36
++-----	+++-----	-----	02:02,02:12 = 02:02,02:27 = 02:02:05,02:27 =
			02:10,02:27 = 02:12,02:27 = 02:27,02:27
++-----	+++-----	-----+	02:13,02:29 = 02:13,02:35
++-----	+++-----	-----	02:02,02:13 = 02:02:05,02:13 = 02:10,02:13 =
			02:13,02:13
++-----	+++-----	-----+	02:15,02:29 = 02:15,02:35
++-----	+++-----	-----	02:02,02:15 = 02:02:05,02:15 = 02:10,02:15 =
			02:15,02:15
++-----	+++-----	-----+	02:16:01,02:29 = 02:16:01,02:35
++-----	+++-----	+-----+	02:23,02:29 = 02:23,02:35
++-----	+++-----	+-----+	02:02,02:23 = 02:02:05,02:23 = 02:10,02:23 =
			02:23,02:23 = 02:23,02:36
++-----	+++-----	-+-----	02:26,02:29 = 02:26,02:35
++-----	+++-----	-+-----	02:02,02:26 = 02:02:05,02:26 = 02:10,02:26
++-----	+++-----	--+-----	02:28,02:29 = 02:28,02:35
++-----	+++-----	--+-----	02:02,02:28 = 02:02:05,02:28 = 02:10,02:28 =
			02:28,02:28
++-----	+++-----	---+-----	02:24,02:29 = 02:24,02:35
++-----	+++-----	---+-----	02:02,02:24 = 02:02:05,02:24 = 02:10,02:24 =
			02:24,02:24
++-----	+++-----	---+-----	02:25Q,02:29 = 02:25Q,02:35
++-----	+++-----	---+-----	02:02,02:25Q = 02:02:05,02:25Q =
			02:10,02:25Q = 02:25Q,02:25Q
++-----	+++-----	---+-----	02:29,02:34 = 02:34,02:35
++-----	+++-----	---+-----	02:02,02:34 = 02:02:05,02:34 = 02:10,02:34 =
			02:34,02:34
++-----	+++-----	---+-----	02:29,02:36 = 02:35,02:36
++-----	+++-----	---+-----	02:02,02:29 = 02:02,02:35 = 02:02:05,02:29 =
			02:02:05,02:35 = 02:10,02:35 = 02:29,02:35 =
			02:35,02:35
++-----	+++-----	---+-----	02:02,02:36 = 02:02:05,02:36 = 02:10,02:36 =
			02:36,02:36

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++----- ++----- -----	02:02,02:02 = 02:02,02:02:05 = 02:02,02:10
++----- -+----- -----+	02:10,02:29 = 02:29,02:29
++----- +++-----+ -----	02:02:05,02:18 = 02:10,02:18
++----- ++-----+ --+-----	02:02:05,02:03 = 02:03,02:10
++----- ++-----+ -----	02:02:05,02:16:02 = 02:10,02:16:02
+---+--- ++-----+ -----	02:02:05,02:17 = 02:05,02:14 = 02:05,02:17 =
	02:10,02:17 = 02:14,02:17 = 02:17,02:17
+---+--- ++-----+ -----	02:02:05,02:05 = 02:05,02:05 = 02:05,02:10
+---+--- ++-----+ -----+	02:02:05,02:06 = 02:06,02:06 = 02:06,02:10
+-----+ ++-----+ -----	02:02:05,02:33 = 02:10,02:33 = 02:33,02:33
+-----+ +++-----+ -----	02:02:05,02:32 = 02:10,02:32
+-----+ ++-----+ -----	02:02:05,02:14 = 02:10,02:14 = 02:14,02:14
+-----+ ++-----+ -----	02:02:05,02:12 = 02:10,02:12 = 02:12,02:12
+-----+ ++-----+ -----	02:02:05,02:16:01 = 02:10,02:16:01
+-----+ ++-----+ -----	02:02:05,02:02:05 = 02:02:05,02:10
--+----- +++-----+ --+-----	02:03,02:18 = 02:03,02:32
--+----- +++-----+ -----	02:16:01,02:18 = 02:16:02,02:18 =
	02:16:02,02:32 = 02:18,02:18 = 02:18,02:32
--+----- ++-----+ --+-----	02:03,02:03 = 02:03,02:16:01 =
	02:03,02:16:02
--+----- ++-----+ -----	02:16:01,02:16:02 = 02:16:02,02:16:02

02:02 = 02:02:01-02:02:03 and 02:02:06-02:02:11

02:26 = 02:26:01-02:26:02

02:15 = 02:15 and 02:21

02:25Q = 02:25Q and 02:30

SPECIFICITY TABLE

HLA-C*02 SSP subtyping

Specificities and sizes of the PCR products of the 24 primer mixes used for HLA-C*02 SSP subtyping

Primer Mix	Size of spec. PCR product ¹	Size of control band ²	Amplified HLA-C*02 alleles ³	Other amplified HLA Class I alleles ⁴
1	250 bp	800 bp	*02:02:01-02:02:03, 02:02:05-02:02:11, 02:04-02:15, 02:17, 02:19-02:31, 02:33-02:36	*01:04, 01:09, 01:21, 05:08, 06:02:01:01-06:02:01:02, 06:02:03-06:03, 06:07-06:37, 08:27, 08:29, 08:31, 12:02:01-12:08, 12:10:01-12:13, 12:15-12:17, 12:21-12:23, 12:25-12:35, 14:16, 16:04:01, 18:03
2⁵	95 bp	800 bp	*02:02:01-02:02:03, 02:02:06-02:02:11, 02:04, 02:07-02:09, 02:11, 02:13, 02:15, 02:19-02:31, 02:34-02:36	
3^{5,8}	95 bp, 120 bp	800 bp	*02:03, 02:16:02, 02:18, 02:20, 02:31	B*27:34, B*40:02:07, B*40:06:02, B*57:03:02^w
4	150 bp	1070 bp	*02:04	
5⁹	145 bp, 240 bp	1070 bp	*02:05, 02:17, 02:22	*01:10, 06:08, 08:31, B*07:02:07
6	160 bp	800 bp	*02:06, 02:19	*01:09, 03:21, 03:80, 12:15
7⁵	130 bp	800 bp	*02:07	*16:10
8^{5,10}	70 bp, 280 bp	1070 bp	*02:08, 02:33	*03:64, 15:10:02
9	200 bp	1070 bp	*02:02:01-02:02:03, 02:02:05-02:09, 02:11-02:13, 02:15-02:28, 02:30-02:36	
10^{5,7}	125 bp	1070 bp	*02:02:01-02:02:03, 02:02:05-02:25Q, 02:27-02:36	*04:03, 04:06, 05:26, 15:11
11^{5,11}	85 bp, 170 bp	800 bp	*02:09, 02:18, 02:32	
12¹²	150 bp, 230 bp	1070 bp	*02:11, 02:14, 02:17	*04:42, 06:05 ^w , 07:02:09, 12:16, 15:23, 16:21

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13⁶	225 bp	1070 bp	*02:12, 02:27	
14⁵	80 bp	800 bp	*02:13	
15^{5,13}	130 bp, 190 bp	1070 bp	*02:15, 02:21	
16⁷	250 bp	1070 bp	*02:03, 02:16:01- 02:16:02, 02:18	*01:22, 01:35, 04:04:01- 04:04:02, 04:06, 04:13, 04:34, 04:58, 05:11, 05:17, 05:27, 06:04, 08:01:01-08:01:02, 08:03:01-08:04, 08:06, 08:08-08:11, 08:13, 08:14, 08:16, 08:20- 08:22, 08:24, 08:26N, 12:14:01-12:14:02, 12:18, 12:20, 14:06, 14:15, 15:02:01-15:07, 15:09- 15:13, 15:15-15:24, 15:26-15:28, 17:01:01:01-17:06, B*58:02
17^{5,14}	110 bp, 160 bp	1070 bp	*02:23, 02:31	
18⁶	235 bp	800 bp	*02:26:01-02:26:02	*03:07, 03:10, 03:15, 03:29, 03:45, 04:16, 04:42, 05:01:01:01- 05:01:13, 05:03-05:12, 05:14-05:19, 05:21- 05:25, 05:27-05:29, 05:31-05:42, 06:02:01:01-06:02:01:02, 06:02:03-06:10, 06:12- 06:17, 06:19-06:32, 06:34-06:37, 07:07, 07:09, 07:76, 08:10, 12:04:01-12:05, 12:09, 12:21, 12:33, 15:02:01- 15:06:02, 15:08-15:10:02, 15:12, 15:13, 15:15- 15:24, 15:26-15:28, 16:02:01-16:02:04, 16:09, 16:12, 16:19, 17:01:01:01-17:06, 18:01-18:03
19	210 bp	1070 bp	*02:03, 02:28	*01:06, 03:36, 03:77, 04:34, 05:12, 07:95, B*73:01^w
20	180 bp	1070 bp	*02:24	

21 ^{5,15}	115 bp, 205 bp	1070 bp	*02:25Q, 02:30	*15:19
22 ⁵	110 bp	1070 bp	*02:34	*16:09
23 ¹⁶	205 bp, 390 bp	1070 bp	*02:29, 02:35	
24	325 bp	1070 bp	*02:06, 02:23, 02:36	*03:81, 12:15, 15:02:01- 15:03, 15:05:01-15:13, 15:15-15:24, 15:26- 15:28, 16:20

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 C*02 low 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 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-C*02 SSP subtyping.

In addition, wells number 2, 3, 6, 7, 11, 14 and 18 contain the primer pair giving rise to the shorter, 800 bp, internal positive control band.

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

³The C*02:15 and 02:21 alleles may be distinguished by the different sizes of the specific PCR products generated by primer mix 15.

The C*02:25Q and 02:30 alleles may 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 Class I alleles some non-HLA-C*02 alleles will be amplified by primer mixes 1, 5 to 8, 10, 12, 16, 18, 19, 21, 22 and 24. In addition, primer mix 3 will amplify the B*27:34, 40:02:07, 40:06:02 and weakly the B*57:03:02 allele, primer mix 5 will amplify the B*07:02:07 allele, primer mix 16 will amplify the B*58:02 allele and primer mix 19 will weakly amplify the B*73:01 allele.

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

⁶Primer mixes 13 and 18 may give a lower yield of specific PCR product than the other C*02 primer mixes.

⁷Primer mixes 10 and 16 may give rise to non-specific amplifications.

⁸Primer mix 3: Specific PCR fragment of 95 bp in the C*02:03, 02:16:02 and 02:18 alleles and in the B*27:34, B*40:02:07, 40:06:02 and B*57:03:02^w alleles. Specific PCR fragment of 120 bp in the C*02:20 and 02:31 alleles.

⁹Primer mix 5: Specific PCR fragment of 145 bp in the C*02:22 and the C*08:31 alleles and in the B*07:02:07 allele. Specific PCR fragment of 240 bp in the C*02:05 and 02:17 and in the C*01:10 and 06:08 alleles.

¹⁰Primer mix 8: Specific PCR fragment of 70 bp in the C*02:08 and the C*03:64 and 15:10:02 alleles. Specific PCR fragment of 280 bp in the C*02:33 allele.

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Lot-specific Information

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¹¹Primer mix 11: Specific PCR fragment of 85 bp in the C*02:18 and 02:32 alleles. Specific PCR fragment of 170 bp in the C*02:09 allele.

¹²Primer mix 12: Specific PCR fragment of 150 bp in the C*02:11 and 02:14 and in the C*04:42, 06:05^w, 07:02:09, 12:16, 15:23 and 16:21 alleles. Specific PCR fragment of 230 bp in the C*02:17 allele.

¹³Primer mix 15: Specific PCR fragment of 130 bp in the C*02:21 allele. Specific PCR fragment of 190 bp in the C*02:15 allele.

¹⁴Primer mix 17: Specific PCR fragment of 110 bp in the C*02:31 allele. Specific PCR fragment of 160 bp in the C*02:23 allele.

¹⁵Primer mix 21: Specific PCR fragment of 115 bp in the C*02:30 and the C*15:19 alleles. Specific PCR fragment of 205 bp in the C*02:25Q allele.

¹⁶Primer mix 23: Specific PCR fragment of 205 bp in the C*02:29 and 02:35 alleles. Specific PCR fragment of 390 bp in the C*02:35 allele.

‘w’, might be weakly amplified.

INTERPRETATION TABLE												
HLA-C*02 SSP subtyping												
Amplification patterns for the HLA-C*02:02 to 02:36 alleles												
	Well⁵											
	1	2	3	4	5	6	7	8	9	10	11	12
Length of spec.	250	95	95	150	145	160	130	70	200	125	85	150
PCR product			120		240			280			170	230
Length of int.	800	800	800	1070	1070	800	800	1070	1070	1070	800	1070
pos. control¹												
5'-primer(s)²	2nd	486	486	92	361	419	2nd	105	703	113	486	97
	5'-CCA 3'	5'-ACA 3'	5'-ACA 3'	5'-gTg 3'	5'-AgT 3'	5'-gTA 3'	5'-CCA 3'	5'-gCT 3'	5'-CTA 3'	5'-CCA 3'	5'-ACA 3'	5'-TCg 3'
					453	420				118		368
					5'-AAT 3'	5'-TTA 3'				5'-CCA 3'		5'-gTT 3'
												449
												5'-CCA 3'
3'-primer(s)³	538	538	538	201	559	538	418	134	861	201	527	201
	5'-CCA 3'	5'-CCA 3'	5'-CAG 3'	5'-CTT 3'	5'-CTC 3'	5'-CCA 3'	5'-gTC 3'	5'-AgC 3'	5'-TCg 3'	5'-CTT 3'	5'-CCg 3'	5'-CTT 3'
			555					343			538	559
			5'-CCg 3'					5'-g 3'			5'-CCg 3'	5'-CTC 3'
			578								613	
			5'-TgT 3'								5'-gCA 3'	
Well No.	1	2	3	4	5	6	7	8	9	10	11	12
HLA-C allele⁴												
*02:02:01-02:02:03, 02:02:06-02:02:11	1	2							9	10		
*02:02:05	1								9	10		
*02:03			3						9	10		
*02:04	1	2		4					9	10		
*02:05	1				5				9	10		
*02:06	1					6			9	10		
*02:07	1	2					7		9	10		
Well No.	1	2	3	4	5	6	7	8	9	10	11	12

INTERPRETATION TABLE															
HLA-C*02 SSP subtyping															
Amplification patterns for the HLA-C*02:02 to 02:36 alleles															
Well⁵															
13	14	15	16	17	18	19	20	21	22	23	24				
225	80	130 190	250	110 160	235 800	210	180	115 205	110	205 390	325	Length of spec. PCR product			
1070	800	1070	1070	1070	800	1070	1070	1070	1070	1070	1070	Length of int.			
												pos. control ¹			
118	486	113	2 nd		486	118	527	369	125	244	322	409	5'-primer(s) ²		
5' -CCA 3'	5' -ACA 3'	5' -CCA 3'	5' -CCA 3'		5' -ACA 3'	5' -CCg 3'	5' -TgT 3'	5' -TAC 3'	5' -CgA 3'	5' -CgC 3'	5' -gcc 3'	5' -ggc 3'			
		369				118			374		703				
		5' -TAC 3'				5' -CCg 3'			5' -CTA 3'		5' -CTA 3'				
302	527	201	538		555	312	3 rd		506	201	312	419	3 rd		3'-primer(s) ³
5' -ggc 3'	5' -CCg 3'	5' -CTT 3'	5' -CAg 3'		5' -CCg 3'	5' -AgT 3'	5' -CTC 3'		5' -Tgg 3'	5' -CTT 3'	5' -AgT 3'	5' -Cgg 3'	5' -CTC 3'		
302		518			603					538		865			
5' -ggc 3'		5' -cca 3'			5' -TTg 3'					5' -CCA 3'		5' -cct 3'			
13	14	15	16		17	18	19	20	21	22	23	24	Well No.		
													HLA-C allele ⁴		
													*02:02:01-02:02:03, 02:02:06-		
													02:02:11		
													*02:02:05		
			16				19						*02:03		
													*02:04		
													*02:05		
												24	*02:06		
													*02:07		
13	14	15	16		17	18	19	20	21	22	23	24	Well No.		

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Length of spec.	250	95	95	150	145	160	130	70	200	125	85	150
PCR product			120		240			280			170	230
Well No.	1	2	3	4	5	6	7	8	9	10	11	12
*02:08	1	2						8	9	10		
*02:09	1	2							9	10	11	
*02:10	1									10		
*02:11	1	2							9	10		12
*02:12	1								9	10		
*02:13	1	2							9	10		
*02:14	1									10		12
*02:15, 02:21 ⁶	1	2							9	10		
*02:16:01									9	10		
*02:16:02			3						9	10		
*02:17	1				5				9	10		12
*02:18			3						9	10	11	
*02:19	1	2				6			9	10		
*02:20	1	2	3						9	10		
*02:22	1	2			5				9	10		
*02:23	1	2							9	10		
*02:24	1	2							9	10		
*02:25Q, 02:30 ⁷	1	2							9	10		
*02:26:01-02:26:02	1	2							9			
*02:27	1	2							9	10		
*02:28	1	2							9	10		
*02:29	1	2								10		
*02:31	1	2	3						9	10		
*02:32									9	10	11	
*02:33	1							8	9	10		
*02:34	1	2							9	10		
*02:35	1	2							9	10		
*02:36	1	2							9	10		
*01:04, 01:21, 06:11, 06:18, 06:33, 08:27, 08:29, 12:02:01- 12:03:11, 12:06-12:08, 12:10:01-12:13, 12:17, 12:22, 12:23, 12:25-12:32, 12:34, 12:35, 14:16, 16:04:01	1											
*01:06, 03:36, 03:77, 07:95												
*01:09	1					6						
*01:10, B*07:02:07					5							
Well No.	1	2	3	4	5	6	7	8	9	10	11	12

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Lot-specific Information

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225	80	130	250	110	235	210	180	115	110	205	325	Length of spec. PCR product
		190		160				205		390		
13	14	15	16	17	18	19	20	21	22	23	24	Well No.
												*02:08
												*02:09
												*02:10
												*02:11
13												*02:12
	14											*02:13
												*02:14
		15										*02:15, 02:21 ⁶
			16									*02:16:01
			16									*02:16:02
												*02:17
			16									*02:18
												*02:19
												*02:20
												*02:22
				17							24	*02:23
							20					*02:24
								21				*02:25Q, 02:30 ⁷
					18							*02:26:01-02:26:02
13												*02:27
						19						*02:28
										23		*02:29
				17								*02:31
												*02:32
												*02:33
									22			*02:34
										23		*02:35
											24	*02:36
												*01:04, 01:21, 06:11, 06:18, 06:33, 08:27, 08:29, 12:02:01- 12:03:11, 12:06-12:08, 12:10:01-12:13, 12:17, 12:22- 12:23, 12:25-12:32, 12:34- 12:35, 14:16, 16:04:01
						19						*01:06, 03:36, 03:77, 07:95
												*01:09
												*01:10, B*07:02:07
13	14	15	16	17	18	19	20	21	22	23	24	Well No.

Lot No.: **02K**

Lot-specific Information

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Length of spec.	250	95	95	150	145	160	130	70	200	125	85	150
PCR product			120		240			280			170	230
Well No.	1	2	3	4	5	6	7	8	9	10	11	12
*01:22, 01:35, 04:04:01-04:04:02, 04:13, 04:58, 08:01:01-08:01:02, 08:03:01-08:04, 08:06, 08:08, 08:09, 08:11, 08:13, 08:14, 08:16, 08:20-08:22, 08:24, 08:26N, 12:14:01-12:14:02, 12:18, 12:20, 14:06, 14:15, <i>B*58:02</i>												
*03:07, 03:10, 03:15, 03:29, 03:45, 04:16, 05:01:01-05:01:13, 05:03-05:07N, 05:09, 05:10, 05:14-05:16, 05:18, 05:19, 05:21-05:25, 05:28, 05:29, 05:31-05:42, 06:06, 07:07, 07:09, 07:76, 12:09, 16:02:01-16:02:04, 16:12, 16:19, 18:01, 18:02												
*03:21, 03:80						6						
*03:64								8				
*03:81, 16:20												
*04:03, 05:26										10		
*04:06										10		
*04:34												
*04:42												12
*05:08, 06:02:01:01-06:02:01:02, 06:02:03-06:03, 06:07, 06:09, 06:10, 06:12-06:17, 06:19-06:32, 06:34-06:37, 12:04:01-12:05, 12:21, 12:33, 18:03	1											
*05:11, 05:17, 05:27, 06:04, 08:10, 15:04, 17:01:01-17:06												
*05:12												
*06:05												w
*06:08	1				5							
*07:02:09, 16:21												12
*08:31	1				5							
*12:15	1					6						
Well No.	1	2	3	4	5	6	7	8	9	10	11	12

225	80	130	250	110	235	210	180	115	110	205	325	Length of spec.
		190		160				205		390		PCR product
13	14	15	16	17	18	19	20	21	22	23	24	Well No.
			16									*01:22, 01:35, 04:04:01-04:04:02, 04:13, 04:58, 08:01:01-08:01:02, 08:03:01-08:04, 08:06, 08:08, 08:09, 08:11, 08:13, 08:14, 08:16, 08:20-08:22, 08:24, 08:26N, 12:14:01-12:14:02, 12:18, 12:20, 14:06, 14:15, B*58:02
					18							*03:07, 03:10, 03:15, 03:29, 03:45, 04:16, 05:01:01-05:01:13, 05:03-05:07N, 05:09, 05:10, 05:14-05:16, 05:18, 05:19, 05:21-05:25, 05:28, 05:29, 05:31-05:42, 06:06, 07:07, 07:09, 07:76, 12:09, 16:02:01-16:02:04, 16:12, 16:19, 18:01, 18:02
												*03:21, 03:80
												*03:64
											24	*03:81, 16:20
												*04:03, 05:26
			16									*04:06
			16			19						*04:34
					18							*04:42
					18							*05:08, 06:02:01-01-06:02:01:02, 06:02:03-06:03, 06:07, 06:09, 06:10, 06:12-06:17, 06:19-06:32, 06:34-06:37, 12:04:01-12:05, 12:21, 12:33, 18:03
			16		18							*05:11, 05:17, 05:27, 06:04, 08:10, 15:04, 17:01:01-17:06
					18	19						*05:12
					18							*06:05
					18							*06:08
												*07:02:09, 16:21
												*08:31
											24	*12:15
13	14	15	16	17	18	19	20	21	22	23	24	Well No.

Length of spec.	250	95	95	150	145	160	130	70	200	125	85	150
PCR product			120		240			280			170	230
Well No.	1	2	3	4	5	6	7	8	9	10	11	12
*12:16	1											12
*15:02:01-15:03, 15:05:01-15:06:02, 15:09-15:10:01, 15:12, 15:13, 15:15-15:18, 15:20-15:22, 15:24, 15:26-15:28												
*15:07												
*15:08												
*15:10:02								8				
*15:11										10		
*15:19												
*15:23												12
*16:09												
*16:10							7					
B*27:34, B*40:02:07, 40:06:02			3									
B*57:03:02			W									
B*73:01												
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*02 SSP subtyping.

In addition, wells number number 2, 3, 6, 7, 11, 14 and 18 contain the primer pair giving rise to the shorter, 800 bp, internal positive control band.

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

⁴C*02:01 has been deleted as it was identical to C*02:02:02.

C*02:16:03 has shown to be identical to C*02:16:02

C*02:02:04 has shown to be identical to C*02:10

225	80	130	250	110	235	210	180	115	110	205	325	Length of spec.
		190		160				205		390		PCR product
13	14	15	16	17	18	19	20	21	22	23	24	Well No.
												*12:16
			16		18						24	*15:02:01-15:03, 15:05:01-15:06:02, 15:09-15:10:01, 15:12, 15:13, 15:15-15:18, 15:20-15:22, 15:24, 15:26-15:28
			16								24	*15:07
					18						24	*15:08
			16		18						24	*15:10:02
			16								24	*15:11
			16		18			21			24	*15:19
			16		18						24	*15:23
					18				22			*16:09
												*16:10
												B*27:34, B*40:02:07, 40:06:02
												B*57:03:02
						w						B*73:01
13	14	15	16	17	18	19	20	21	22	23	24	Well No.

⁵Primer mix 3: Specific PCR fragment of 95 bp in the C*02:03, 02:16:02 and 02:18 alleles and in the B*27:34, B*40:02:07, 40:06:02 and B*57:03:02^w alleles. Specific PCR fragment of 120 bp in the C*02:20 and 02:31 alleles.

Primer mix 5: Specific PCR fragment of 145 bp in the C*02:22 and the C*08:31 alleles and in the B*07:02:07 allele. Specific PCR fragment of 240 bp in the C*02:05 and 02:17 and in the C*01:10 and 06:08 alleles.

Primer mix 8: Specific PCR fragment of 70 bp in the C*02:08 and the C*03:64 and 15:10:02 alleles. Specific PCR fragment of 280 bp in the C*02:33 allele.

Primer mix 11: Specific PCR fragment of 85 bp in the C*02:18 and 02:32 alleles. Specific PCR fragment of 170 bp in the C*02:09 allele.

Primer mix 12: Specific PCR fragment of 150 bp in the C*02:11 and 02:14 and in the C*04:42, 06:05^w, 07:02:09, 12:16, 15:23 and 16:21 alleles. Specific PCR fragment of 230 bp in the C*02:17 allele.

Primer mix 15: Specific PCR fragment of 130 bp in the C*02:21 allele. Specific PCR fragment of 190 bp in the C*02:15 allele.

Primer mix 17: Specific PCR fragment of 110 bp in the C*02:31 allele. Specific PCR fragment of 160 bp in the C*02:23 allele.

Primer mix 21: Specific PCR fragment of 115 bp in the C*02:30 and the C*15:19 alleles. Specific PCR fragment of 205 bp in the C*02:25Q allele.

Primer mix 23: Specific PCR fragment of 205 bp in the C*02:29 and 02:35 alleles. Specific PCR fragment of 390 bp in the C*02:35 allele.

⁶The C*02:15 and 02:21 alleles may be distinguished by the different sizes of the specific PCR products generated by primer mix 15.

⁷The C*02:25Q and 02:30 alleles may be distinguished by the different sizes of the specific PCR products generated by primer mix 21.

^w, might be weakly amplified.

CELL LINE VALIDATION SHEET																					
HLA-C*02 SSP primer set																					
					Well																
						1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
					Prod. No.:	201071901	201071902	201071903	201071904	201071905	201071906	201071907	201071908	201071909	201071910	201071911	201071912	201071913	201071914	201071915	201071916
	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					Well							
HLA-C*02 SSP primer set					17	18	19	20	21	22	23	24
				Prod. No.:	201071917	201071918	201071919	201071920	201071921	201071922	201071923	201071924
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	9007 DEM	*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 SСТО	*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*02 SSP

Product number: 101.622-12 – including *Taq* polymerase
Lot number: 02K
Expiry date: 2012-May-01
Number of tests: 12
Number of wells per test: 24

Well specifications:

Well No.	Production No.	Well No.	Production No.	Well No.	Production No.
1	2010-719-01	9	2010-719-09	17	2010-719-17
2	2010-719-02	10	2010-719-10	18	2010-719-18
3	2010-719-03	11	2010-719-11	19	2010-719-19
4	2010-719-04	12	2010-719-12	20	2010-719-20
5	2010-719-05	13	2010-719-13	21	2010-719-21
6	2010-719-06	14	2010-719-14	22	2010-719-22
7	2010-719-07	15	2010-719-15	23	2010-719-23
8	2010-719-08	16	2010-719-16	24	2010-719-24

The specificity of each primer solution of the HLA-C*02 primer set has been tested against 48 well characterized IHWC cell line DNAs.

No DNAs carrying the alleles to be amplified by primer solutions 3 to 8, 11 to 15, 17 and 19 to 23 were available. The specificity of the primers in primer solutions 3, 5 to 8, 11 to 15, 17, 19 and 23 were tested by separately adding one additional 5'-primer, respectively one additional 3'-primer. In primer solutions 4, 21 and 22 it was only possible to test the 3'-primer, the 5'-primer was not possible to test. In primer solution 20 it was only possible to test the 5'-primer, the 3'-primer was not possible to test. In primer solutions 3, 8, 11 and 17 one or two of the 3'-primers were not possible to test, and in primer solutions 10 and 12, one or two 5'-primers were not possible to test. In primer solutions 15 and 23, one 5'-primer and one 3'-primer was not possible to test.

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

Date of approval: 2011-August-26

Approved by:

Quality Control, Supervisor

Lot No.: **02K**

Lot-specific Information

www.olerup-ssp.com

Declaration of Conformity

Product name: *Olerup* SSP® HLA-C*02
Product number: 101.622-12
Lot number: 02K

Intended use: HLA-C*02 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 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, Franzengatan 5, SE-112 51 Stockholm, Sweden.

The Authorized Representative located within the Community is: *Olerup* SSP AB.

Saltsjöbaden, Sweden
2011-August-26

Ann-Cathrin Jareman
Head of QA and Regulatory Affairs

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