Lot No.: 2R9 **Lot-specific information**

Olerup SSP® HLA-C*01

Product number:	**101.621-12 – including *Taq* polymerase** **101.621-12u – without *Taq* polymerase**
Lot number:	**2R9**
Expiry date:	**2026-09-01**
Number of tests:	**12**
Number of wells per test:	**31+1**
Storage - pre-aliquoted primers:	**dark, between -15°C and -25°C**
- PCR Master Mix:	**between -15°C and -25°C**
- Adhesive PCR seals	**RT**

This Product Description is only valid for Lot No. 2R9.

Complete product documentation consists of generic Instructions for Use (IFU), lot specific Product Insert, Worksheet and Certificate.

CHANGES COMPARED TO THE PREVIOUS *OLERUP* SSP® HLA-C*01 LOT (2N8)

- The product documentation has been updated for new alleles of IMGT 3.49.0
- The kit resolution focuses on common and well documented (CWD) alleles[1].

[1]As described in section Uniquely Identified Alleles.

The HLA-C*01 primer set, specificity and interpretation tables have been updated for the HLA-C alleles described since the previous *Olerup* SSP® HLA-C*01 lot was made **(Lot No. 2N8)**.

The HLA-C*01 primer set is unchanged compared to the previous *Olerup* SSP® HLA-C*01 lot **(Lot No. 2N8)**.

[1]S. J. Mack, P. Cano, J. A. Hollenbach et al.
Common and well-documented HLA alleles: 2012 update to the CWD catalogue. Tissue Antigens, 2013, 81, 194–203

Lot No.: 2R9 **Lot-specific information**

Well **32** contains Negative Control primer pairs, that will amplify a majority of the *Olerup* SSP® HLA Class I, DRB, DQB1, DPB1 and DQA1 amplicons as well as all the amplicons generated by the control primer pairs matching the human growth hormone gene.

HLA-specific PCR product sizes range from 75 to 200 base pairs.
The PCR product generated by the positive control primer pair is 200 base pairs.

Length of PCR product	**105**	**200**	**105**	**80**	**75**	**80**	**85**
5'-primer[1]	**164**	**340**	**440**	**45**	**45**	**43**	**36**
	5'-CAC3'	**5'-Agg3'**	**5'-TTA3'**	**5'-Tgg3'**	**5'-Tgg3'**	**5'-Tgg3'**	**5'-TAC3'**
							36
							5'-TAT3'
3'-primer[2]	**231**	**2nd I**	**507**	**59**	**58**	**57**	**47**
	5'-TgC3'	**5'-AAA3'**	**5'-TTg3'**	**5'-CTC3'**	**5'-ggC3'**	**5'-CTC3'**	**5'-ACA3'**
							48
							5'-gCA3'
							48
							5'-gCC3'
							52
							5'-TgT3'
A*	**+**	**+**	**+**				
B*	**+**	**+**	**+**				
C*	**+**	**+**	**+**				
DRB1				**+**	**+**		
DRB3				**+**	**+**		
DRB5				**+**			
DQB1					**+**		
DPB1						**+**	
DQA1							**+**

[1]The nucleotide position for HLA class I genes and the codon for HLA class II genes, in the 2nd or 3rd exon, matching the specificity-determining 3'-end of the primer is given. Nucleotide and codonnumbering as on the www.ebi.ac.uk/imgt/hla web site. The sequence of the 3 terminal nucleotides of the primer is given.
[2]The nucleotide position for HLA class I genes and the codon for HLA class II genes, in the 2nd or 3rd exon or the 2nd intron, matching the specificity-determining 3'-end of the primer is given in the anti-sense direction. Nucleotide and codon numbering as on the www.ebi.ac.uk/imgt/hla web site. The sequence of the 3 terminal nucleotides of the primer is given.

Lot No.: 2R9 **Lot-specific information**

PRODUCT DESCRIPTION

HLA-C*01 SSP typing

CONTENT

The primer set contains 5'- and 3'-primers for identifying the C*01:02 to C*01:235 alleles.

PLATE LAYOUT

Each HLA-C*01 test consists of 32 PCR reactions in a 32 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
25	26	27	28	29	30	31	NC

The 32 well PCR plate is marked with 'HLA-C*01' in silver/gray ink.
Well No. 1 is marked with the Lot No. '2R9'.
Wells 1 to 31 – HLA-C*01 high resolution primers.
Well 32 – Negative Control (NC).
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 32 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

Due to the sharing of sequence motifs between HLA-C alleles, non-HLA-C*01 alleles will be amplified by some primer mixes. For further details see Specificity Table.

UNIQUELY IDENTIFIED ALLELES

All the HLA-C*01 alleles, i.e. **C*01:02 to C*01:235**, recognized by the HLA Nomenclature Committee in July 2022[1,2] will be amplified by the primers in the HLA-C*01 SSP kit[3].

The HLA-C*01 kit enables separation of the confirmed HLA-C*01 alleles as listed in the IMGT/HLA database 3.25.0. An HLA allele is listed as confirmed by IMGT/HLA if it has been sequenced by more than a single laboratory or from multiple sources. Current allele confirmation status for HLA-C*01 alleles is listed below.

Lot No.: 2R9 **Lot-specific information**

The HLA-C*01 kit also enables identification of many null and alternatively expressed alleles.

The following HLA-C*01 alleles can be distinguished by the different sizes of the HLA-specific PCR product:

Alleles	Primer mix	Alleles	Primer mix
C*01:06, 01:38	5	C*01:29, 01:33	21
C*01:10, 01:52	9	C*01:31, 01:44, 01:141	23
C*01:17, 01:41, 01:128, 01:157	14	C*01:32:01-01:32:02, 01:40	22
C*01:18, 01:42	15	C*01:39, 01:137N	11
C*01:19, 01:43, 01:58	16	C*01:70, 01:99	25
C*01:27, 01:45	19	C*01:89N, 01:109N	29
C*01:28, 01:56N	20	C*01:93, 01:121Q	30

[1]HLA-C alleles listed on the IMGT/HLA web page 2022-July-12, release 3.49.0, www.ebi.ac.uk/imgt/hla.
[2]Alleles that have been deleted from or renamed in the official WHO HLA Nomenclature up to and including the last IMGT/HLA database release can be retrieved from web page http://hla.alleles.org/alleles/deleted.html.
[3]The following alleles will give rise to identical amplification patterns with the HLA-C*01 subtyping kit. These alleles can be distinguished by the HLA-C low resolution kit and/or the respective high resolution subtyping kits:

Alleles
C*01:21, C*12:215
C*01:123, 01:125, 01:156, 01:168-01:169:02, 01:177, 01:186, 01:204, C*03:86, 03:94
C* 01:158, 01:193, 01:205, 01:231N, C*03:416, B*54:18

Lot No.: 2R9 **Lot-specific information**

ALLELE CONFIRMATION STATUS

Allele	Status[1]	Allele	Status[1]	Allele	Status[1]	Allele	Status[1]
C*01:02:01	**Confirmed**	**C*01:12:01**	**Confirmed**	**C*01:59**	**Confirmed**	**C*01:107**	**Confirmed**
C*01:02:02	Unconfirmed	C*01:12:02	Unconfirmed	C*01:60	Unconfirmed	C*01:108	Unconfirmed
C*01:02:03	**Confirmed**	**C*01:13**	**Confirmed**	C*01:61	Unconfirmed	C*01:109N	Unconfirmed
C*01:02:04	**Confirmed**	C*01:14	Unconfirmed	C*01:62	Unconfirmed	C*01:110	Unconfirmed
C*01:02:05	Unconfirmed	C*01:15	Unconfirmed	C*01:63:01	Unconfirmed	C*01:111N	Unconfirmed
C*01:02:06	Unconfirmed	**C*01:16**	**Confirmed**	C*01:63:02	Unconfirmed	C*01:112	Unconfirmed
C*01:02:07	**Confirmed**	**C*01:17**	**Confirmed**	C*01:64	Unconfirmed	C*01:113	Unconfirmed
C*01:02:08	**Confirmed**	**C*01:18**	**Confirmed**	C*01:65	Unconfirmed	C*01:114	Unconfirmed
C*01:02:09	Unconfirmed	C*01:19	Unconfirmed	**C*01:66**	**Confirmed**	C*01:115	Unconfirmed
C*01:02:10	Unconfirmed	C*01:20	Unconfirmed	**C*01:67**	**Confirmed**	C*01:116	Unconfirmed
C*01:02:11	Unconfirmed	**C*01:21**	**Confirmed**	C*01:68	Unconfirmed	C*01:117N	Unconfirmed
C*01:02:12	Unconfirmed	**C*01:22**	**Confirmed**	C*01:69N	Unconfirmed	C*01:118	Unconfirmed
C*01:02:13	Unconfirmed	C*01:23	Unconfirmed	**C*01:70**	**Confirmed**	C*01:119	Unconfirmed
C*01:02:14	Unconfirmed	C*01:24	Unconfirmed	C*01:71	Unconfirmed	C*01:120	Unconfirmed
C*01:02:15	Unconfirmed	C*01:25	Unconfirmed	C*01:72	Unconfirmed	C*01:121Q	Unconfirmed
C*01:02:16	**Confirmed**	**C*01:26**	**Confirmed**	C*01:73	Unconfirmed	C*01:122	Unconfirmed
C*01:02:17	Unconfirmed	**C*01:27**	**Confirmed**	**C*01:74**	**Confirmed**	C*01:123	Unconfirmed
C*01:02:18	**Confirmed**	C*01:28	Unconfirmed	C*01:75	Unconfirmed	C*01:124	Unconfirmed
C*01:02:19	Unconfirmed	C*01:29	Unconfirmed	C*01:76	Unconfirmed		
C*01:02:20	Unconfirmed	**C*01:30**	**Confirmed**	C*01:77	Unconfirmed		
C*01:02:21	Unconfirmed	C*01:31	Unconfirmed	C*01:78	Unconfirmed		
C*01:02:22	**Confirmed**	**C*01:32:01**	**Confirmed**	C*01:79:01	Unconfirmed		
C*01:02:23	Unconfirmed	C*01:32:02	Unconfirmed	C*01:79:02	Unconfirmed		
C*01:02:24	Unconfirmed	C*01:33	Unconfirmed	C*01:80	Unconfirmed		
C*01:02:25	Unconfirmed	C*01:34	Unconfirmed	**C*01:81**	**Confirmed**		
C*01:02:26	Unconfirmed	C*01:35	Unconfirmed	C*01:82	Unconfirmed		
C*01:02:27	Unconfirmed	C*01:36	Unconfirmed	C*01:83	Unconfirmed		
C*01:02:28	Unconfirmed	C*01:37N	Unconfirmed	C*01:84	Unconfirmed		
C*01:02:29	Unconfirmed	C*01:38	Unconfirmed	C*01:85	Unconfirmed		
C*01:02:30	Unconfirmed	C*01:39	Unconfirmed	C*01:86N	Unconfirmed		
C*01:02:31	Unconfirmed	**C*01:40**	**Confirmed**	C*01:87	Unconfirmed		
C*01:02:32	**Confirmed**	**C*01:41**	**Confirmed**	C*01:88	Unconfirmed		
C*01:02:33	Unconfirmed	C*01:42	Unconfirmed	C*01:89N	Unconfirmed		
C*01:02:34	Unconfirmed	C*01:43	Unconfirmed	C*01:90	Unconfirmed		
C*01:02:35	Unconfirmed	**C*01:44**	**Confirmed**	C*01:91	Unconfirmed		
C*01:02:36	Unconfirmed	**C*01:45**	**Confirmed**	C*01:92	Unconfirmed		
C*01:02:37	Unconfirmed	C*01:46	Unconfirmed	**C*01:93**	**Confirmed**		
C*01:02:38	Unconfirmed	C*01:47	Unconfirmed	C*01:94	Unconfirmed		
C*01:02:39	Unconfirmed	C*01:48	Unconfirmed	C*01:95	Unconfirmed		
C*01:02:40	Unconfirmed	**C*01:49:01**	**Confirmed**	C*01:96	Unconfirmed		
C*01:03	**Confirmed**	C*01:49:02	Unconfirmed	C*01:97	Unconfirmed		
C*01:04	Unconfirmed	**C*01:50**	**Confirmed**	C*01:98N	Unconfirmed		
C*01:05	Unconfirmed	C*01:51	Unconfirmed	**C*01:99**	**Confirmed**		
C*01:06	**Confirmed**	**C*01:52**	**Confirmed**	C*01:100	Unconfirmed		
C*01:07:01	Unconfirmed	C*01:53	Unconfirmed	C*01:101	Unconfirmed		
C*01:07:02	**Confirmed**	**C*01:54**	**Confirmed**	C*01:102	Unconfirmed		
C*01:08	**Confirmed**	C*01:55	Unconfirmed	**C*01:103**	**Confirmed**		
C*01:09	Unconfirmed	C*01:56N	Unconfirmed	C*01:104	Unconfirmed		
C*01:10	**Confirmed**	C*01:57	Unconfirmed	C*01:105	Unconfirmed		
C*01:11	Unconfirmed	**C*01:58**	**Confirmed**	C*01:106	Unconfirmed		

[1]Allele status "confirmed" or "unconfirmed" as listed on the IMGT/HLA web page 2016-July-14, release 3.25.0, www.ebi.ac.uk/imgt/hla.

Lot No.: 2R9 **Lot-specific information**

RESOLUTION IN HOMO- AND HETEROZYGOTES

Results file with resolution in HLA-C*01 homo- and heterozygotes is available upon request.

Lot No.: 2R9 **Lot-specific information**

SPECIFICITY TABLE

HLA-C*01 SSP subtyping

Specificities and sizes of the PCR products of the 31+1 primer mixes used for HLA-C*01 SSP subtyping

Primer Mix	Size of spec. PCR product[1]	Size of control band[2]	Amplified HLA-C*01 alleles[3]	Other amplified HLA Class I alleles
1[4,6]	90 bp	**800 bp**	*01:02:01:01-01:02:87, 01:06-01:11, 01:13-01:20, 01:22-01:23, 01:25-01:33, 01:35, 01:38-01:48, 01:51-01:53, 01:56N-01:76, 01:80-01:85, 01:87-01:96, 01:98N-01:100, 01:103-01:113, 01:115-01:119, 01:121Q-01:130, 01:132-01:145:01N, 01:147-01:151, 01:153-01:157, 01:159-01:175, 01:177-01:192, 01:194-01:204, 01:206-01:211N, 01:213-01:230, 01:232-01:235	*03:86, 03:94, 03:302, 05:107, 06:179, 06:204, 07:177, 15:37 15:102, **B*40:243, B*54:38**
2[4]	90 bp 270 bp	1070 bp	*01:03:01-01:03:03, 01:24, 01:78, 01:146:01-01:146:02 *01:15:01-01:15:02	*03:58, 04:37, 05:85, 05:241, 07:364
3	150 bp	**800 bp**	*01:04, 01:111N	
4	210 bp	**800 bp**	*01:05, 01:77	*04:240, 05:111, 05:207, 07:37:01:02, 07:307, 07:755, **B*07:77, B*07:193**
5[4]	105 bp 150 bp 200 bp	**800 bp**	*01:38 *01:20 *01:06	
6[5]	195 bp 230 bp	1070 bp	*01:07:01-01:07:02 *01:37N, 01:83	*06:43:01, 07:489:02, 14:24:02, **A*03:356, B*38:168** *14:35N, 16:132N
7[4,5]	70 bp	1070 bp	*01:67	*03:03:10, 03:04:28, 04:01:11, 06:02:21, 07:01:58, 07:02:36:01-07:02:36:02, 07:18:06, 12:03:36, 14:03:04, 16:01:19, **A*01:01:33, A*02:01:29, A*03:01:42, A*11:01:40, A*23:01:29, A*24:07:02, A*26:01:09, A*29:02:31, A*32:01:09, A*33:01:07, A*68:01:06, B*07:02:21, B*13:02:03, B*14:02:21, B*15:01:39, B*15:13:03, B*27:05:06, B*35:08:07, B*37:01:18, B*40:01:10, B*40:02:11, B*40:06:24, B*44:02:37,**

Lot No.: 2R9 **Lot-specific information**

				B*44:03:08, B*51:01:24, B*55:02:14, B*58:01:27, B*73:01:01:01-73:03, B*82:02:02
	150 bp		*01:20	
	195 bp		*01:08	
8	210 bp	**800 bp**	*01:04, 01:09:01-01:09:02, 01:22, 01:35, 01:160, 01:226	*03:302, 06:23, 06:179, 07:177, 12:178, 15:37, **B*40:243, B*46:84, B*54:38**
	260 bp		*01:143N	
9[8]	160 bp	**800 bp**	*01:52	
	225 bp		*01:10, 01:83	**B*40:243**
10	210 bp	1070 bp	*01:22, 01:35, 01:160, 01:226	*03:302, 07:177, 15:37, **B*40:243, B*54:38**
	255 bp		*01:30	
	290 bp		*01:11	
11	140 bp	**800 bp**	*01:39	
	355 bp		*01:12:01-01:12:02, 01:34, 01:79:01-01:79:02, 01:97, 01:101-01:102, 01:114:01-01:114:02, 01:131, 01:137N, 01:212	
12[4]	80 bp	1070 bp	*01:84	*03:213
	155 bp		*01:13	*02:51, 03:87:01-03:87:02, 03:414, 04:223:01-04:223:02, 04:387, 05:09:01-05:09:03, 05:17, 05:52, 05:201, 05:206, 05:262, 07:130, 07:915, 08:15:01-08:15:02, 08:51, 08:243, 08:246, 12:144, 12:185, 16:27, **B*15:33, B*15:248**
	255 bp		*01:82	
13[6]	155 bp	**800 bp**	*01:02:01:01-01:66, 01:68-01:72, 01:74-01:79:02, 01:81-01:116, 01:118-01:122, 01:124, 01:126-01:155, 01:157-01:167, 01:170-01:176, 01:178-01:185Q, 01:187-01:203, 01:205-01:235	*03:416, 05:200, 07:316, 07:338, 07:579, 12:215, 15:104, **B*54:18**
14[4,5]	120 bp	1070 bp	*01:41	
	240 bp		*01:17, 01:21, 01:23, 01:69N, 01:128, 01:152, 01:157	*07:316, 07:338, 07:579, 12:215
15[4, 7]	115 bp	**800 bp**	*01:42, 01:73	**B*13:102, B*15:393, B*46:60, B*51:129**
	230 bp		*01:16, 01:18, 01:74	
16	130 bp	1070 bp	*01:43	*05:200
	255 bp		*01:19	
	295 bp		*01:23, 01:58	*07:316, 07:338, 07:579, **A*01:24**
17[4,5]	75 bp	**800 bp**	*01:24-01:25	*04:441:01:01-04:441:01:02, 05:266
	255 bp		*01:82	
18[5]	195 bp	**800 bp**	*01:26	
	260 bp		*01:34, 01:146:01	

Lot No.: 2R9 **Lot-specific information**

	295 bp 345 bp		*01:145:01N *01:36:01-01:36:02, 01:49:01, 01:55	
19[4]	100 bp 265 bp	**800 bp**	*01:27 *01:30, 01:45	
20[4]	80 bp 110 bp 285 bp	**800 bp**	*01:84 *01:28 *01:56N	*03:213 *03:59, 03:123, 06:157, 12:248, 15:167, **B*15:513**
21[4]	125 bp 160 bp 245 bp	**800 bp**	*01:33 *01:80 *01:29, 01:69N	
22[4,5]	110 bp 250 bp 335 bp 355 bp	1070 bp	*01:40 *01:32:01-01:32:02 *01:50, 01:131, 01:212 *01:05, 01:36:01-01:36:02, 01:55, 01:79:01-01:79:02, 01:120	*06:110, **B*08:230**
23[4]	90 bp 120 bp 235 bp	1070 bp	*01:04, 01:54, 01:103, 01:152 *01:44, 01:141, 01:145:02N, 01:176 *01:31, 01:35, 01:107	*06:23, 12:178, 14:45, 16:18, **B*46:84** *03:302**, B*46:84**
24[4]	90 bp 165 bp 260 bp	1070 bp	*01:86N, 01:103 *01:66 *01:143N	
25[4,7]	85 bp 240 bp 270 bp	1070 bp	*01:99 *01:16 *01:70	**A*24:112, A*24:414, B*13:102, B*44:322, B*51:129**
26	155 bp 230 bp	1070 bp	*01:117N *01:74, 01:98N	
27	350 bp 545 bp	1070 bp	*01:14, 01:59, 01:118 *01:85	*04:37, 05:85, 05:107, 05:241, 06:23, 06:179, 06:204, 15:37, 15:102 *02:178, 03:357, 03:376, 03:452, 04:277, 05:212, 06:266, 08:22:01:01-08:22:01:02, 08:56, 08:102, 08:154, 08:178, 08:202, 12:290, 12:304, 15:29, 15:87, 16:133
28	155 bp 295 bp 325 bp 360 bp	**800 bp**	*01:35, 01:107, 01:131 *01:145:01N *01:81 *01:49:01-01:50, 01:131, 01:176	
29	135 bp 295 bp 350 bp	1070 bp	*01:109N *01:89N *01:14, 01:59, 01:118	*02:193N, 05:239N *04:37, 05:85, 05:107, 05:241, 06:23, 06:179, 06:204, 15:37, 15:102
30[4]	125 bp 235 bp	1070 bp	*01:93 *01:121Q	

Lot No.: 2R9 **Lot-specific information**

31	155 bp	1070 bp	*01:117N	
	265 bp		*01:14, 01:154	*05:200, 15:104
32[9]	-	-	**Negative Control**	

[1]Alleles 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*01 SSP typings.
When the primers in a primer mix can give rise to HLA-specific PCR products of more than one length this is indicated if the size difference is more than 20 base pairs. Size differences of 20 base pairs or less are not given. For high resolution SSP kits, the alleles listed are specified according to amplicon length.
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 inherit 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.

[2]The internal positive control primer pairs amplify segments of the human growth hormone gene. The internal positive control bands are 1070 or 800 base pairs respectively, well distribution as outlined in the table. Well number 1 contains the shorter, 800 bp, internal positive control band. The well distribution of the internal controls can help in orientation of the kit on gel photo, as well as allow for kit identification. In the presence of a specific amplification the intensity of the control band often decreases.

[3]For several HLA Class I alleles 1st and/or 4th exon(s) and beyond, as well as intron nucleotide sequences, are not available. In these instances it is not known whether some of the primers of the SSP sets are completely matched with the target sequences or not. Assumption is made that unknown sequences in these regions are conserved within allelic groups.

[4]HLA-specific PCR products shorter than 125 base pairs have a lower intensity and are less sharp than longer PCR products.

[5]Primer mixes 6, 7, 14, 18 and 22 may have tendencies of unspecific amplifications.

[6]Primer mixes 1 and 13 may give rise to a lower yield of HLA-specific PCR product than the other HLA-C*01 primer mixes.

[7]Primer mixes 15 and 25 have tendencies to primer oligomer formation.

[8]Primer mix 9 may give rise to a long fragment of approximately 600 bp in some HLA-C alleles. This band should not be considered in the interpretation of HLA-C*01 typings.

[9]Primer mix 32 contains a negative control, which will amplify a majority of HLA amplicons as well as the amplicons generated by the control primer pairs matching the human growth hormone gene. HLA-specific PCR product sizes range from 75 to 200 base pairs and the PCR product generated by the HGH positive control primer pair is 200 base pairs.

Lot No.: 2R9 **Lot-specific information**

PRIMER SPECIFICATION

Well No.	1	2	3	4	5	6	7	8	9	10	11	12
Length of spec.	90	90	150	210	105	195	70	210	160	210	140	80
PCR product		270			150	230	150	260	225	255	355	155
					200		195			290		255
Length of int.	800	1070	800	800	800	1070	1070	800	800	1070	800	1070
pos. control[1]												
5'-primer(s)[2]	368	368	368	368	368	363	89	368	368	368	101	485
	5' -gTg 3'	5' -gTg 3'	5' -gTg 3'	5' -gTC 3'	5' -gTg 3'	5' -TgA 3'	5' -gAg 3'	5' -gTg 3'	5' -gTg 3'	5' -gTg 3'	5' -CAT 3'	5' -CAA 3'
						406	368		667		355	632
						5' -gCA 3'	5' -gTg 3'		5' -AgA 3'		5' -.CC 3'	5' -gAg 3'
						667					368	806
						5' -AgA 3'					5' -gTT 3'	5' -ggT 3'
											368	
											5' -gTA 3'	
3'-primer(s)[3]	419	419	470	538	430	559	117	538	488	539	201	601
	5' -CgT 3'	5' -CgA 3'	5' -TCT 3'	5' -CCg 3'	5' -gCT 3'	5' -CgT 3'	5' -CCA 3'	5' -CCA 3'	5' -CCA 3'	5' -TCA 3'	5' -CTC 3'	5' -CTC 3'
	420	595	477		479	846	479	539	559	583	3rd I	846
	5' -gCT 3'	5' -CCT 3'	5' -gCA 3'		5' -CCA 3'	5' -CAC 3'	5' -CCA 3'	5' -TCA 3'	5' -CTC 3'	5' -gTg 3'	5' -ATg 3'	5' -CAC 3'
		595			527		523	585	846	619		
		5' -CCg 3'			5' -CCA 3'		5' -ACA 3'	5' -AgT 3'	5' -CAC 3'	5' -TTT 3'		
Well No.	1	2	3	4	5	6	7	8	9	10	11	12

Well No.	13	14	15	16	17	18	19	20	21	22	23	24
Length of spec.	155	120	115	130	75	195	100	80	125	110	90	90
PCR product		240	230	255	255	260	265	110	160	250	120	165
				295		295		285	245	335	235	260
						345				355		
Length of int.	800	1070	800	1070	800	800	800	800	800	1070	1070	1070
pos. control[1]												
5'-primer(s)[2]	89	89	89	89	632	89	368	89	89	74	368	368
	5' -gAA 3'	5' -gAA 3'	5' -gAA 3'	5' -gAA 3'	5' -gAg 3'	5' -gAA 3'	5' -gTg 3'	5' -gAA 3'	5' -gAA 3'	5' -C 3'	5' -gTg 3'	5' -gTg 3'
	89				806	368		530	368	361	3rd I	
	5' -gAA 3'				5' -ggA 3'	5' -gTT 3'		5' -ggT 3'	5' -gTg 3'	5' -AgA 3'	5' -Cgg 3'	
					818	369		806		379		
					5' -ggC 3'	5' -TAC 3'		5' -ggT 3'		5' -ACg 3'		
						420				463		
						5' -TAA 3'				5' -TgA 3'		
						453						
						5' -AAT 3'						
3'-primer(s)[3]	201	170	164	176	846	244	427	331	172	142	418	418
	5' -CTT 3'	5' -Cgg 3'	5' -gCA 3'	5' -ACT 3'	5' -CAC 3'	5' -CTg 3'	5' -gTA 3'	5' -CTA 3'	5' -CAT 3'	5' -TgA 3'	5' -gTg 3'	5' -gTg 3'
	201	289	165	301		3rd I	583	601	209	3rd I	419	419
	5' -CTC 3'	5' -AgC 3'	5' -Tgg 3'	5' -gCA 3'		5' -ATg 3'	5' -gTg 3'	5' -CTC 3'	5' -gCC 3'	5' -ATg 3'	5' -Cgg 3'	5' -.gT 3'
		295	274	341			601	846	295		560	493
		5' -TCA 3'	5' -CTg 3'	5' -CgT 3'			5' -CTg 3'	5' -CAC 3'	5' -TCA 3'		5' -ACA 3'	5' -CTT 3'
			278						573		671	585
			5' -ggT 3'						5' -AgA 3'		5' -ggA 3'	5' -AgT 3'
			287									
			5' -TCg 3'									
Well No.	13	14	15	16	17	18	19	20	21	22	23	24

Lot No.: 2R9 **Lot-specific information**

Well No.	25	26	27	28	29	30	31
Length of spec.	85	155	350	155	135	125	155
PCR product	240	230	545	295	295	235	265
	270			325	350		
				360			
Length of int.	1070	1070	1070	800	1070	1070	1070
pos. control[1]							
5'-primer(s)[2]	89	89	302	355	302	368	89
	5' -gAA 3'	5' -gAA 3'	5' -gAA 3'	5' -TCA 3'	5' -gAA 3'	5' -gTg 3'	5' -gAA 3'
			972	388	3rd I		
			5' -CTA 3'	5' -CCA 3'	5' -Cgg 3'		
				420			
				5' -TAA 3'			
				560			
				5' -CCT 3'			
3'-primer(s)[3]	131	203	361	3rd I	361	454	203
	5' -ggT 3'	5' -CTC 3'	5' -CCA 3'	5' -ATg 3'	5' -CCA 3'	5' -CTg 3'	5' -CTC 3'
	287	274	1034		683	562	312
	5' -TCg 3'	5' -CTg 3'	5' -AgT 3'		5' -CCT 3'	5' -gCT 3'	5' -AgT 3'
	319	283			843		
	5' -gCg 3'	5' -.gC 3'			5' -gTC 3'		
Well No.	25	26	27	28	29	30	31

[1]The internal positive control primer pairs amplify segments of the human growth hormone gene. The internal positive control bands are 1070 or 800 base pairs respectively, well distribution as outlined in the table. Well number 1 contains the shorter, 800 bp, internal positive control band. The well distribution of the internal controls can help in orientation of the kit on gel photo, as well as allow for kit identification. In the presence of a specific amplification the intensity of the control band often decreases.

[2]The nucleotide position 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.

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

Lot No.: 2R9 **Lot-specific information**

CELL LINE VALIDATION SHEET

HLA-C*01 SSP primer set[2]

					Well[3]													
					1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
				Prod. No.:	202132201	202132202	202132203	202132204	202132205	202132206	202132207	202132208	202132209	202132210	202132211	202132212	202132213	202132214	202132215	202132216
	IHWC cell line[1]		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	*07:18		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
27	9191	CH1007	*07:04	*15:29	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
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	*17:03		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
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	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Lot No.: 2R9 **Lot-specific information**

CELL LINE VALIDATION SHEET

HLA-C*01 SSP primer set[2]

					Well[3]														
					17	18	19	20	21	22	23	24	25	26	27	28	29	30	31
				Prod. No.:	202132217	202132218	202132219	202132220	202132221	202132222	202132223	202132224	202132225	202132226	202132227	202132228	202132229	202132230	202132231
	IHWC cell line[1]		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	*07:18		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
27	9191	CH1007	*07:04	*15:29	-	-	-	-	-	-	-	-	-	-	+	-	-	-	-
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	*17:03		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
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	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Lot No.: 2R9 Lot-specific information

[1]The provided cell line HLA specificities are retrieved from the http://www.ihwg.org/hla web site. The specificity of an individual cell line may thus be subject to change.

[2]The specificity of each primer solution in the kit has been tested against 48 well characterized cell line DNAs and where applicable, additional cell line DNAs.

[3]The B*73:01 allele is amplified by primer mix 7 in the 9280 (LK707) cell line.

No DNAs carrying the alleles to be amplified by primer solutions 2 to 6, 8 to 12, 14 to 26 and 28 to 31 were available. The specificity of the primers in primer solutions 2 to 5, 8 to 12, 14 to 16, 18 to 20, 22 to 25, 28, 29 and 31 were tested by adding additional 5'-primers respectively 3'-primers.

In primer solutions 6 and 17 it was only possible to test the 3'-primer, the 5'-primer was not possible to test.

In primer solutions 21, 26 and 30 it was only possible to test the 5'-primer, the 3'-primers were not possible to test.

In primer solutions 9, 11 to 13,18, 20, 22 and 28 one or two of the 5'-primers was not possible to test.

In primer solutions 2, 3, 5, 7 to 10, 14 to 16, 18 to 20, 23 to 25, 29 and 31 one to four of the 3'-primers were not possible to test. In addition, one or more 3'-and/or 5' primers in primer solutions 1, 7, 13 and 27 were tested by separately adding one 5'-primer and/or one 3'-primer.

Lot No.: 2R9 **Lot-specific information**

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