

**Lot No.: 5N0**

**Lot-specific information**

**Olerup SSP<sup>®</sup> HLA-C\*02**

<b>Product number:</b>	<b>101.622-12 – including <i>Taq</i> polymerase</b> <b>101.622-12u – without <i>Taq</i> polymerase</b>
<b>Lot number:</b>	<b>5N0</b>
<b>Expiry date:</b>	<b>2025-10-01</b>
<b>Number of tests:</b>	<b>12</b>
<b>Number of wells per test:</b>	<b>44+1</b>
<b>Storage - pre-aliquoted primers:</b>	<b>dark at -20°C</b>
- PCR Master Mix:	-20°C
- Adhesive PCR seals	RT
- Product Insert	RT

**This Product Description is only valid for Lot No. 5N0.**

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

**CHANGES COMPARED TO THE PREVIOUS OLERUP SSP<sup>®</sup>  
 HLA-C\*02 LOT (5K6)**

- The product documentation has been updated for new alleles of IMGT 3.45.0.
- The kit resolution focuses on common and well documented (CWD) alleles<sup>1</sup>.
- One well was added to the kit, well **45**.

<sup>1</sup>As described in section Uniquely Identified Alleles.

The HLA-C\*02 primer set, specificity and interpretation tables have been updated for the HLA-C alleles described since the previous *Olerup SSP<sup>®</sup> HLA-C\*02* lot was made (**Lot No. 5K6**).

<sup>1</sup>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



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The primers of the wells detailed below have been exchanged, added, or modified compared to the previous lot (**Lot No. 5K6**).

<b>Well</b>	<b>5'-primer</b>	<b>3'-primer</b>	<b>rationale</b>
32	Added	-	5'-primer added for the C*02:38:02N allele.
38	-	Added	3'-primer added for the C'02:48 allele.
40	-	Added	3'-primer added for the C*02:48 allele.
44	Added	Added	New primer pair for the C*02:43:02 allele, negative control moved to well 45.
45	-	-	Negative control primer pair from well 44.



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Well **45** contains Negative Control primer pairs, that will amplify the majority of the Olerup SSP<sup>®</sup> 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
<b>5'-primer<sup>1</sup></b>	<b>164</b>	<b>340</b>	<b>440</b>	<b>45</b>	<b>45</b>	<b>43</b>	<b>36</b>
	5'-CAC <sup>3'</sup>	5'-Agg <sup>3'</sup>	5'-TTA <sup>3'</sup>	5'-Tgg <sup>3'</sup>	5'-Tgg <sup>3'</sup>	5'-Tgg <sup>3'</sup>	5'-TAC <sup>3'</sup>
							<b>36</b>
							5'-TAT <sup>3'</sup>
<b>3'-primer<sup>2</sup></b>	<b>231</b>	<b>2<sup>nd</sup> I</b>	<b>507</b>	<b>59</b>	<b>58</b>	<b>57</b>	<b>47</b>
	5'-TgC <sup>3'</sup>	5'-AAA <sup>3'</sup>	5'-TTg <sup>3'</sup>	5'-CTC <sup>3'</sup>	5'-ggC <sup>3'</sup>	5'-CTC <sup>3'</sup>	5'-ACA <sup>3'</sup>
							<b>48</b>
							5'-gCA <sup>3'</sup>
							<b>48</b>
							5'-gCC <sup>3'</sup>
							<b>52</b>
							5'-TgT <sup>3'</sup>
<b>A*</b>	<b>+</b>	<b>+</b>	<b>+</b>				
<b>B*</b>	<b>+</b>	<b>+</b>	<b>+</b>				
<b>C*</b>	<b>+</b>	<b>+</b>	<b>+</b>				
<b>DRB1</b>				<b>+</b>	<b>+</b>		
<b>DRB3</b>				<b>+</b>	<b>+</b>		
<b>DRB5</b>				<b>+</b>			
<b>DQB1</b>					<b>+</b>		
<b>DPB1</b>						<b>+</b>	
<b>DQA1</b>							<b>+</b>

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

<sup>2</sup>The nucleotide position for HLA class I genes and the codon for HLA class II genes, in the 2<sup>nd</sup> or 3<sup>rd</sup> exon or the 2<sup>nd</sup> 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](http://www.ebi.ac.uk/imgt/hla) web site. The sequence of the 3 terminal nucleotides of the primer is given.



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**PRODUCT DESCRIPTION**

**HLA-C\*02 SSP typing**

**CONTENT**

The primer set contains 5'- and 3'-primers for identifying the C\*02:02 to C\*02:206 alleles.

**PLATE LAYOUT**

Each HLA-C\*02 test consists of 45 PCR reactions in a 48 well cut PCR plate. Wells 46 to 48 are empty.

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	32
33	34	35	36	37	38	39	40
41	42	43	44	NC	empty	empty	empty

The 48 well PCR plate is marked with 'HLA-C\*02' in silver/gray ink. Well No. 1 is marked with the Lot No. '5N0'.

Wells 1 to 44 – HLA-C\*02 high resolution primers.

Well 45 – 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 48 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\*02 alleles will be amplified by some primer mixes. For further details see Specificity Table.

**UNIQUELY IDENTIFIED ALLELES**

All the HLA-C\*02 alleles, i.e. **C\*02:02 to C\*02:206**, recognized by the HLA Nomenclature Committee in July 2021<sup>1,2</sup> will be amplified by the primers in the HLA-C\*02 SSP kit<sup>3</sup>.

The HLA-C\*02 kit enables separation of the confirmed HLA-C\*02 alleles as listed in the IMGT/HLA database 3.24.0. 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\*02 alleles is listed below.



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The HLA-C\*02 kit also enables identification of many null and alternatively expressed alleles.

The following HLA-C\*02 alleles can be distinguished by the different sizes of the HLA-specific PCR product:

Alleles	Primer mix	Alleles	Primer mix
C*02:05:02-02:05:03, 02:22	5	C*02:35, 02:69, 02:70, 02:120	23
C*02:15, 02:21	15	C*02:37, 02:52N	28
C*02:25Q, 02:30	21		

<sup>1</sup>HLA-C alleles listed on the IMGT/HLA web page 2021-July-12, release 3.45.0, [www.ebi.ac.uk/imgt/hla](http://www.ebi.ac.uk/imgt/hla).

<sup>2</sup>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>.

<sup>3</sup>The HLA-C\*02 primer set cannot separate the following alleles. These alleles can be distinguished by the HLA-C low resolution kit and/or the HLA-C\*16 high resolution kit.

**Alleles**

C\*02:197, C\*16:121



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## ALLELE CONFIRMATION STATUS

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

<sup>1</sup>Allele status “confirmed” or “unconfirmed” as listed on the IMGT/HLA web page 2016-April-15, release 3.24.0, [www.ebi.ac.uk/imgt/hla](http://www.ebi.ac.uk/imgt/hla).

## RESOLUTION IN HOMO- AND HETEROZYGOTES

Results file with resolution in HLA-C\*02 homo- and heterozygotes is available upon request.



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**SPECIFICITY TABLE**

**HLA-C\*02 SSP subtyping**

Specificities and sizes of the PCR products of the 44+1 primer mixes used for HLA-C\*02 SSP subtyping

Primer Mix	Size of spec. PCR product <sup>1</sup>	Size of control band <sup>2</sup>	Amplified HLA-C*02 alleles <sup>3</sup>	Other amplified HLA Class I alleles
<b>1</b>	250 bp	<b>800 bp</b>	*02:02:01-02:02:03, 02:02:06-02:02:61, 02:04- 02:15, 02:17, 02:19-02:31, 02:33-02:40:02, 02:42-02:71, 02:73-02:134, 02:136, 02:138-02:179, 02:181- 02:196, 02:198-02:206	*01:04, 01:09:01-01:09:02, 01:21, 04:94:01-04:94:02, 04:360, 05:08, 05:52, 05:89, 05:106:01-05:106:02, 06:02:01-01-06:02:01:60, 06:02:03- 06:03:02, 06:07-06:39, 06:41-06:78, 06:80-06:117, 06:119-06:127:01:01, 06:127:02-06:152N, 06:154-06:196, 06:198-06:203, 06:205-06:270, 06:272-06:316N, 06:318-06:335, 08:27, 08:29, 08:31, 08:160, 12:02:01- 12:08, 12:10:01-12:13:01:02, 12:15- 12:17, 12:21-12:23, 12:25-12:82, 12:84N, 12:86-12:136, 12:138-12:152, 12:154-12:168, 12:170-12:174, 12:176-12:180, 12:182-12:232N, 12:234-12:267, 12:269-12:298, 12:300-12:349, 14:16, 15:74, 15:214, 16:04:01-01-16:04:01:03, 16:04:03- 16:04:05, 16:29, 16:33, 16:42, 16:55, 16:61, 16:66, 16:78, 16:82, 16:91, 16:109, 16:124, 16:149-16:150, 16:182, 18:03
<b>2<sup>4</sup></b>	95 bp	<b>800 bp</b>	*02:02:01-02:02:03, 02:02:06-02:02:12, 02:02:15- 02:02:34, 02:02:36, 02:02:38-02:02:52, 02:02:54- 02:02:61, 02:04, 02:05:02- 02:05:03, 02:06:02-02:09, 02:11, 02:13, 02:15, 02:19- 02:27:01, 02:28-02:31, 02:34-02:36:01, 02:37- 02:38:01N, 02:39-02:40:01, 02:42-02:43:01, 02:44-02:50, 02:52N-02:55:01, 02:56- 02:57, 02:59-02:71, 02:74- 02:75, 02:77-02:88, 02:90- 02:93, 02:96-02:108, 02:111- 02:123, 02:126-02:132, 02:134, 02:136, 02:138- 02:142, 02:144-02:160, 02:162-02:167, 02:170- 02:173, 02:175, 02:177- 02:179, 02:183-02:196, 02:198-02:206	*03:287:01, 05:106:01, 12:02:32, 12:02:34, 12:03:17



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<b>3<sup>4</sup></b>	105 bp	<b>800 bp</b>	*02:03, 02:16:02:01-02:16:02:02, 02:18, 02:31	*03:03:22, 03:04:34, 07:02:75, <b>B*27:34, B*35:01:30<sup>w</sup>, B*40:02:07, B*40:06:02, B*51:01:52<sup>w</sup>, B*57:01:16<sup>w</sup>, B*57:03:02<sup>w</sup></b>
	135 bp		*02:20	
<b>4<sup>4</sup></b>	65 bp	1070 bp	*02:56	<b>B*35:01:30, B*51:01:52, B*57:01:16, B*57:03:02</b>
	150 bp		*02:04	*04:198, 08:119, 12:115, 14:41
<b>5</b>	145 bp	1070 bp	*02:22	*05:105, 05:206, 08:31, 08:185, <b>B*07:02:07, B*27:05:15, B*48:04:02</b>
	245 bp		*02:05:01-02:05:03, 02:17, 02:81	*01:10, 06:08, 12:119, 14:25, 16:29, 16:50, 17:21, <b>B*07:239, B*14:46, B*40:243</b>
<b>6</b>	160 bp 215 bp	<b>800 bp</b>	*02:06:01-02:06:02, 02:47 *02:46, 02:64	*06:168, 06:224, 12:15, 12:208, 15:74 *12:162
<b>7</b>	130 bp	<b>800 bp</b>	*02:07, 02:97, 02:158	*01:115, 04:439, 14:79, 16:10, 16:67
<b>8<sup>4</sup></b>	70 bp	1070 bp	*02:08, 02:189	*03:18:02-03:18:03, 03:64:01, 03:301, 12:02:17, 12:03:23, 15:10:02-15:10:03, <b>B*15:125:02, B*46:01:33, B*56:01:09, B*58:74</b>
	280 bp		*02:33	
<b>9</b>	200 bp	1070 bp	*02:02:01-02:02:03, 02:02:06-02:02:09, 02:11, 02:13, 02:15-02:16:02:02, 02:18-02:28, 02:30-02:38:01N, 02:39-02:40:02, 02:42-02:57, 02:59-02:88, 02:90-02:132, 02:134-02:136, 02:138-02:142, 02:144-02:160, 02:162-02:167, 02:170-02:173, 02:175, 02:177-02:180, 02:183-02:188, 02:190-02:196, 02:198-02:206	*04:357, 04:406
<b>10<sup>6,7</sup></b>	130 bp	<b>800 bp</b>	*02:02:01-02:02:03, 02:02:06-02:02:25, 02:02:27-02:25Q, 02:27:01-02:38:02N, 02:40:01-02:40:02, 02:42-02:44, 02:46-02:86, 02:88-02:100, 02:101 <sup>w</sup> , 02:102-02:106, 02:108-02:133, 02:135N-02:151, 02:153-02:166, 02:168-02:188, 02:190, 02:192N-02:206	*03:308, 04:03:01:01-04:03:09, 04:06:01-04:06:03, 04:80, 04:107, 04:147, 04:160:01-04:160:02, 04:171, 04:190, 04:256, 04:286, 04:294, 04:299, 04:335, 04:337, 04:357, 04:363, 04:381, 04:383, 04:393, 04:400, 04:402, 05:26, 06:18, 07:272, 07:326, 07:756, 07:898, 15:11, 15:118, 16:34, 16:121
<b>11<sup>4</sup></b>	90 bp 170 bp	<b>800 bp</b>	*02:18, 02:32 *02:09	*05:18:04, 07:02:75
<b>12</b>	150 bp	1070 bp	*02:11, 02:14:01-02:14:02, 02:107, 02:164	*04:42:01-04:42:02, 04:220, 05:43, 06:02:72, 06:05 <sup>w</sup> , 07:01:74, 07:02:09, 07:125:02, 08:37, 12:16:01, 12:147, 12:195:02, 12:217, 15:23:01-15:23:02, 15:63, 15:138, 15:158, 16:21, 16:80 *14:25
	230 bp		*02:17	
<b>13<sup>5</sup></b>	225 bp	1070 bp	*02:12, 02:27:01-02:27:02, 02:115, 02:126, 02:131	*03:308, 07:756, 16:34





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	265 bp		*02:49, 02:75, 02:115	*04:03:01:01-04:03:07, 04:06:01-04:06:03, 04:80, 04:147, 04:160:01-04:160:02, 04:171, 04:190, 04:256, 04:286, 04:294, 04:299, 04:335, 04:337, 04:357, 04:363, 04:381, 04:383, 04:393, 04:400, 04:402, 07:756
<b>14<sup>4</sup></b>	80 bp 115 bp	<b>800 bp</b>	*02:13 *02:43:01	*05:18:04, 05:106:01, 07:02:75, 12:02:32, 12:02:34, 12:03:17
<b>15</b>	130 bp 190 bp	1070 bp	*02:21 *02:15, 02:71	<b>B*07:221</b>
<b>16<sup>5,6</sup></b>	250 bp	1070 bp	*02:03, 02:16:02:01-02:16:02:02, 02:18, 02:137, 02:180	*01:22, 01:35, 01:131, 01:160, 04:04:01:01-04:04:02, 04:06:01-04:06:03, 04:13:01:01-04:13:01:02, 04:34, 04:58, 04:122, 04:160:01-04:160:02, 04:178, 04:212, 04:265, 04:291, 04:294, 04:357, 04:368, 04:381, 04:422, 05:11, 05:17, 05:27, 05:68, 05:70, 05:79, 05:115, 05:134, 05:151, 05:184, 06:04:01, 06:118, 06:153:01-06:153:02, 06:197, 08:01:01:01-08:01:32, 08:03:01:01-08:04:03, 08:06, 08:08:01-08:11, 08:13-08:14, 08:16:01-08:16:02, 08:20-08:22:01:02, 08:24, 08:26N, 08:36N, 08:38-08:42, 08:44, 08:46, 08:50, 08:54, 08:56-08:61, 08:65-08:66, 08:72:01-08:72:02, 08:78-08:89N, 08:91, 08:93, 08:95-08:99, 08:101-08:102, 08:104-08:106, 08:109, 08:113, 08:117, 08:119, 08:121N-08:122, 08:124, 08:127N-08:131, 08:133, 08:135-08:139, 08:141Q, 08:143-08:145, 08:147-08:148, 08:153-08:155, 08:157, 08:162-08:165, 08:168, 08:173N-08:178, 08:182, 08:186-08:190, 08:192-08:194, 08:196-08:197, 08:199, 08:203-08:205, 08:208N-08:210, 08:212-08:213, 08:217, 08:219-08:221, 08:228, 08:232, 12:14:01-12:14:02, 12:18:01-12:18:02, 12:20, 12:83, 12:169, 12:175, 14:06, 14:15, 14:53, 14:77, 14:87, 15:02:01:01-15:05:07, 15:05:09-15:07:01:02, 15:09:01:01-15:13:02, 15:15-15:19, 15:21-15:24, 15:26-15:73, 15:76-15:83, 15:85-15:101, 15:103-15:142, 15:144-15:147, 15:149-15:213N, 15:215-15:241, 16:35, 16:40, 16:48, 16:110, 17:01:01:02-17:16:02, 17:18-17:60, <b>B*58:02:01:01-58:02:01:03</b>



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Lot-specific information

<b>17<sup>4</sup></b>	110 bp	1070 bp	*02:31, 02:43:01	*05:18:04, 05:106:01, 07:02:75, 12:02:32, 12:02:34, 12:03:17
	160 bp		*02:23	
<b>18<sup>5</sup></b>	235 bp	<b>800 bp</b>	*02:26:01-02:26:03, 02:107, 02:134, 02:152, 02:167, 02:189	*03:07:01:01-03:07:02, 03:10, 03:15, 03:29, 03:45, 03:163, 03:268, 03:297, 03:450, 03:461, 04:16, 04:42:01-04:42:02, 04:103:01-04:103:02, 04:220, 04:351:01-04:351:02, 05:01:01:01-05:01:25, 05:01:27-05:01:28, 05:01:30-05:01:42, 05:01:44-05:01:66, 05:03-05:12, 05:14-05:19, 05:21-05:25, 05:27-05:29:02, 05:31-05:77, 05:79-05:159, 05:161-05:195, 05:197-05:199, 05:201, 05:203-05:244N, 05:246-05:261, 06:02:01:01-06:02:01:60, 06:02:03-06:02:08, 06:02:10-06:02:20, 06:02:22-06:02:86, 06:02:88-06:02:89, 06:02:92-06:10, 06:12-06:17, 06:19-06:32, 06:34:01-06:81, 06:83-06:103, 06:105-06:118, 06:121-06:124, 06:126-06:146, 06:148-06:187, 06:189-06:209:02, 06:211:01:01N-06:216, 06:218-06:247, 06:249-06:251, 06:253, 06:255-06:335, 07:07, 07:09, 07:76:01-07:76:02, 07:315, 07:328, 07:406, 07:559, 07:598, 07:656, 07:914, 08:10, 12:04:01-12:05:02, 12:09, 12:21, 12:33, 12:41, 12:60, 12:72, 12:135, 12:146, 12:154, 15:02:01:01-15:02:20, 15:02:22-15:05:07, 15:05:09-15:06:03, 15:08:01-15:10:04, 15:12-15:13:02, 15:15-15:19, 15:21-15:24, 15:26-15:35, 15:37-15:42, 15:44:01-15:84Q, 15:86-15:117, 15:119-15:143, 15:145N-15:180, 15:182-15:232, 15:234-15:241, 16:02:01:01-16:02:07, 16:02:09-16:02:20, 16:09, 16:12, 16:19, 16:25, 16:37, 16:46-16:48, 16:60, 16:63, 16:69-16:70, 16:74, 16:77N, 16:84, 16:88-16:91, 16:99, 16:101-16:104, 16:107-16:108, 16:115, 16:120, 16:123N, 16:132N-16:133, 16:136, 16:140, 16:143, 16:145, 16:153, 16:155-16:156, 16:163, 16:166-16:167, 16:176, 16:179, 16:181, 16:184, 17:01:01:02-17:01:08, 17:01:10-17:21, 17:23-17:60, 18:01:01:01-18:11, 18:13-18:14
<b>19<sup>4</sup></b>	80 bp	1070 bp	*02:03, 02:28	<b>B*27:34, B*35:01:30<sup>w</sup>, B*40:02:07, B*40:06:02, B*57:01:16<sup>w</sup>, B*57:03:02<sup>w</sup></b>
<b>20</b>	130 bp	1070 bp	*02:24, 02:71	*03:258, 06:98, 07:397, 07:412, 12:51, <b>B*15:385, B*35:404, B*57:108</b>
	165 bp		*02:72	



Lot No.: **5N0**

Lot-specific information

Lot No.	Fragment Size	Reference Size	Alleles	Alleles
21 <sup>4</sup>	115 bp 210 bp	1070 bp	*02:30 *02:25Q, 02:64, 02:67Q	*04:419, 15:19 *12:162
22 <sup>4</sup>	65 bp  110 bp	1070 bp	*02:56  *02:34	<b>B*35:01:30, B*51:01:52, B*57:01:16, B*57:03:02</b> *16:09
23 <sup>4</sup>	85 bp 210 bp 390 bp	1070 bp	*02:70 *02:29, 02:69, 02:189 *02:35, 02:120	*06:223
24	325 bp	1070 bp	*02:06:01-02:06:02, 02:23, 02:36:01-02:36:02, 02:68	*01:90, 01:101-01:102, 01:113, 01:116, 03:81, 03:175, 03:199, 03:245, 03:317, 03:388, 04:108, 04:178, 04:422, 05:132, 05:215, 05:238, 06:89, 06:224, 07:123:01-07:123:02, 07:173, 07:294, 07:626, 07:725, 07:775, 07:850, 08:113, 12:15, 12:113, 12:208, 12:282, 12:309, 14:92, 15:02:01:01- 15:02:17, 15:02:19-15:02:21, 15:02:23-15:03, 15:05:01:01-15:05:07, 15:05:09-15:13:02, 15:15-15:19, 15:21-15:24, 15:26-15:29, 15:31- 15:39, 15:41-15:63, 15:67-15:75, 15:78:01-15:101, 15:103-15:104, 15:106-15:109, 15:111-15:128, 15:130-15:189N, 15:191-15:210, 15:212-15:221, 15:223-15:235Q, 15:237-15:241, 16:20, 16:109, 16:169
25	160 bp  215 bp	1070 bp	*02:19, 02:23  *02:60	*01:09:01-01:09:02, 03:21, 03:80:01- 03:80:02, 03:142, 03:287:01- 03:287:02, 03:413, 03:512, 06:107, 06:179, 12:222, 12:235, 15:214, <b>B*07:55, B*07:100, B*15:45, B*15:63, B*15:248, B*15:287, B*46:81</b> *06:264, <b>B*07:55, B*07:100, B*08:70, B*15:07:01:01-15:07:03, B*15:45, B*15:68, B*15:126, B*15:207, B*15:324, B*15:331, B*15:405, B*15:431, B*15:450, B*15:524, B*46:12, B*48:19</b>
26	140 bp 260 bp	1070 bp	*02:39 *02:40:01-02:40:02, 02:53:01-02:53:02	*12:124, <b>B*15:363:01-15:363:02, B*18:91, B*39:122, B*39:159, B*40:367</b>
27	140 bp	<b>800 bp</b>	*02:44-02:45, 02:53:01- 02:53:02	
28 <sup>4,7</sup>	90 bp 170 bp	<b>800 bp</b>	*02:52N *02:37, 02:46, 02:60, 02:67Q	<b>B*27:34, B*40:02:07</b>
29 <sup>6</sup>	210 bp  385 bp	1070 bp	*02:12, 02:49, 02:55:01- 02:55:02, 02:115  *02:83	*04:03:01:01-04:03:01:02, 04:03:03- 04:03:09, 04:06:01-04:06:03, 04:80, 04:107, 04:147, 04:160:01-04:160:02, 04:171, 04:190, 04:256, 04:286, 04:294, 04:335, 04:337, 04:357, 04:363, 04:381, 04:383, 04:393, 04:400, 04:402, 07:756 *05:224, 06:327, 08:24, 12:323, 16:90, 16:180



Lot No.: **5N0**

Lot-specific information

Lot No.	Fragment Size	Fragment Size	Allele	Allele
30 <sup>6</sup>	350 bp 535 bp	800 bp	*02:38:01N *02:58	*03:07:01:01-03:07:02, 03:10, 03:15, 03:29, 03:45, 03:163, 03:268, 03:297, 03:450, 03:461, 04:08, 04:34, 04:147, 04:212, 05:27, 05:39, 05:151, 06:96, 06:197, 15:15, 15:77, 15:195, 17:07, 18:08
31 <sup>4</sup>	100 bp  165 bp	1070 bp	*02:42, 02:107, 02:152  *02:83	*01:02:34, 01:21, 04:140, 04:166:01, 04:166:03, 04:220, 05:98, 05:197, 06:02:72, 06:05, 07:01:74, 07:02:09, 07:125:02, 08:14, 08:80, 08:103, 12:16:01, 12:147, 12:227, 12:279, 15:63, 15:113, 16:80, <b>B*15:436, B*67:02:01:01-67:02:01:02</b> *05:224, 06:327, 08:24, 12:323, 16:90, 16:180
32	215 bp 240 bp	1070 bp	*02:92N *02:38:02N, 02:81	
33	320 bp	1070 bp	*02:87, 02:94	*07:101, 07:148, 07:161, 07:583, 08:195, 15:107, 15:178, <b>A*01:203, A*11:166, A*30:56, A*31:85, A*80:01:01:01-80:09N, B*18:96, B*44:157, B*55:74</b>
34	160 bp	1070 bp	*02:105N	
35	210 bp	1070 bp	*02:106	
36	245 bp	1070 bp	*02:27:01-02:27:02, 02:65, 02:115, 02:131	*03:308, 04:383, 07:756, 16:34
37 <sup>4</sup>	125 bp 245 bp	1070 bp	*02:91 *02:135N	
38	145 bp 265 bp	1070 bp	*02:93 *02:48	<b>B*15:365</b>
39	390 bp	800 bp	*02:07, 02:158	
40	165 bp  265 bp	1070 bp	*02:98  *02:48	<b>B*07:344, B*15:422, B*15:445, B*40:122, B*15:365</b>
41	140 bp 250 bp	1070 bp	*02:104 *02:121N	
42	195 bp	800 bp	*02:02:13, 02:02:37, 02:02:53, 02:05:01, 02:06:01, 02:10:01:01-02:10:08, 02:12, 02:14:01-02:14:02, 02:17, 02:27:02, 02:33, 02:36:02, 02:38:02N, 02:40:02, 02:43:02, 02:55:02, 02:58, 02:73, 02:76, 02:89, 02:94-02:95, 02:109-02:110, 02:125, 02:133, 02:137, 02:143, 02:161, 02:168-02:169N, 02:174, 02:176, 02:181-02:182, 02:197	*01:02:06, 01:02:68, 01:04, 01:09:02, 01:21, 01:97, 01:131, 04:01:01:01-04:01:01:29, 04:01:01:31-04:01:06, 04:01:09-04:01:141, 04:03:01:01-04:03:06, 04:03:08-04:20, 04:23-04:109, 04:110 <sup>?</sup> , 04:111-04:159, 04:160:02-04:162, 04:164:01-04:222, 04:224-04:240, 04:242-04:386, 04:388-04:456Q, 05:12, 05:18:01, 05:18:05-05:18:06, 05:103:02, 05:106:02, 06:02:01:01-06:02:01:60, 06:02:03-06:02:26, 06:02:28-06:02:94, 06:03:01-06:15, 06:17-06:40, 06:42:01-06:61, 06:63-06:91, 06:93-06:111, 06:113-06:127:01:01, 06:127:02-06:203, 06:205,



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Lot-specific information

				06:207-06:262, 06:264-06:335, 08:01:01:01-08:01:32, 08:03:01:01-08:03:04, 08:06, 08:08:01-08:11, 08:14, 08:16:01-08:16:02, 08:20-08:22:01:02, 08:24, 08:26N-08:27, 08:33:02-08:33:04, 08:35-08:36N, 08:38-08:42, 08:44, 08:46, 08:50, 08:54, 08:56, 08:58-08:61, 08:65-08:66, 08:72:01-08:72:02, 08:78-08:89N, 08:91, 08:95-08:99, 08:101-08:102, 08:105-08:106, 08:109, 08:117-08:119, 08:121N-08:122, 08:124, 08:127N-08:131, 08:133, 08:135-08:138, 08:141Q, 08:143-08:145, 08:147-08:148, 08:153-08:155, 08:157, 08:160, 08:162-08:165, 08:173N, 08:175-08:178, 08:186-08:187, 08:189-08:190, 08:192-08:194, 08:196-08:197, 08:199, 08:203-08:205, 08:208N-08:210, 08:212, 08:217, 08:219-08:221, 08:228, 08:232, 12:02:01-12:02:26, 12:02:28-12:02:31, 12:02:33, 12:02:35-12:03:15, 12:03:18-12:03:26, 12:03:28-12:03:29, 12:03:31-12:13:01:02, 12:14:02-12:31:02, 12:33-12:143, 12:145-12:180, 12:182-12:184, 12:186-12:275, 12:277-12:298, 12:300-12:349, 14:02:01:01-14:02:04, 14:02:06-14:16, 14:18-14:91, 14:93N-14:135, 15:02:01:01-15:02:04, 15:02:06-15:02:12, 15:02:14-15:02:39, 15:02:41-15:02:47, 15:02:49-15:05:05, 15:05:07, 15:05:09-15:06:02, 15:07:01:01-15:08:01, 15:09:01:01-15:13:02, 15:15-15:19, 15:21-15:64, 15:66-15:101, 15:103-15:194, 15:196-15:241, 16:01:01:01-16:01:20, 16:01:22-16:01:34, 16:01:36-16:02:02, 16:02:04-16:02:20, 16:04:01:01-16:04:01:03, 16:04:03-16:04:05, 16:06-16:26, 16:28-16:104, 16:106-16:187, 17:01:01:02-17:01:10, 17:01:12-17:05, 17:07-17:33, 17:35:01-17:60, 18:01:01:01-18:14
<b>43</b>	160 bp	1070 bp	*02:150N	*06:46N
<b>44</b>	540 bp	1070 bp	*02:43:01-02:43:02, 02:180, 02:197	*01:14, 01:154, 04:01:01:01-04:01:01:29, 04:01:01:31-04:01:05, 04:01:07-04:01:76, 04:01:78-04:01:141, 04:03:01:01-04:07:02, 04:09N-04:10, 04:12-04:20, 04:23-04:28, 04:30-04:31, 04:33, 04:35:01-04:35:02, 04:37-04:54:02, 04:56-04:58, 04:60-04:76, 04:78-04:84,



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Lot-specific information

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 18:01:01:01-18:02:05, 18:04-18:07N,  
 18:09-18:14

45<sup>8</sup>

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**Negative Control**



**Lot No.: 5N0**

**Lot-specific information**

<sup>1</sup>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\*02 high resolution 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.

<sup>2</sup>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.

<sup>3</sup>For several HLA Class I alleles 1<sup>st</sup> and/or 4<sup>th</sup> 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.

<sup>4</sup>HLA-specific PCR products shorter than 125 base pairs have a lower intensity and are less sharp than longer PCR products.

<sup>5</sup>Primer mixes 13, 16 and 18 may give a lower yield of HLA-specific PCR product than the other C\*02 primer mixes.

<sup>6</sup>Primer mixes 10, 16, 29 and 30 may have tendencies of unspecific amplifications.

<sup>7</sup>Primer mixes 10 and 28 have a tendency to giving rise to primer oligomer formation.

<sup>8</sup>Primer mix 45 contains a negative control, which will amplify the 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.

Abbreviations

w: might be weakly amplified.

?: nucleotide sequence information not available for the primer matching sequence.





Lot No.: **5N0**

Lot-specific information

## PRIMER SPECIFICATION

Well No.	1	2	3	4	5	6	7	8	9	10	11	12
Length of spec. PCR product	250	95	105	65	145	160	130	70	200	130	90	150
			135	150	245	215		280			170	230
Length of int. pos. control <sup>1</sup>	800	800	800	1070	1070	800	800	1070	1070	800	800	1070
5'-primer(s) <sup>2</sup>	2 <sup>nd</sup>   5'-CCA 3'	486 5'-ACA 3'	486 5'-ACA 3'	92 5'-gTg 3'	356 5'-CCg 3'	364 5'-ggT 3'	2 <sup>nd</sup>   5'-CCA 3'	105 5'-gCT 3'	703 5'-CTA 3'	113 5'-CCA 3'	486 5'-ACA 3'	97 5'-TCg 3'
				463 5'-TgA 3'	361 5'-AgT 3'	370 5'-ACT 3'				118 5'-CCA 3'		368 5'-gTT 3'
					453 5'-AAT 3'	420 5'-TTA 3'						449 5'-CCA 3'
3'-primer(s) <sup>3</sup>	538 5'-CCA 3'	538 5'-CCA 3'	538 5'-CAg 3'	201 5'-CTT 3'	559 5'-CTC 3'	538 5'-CCA 3'	418 5'-gTC 3'	134 5'-AgC 3'	861 5'-TCg 3'	201 5'-CTT 3'	527 5'-CCg 3'	201 5'-CTT 3'
	543 5'-gCC 3'		555 5'-CCg 3'	486 5'-gCT 3'				343 5'-g 3'		201 5'-CTC 3'	538 5'-CCg 3'	559 5'-CTC 3'
			578 5'-TgT 3'								613 5'-gCA 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. PCR product	225	80	130	250	110	235	80	130	115	65	85	325
	265	115	190		160			165	210	110	210	390
Length of int. pos. control <sup>1</sup>	1070	800	1070	1070	1070	800	1070	1070	1070	1070	1070	1070
5'-primer(s) <sup>2</sup>	118 5'-CCA 3'	486 5'-ACA 3'	113 5'-CCA 3'	2 <sup>nd</sup>   5'-CCA 3'	486 5'-ACA 3'	118 5'-CCg 3'	486 5'-ACA 3'	419 5'-gTC 3'	125 5'-CgA 3'	244 5'-CgC 3'	322 5'-gCC 3'	409 5'-ggC 3'
			369 5'-TAC 3'			118 5'-CCg 3'			370 5'-ACT 3'	463 5'-TgA 3'	703 5'-CTA 3'	
									373 5'-gCg 3'			
									374 5'-CTA 3'			
3'-primer(s) <sup>3</sup>	302 5'-ggC 3'	527 5'-CCg 3'	201 5'-CTT 3'	538 5'-CAg 3'	555 5'-CCg 3'	312 5'-AgT 3'	527 5'-CCA 3'	506 5'-Tgg 3'	201 5'-CTT 3'	312 5'-AgT 3'	419 5'-Cgg 3'	3 <sup>rd</sup>   5'-CTC 3'
	302 5'-ggC 3'	559 5'-CgT 3'	515 5'-CCA 3'		559 5'-CgT 3'			515 5'-CCA 3'	538 5'-CCA 3'	486 5'-gCT 3'	745 5'-AgC 3'	
	341 5'-CgT 3'		518 5'-CCA 3'		603 5'-TTg 3'			545 5'-AgA 3'			865 5'-CCT 3'	
											871 5'-CgA 3'	
Well No.	13	14	15	16	17	18	19	20	21	22	23	24





Lot No.: **5N0**

Lot-specific information

Well No.	25	26	27	28	29	30	31	32	33	34	35	36
Length of spec.	160	140	140	90	210	350	100	215	320	160	210	245
PCR product	215	260		170	385	535	165	240				
Length of int.	1070	1070	800	800	1070	800	1070	1070	1070	1070	1070	1070
pos. control <sup>1</sup>												
5'-primer(s) <sup>2</sup>	363	105	105	105	118	312	142	356	28	105	703	118
	5' -AgC 3'	5' -gCT 3'	5' -gCT 3'	5' -gCT 3'	5' -CCA 3'	5' -AAA 3'	5' -TCT 3'	5' -CCg 3'	5' -TCC 3'	5' -gCT 3'	5' -CTA 3'	5' -CCA 3'
	419	369	486	359	736		736	369				
	5' -gTA 3'	5' -TAC 3'	5' -ACA 3'	5' -CCg 3'	5' -gCA 3'		5' -gCA 3'	5' -TAg 3'				
				363				385				
				5' -AgC 3'				5' -ggC 3'				
				364								
				5' -ggT 3'								
				373								
				5' -gCg 3'								
3'-primer(s) <sup>3</sup>	538	203	202	153	289	369	201	559	176	223	872	312
	5' -CCA 3'	5' -CTg 3'	5' -TCC 3'	5' -ACT 3'	5' -AgC 3'	5' -CCT 3'	5' -CTT 3'	5' -CTC 3'	5' -ACT 3'	5' -CCA 3'	5' -CCA 3'	5' -Agg 3'
		580	578	486	289	558	861					327
		5' -TCC 3'	5' -TgA 3'	5' -gCT 3'	5' -AgC 3'	5' -Agg 3'	5' -TCg 3'					5' -TTT 3'
		595	595		956							
		5' -CCg 3'	5' -CCT 3'		5' -CAg 3'							
		595	595									
		5' -CCT 3'	5' -CCg 3'									
Well No.	25	26	27	28	29	30	31	32	33	34	35	36

Well No.	37	38	39	40	41	42	43	44
Length of spec.	125	145	390	165	140	195	160	540
PCR product	245	265		265	250			
Length of int.	1070	1070	800	1070	1070	800	1070	1070
pos. control <sup>1</sup>								
5'-primer(s) <sup>2</sup>	2 <sup>nd</sup> I	369	312	369	118	2 <sup>nd</sup> I	742	312
	5' -CCA 3'	5' -TAC 3'	5' -AAA 3'	5' -TAC 3'	5' -CCA 3'	5' -CCA 3'	5' -ACT 3'	5' -AAA 3'
3'-primer(s) <sup>3</sup>	413	475	411	493	218	485	861	559
	5' -ggC 3'	5' -ggT 3'	5' -Tgg 3'	5' -CTC 3'	5' -gCT 3'	5' -CCg 3'	5' -TCg 3'	5' -CgT 3'
	536	594		594	327			
	5' -.AC 3'	5' -CCT 3'		5' -CCT 3'	5' -TTT 3'			
Well No.	37	38	39	40	41	42	43	44

<sup>1</sup>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.

<sup>2</sup>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](http://www.ebi.ac.uk/imgt/hla) web site. The sequence of the 3 terminal nucleotides of the primer is given.

<sup>3</sup>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](http://www.ebi.ac.uk/imgt/hla) web site. The sequence of the 3 terminal nucleotides of the primer is given.



Lot No.: **5N0**

Lot-specific information

CELL LINE VALIDATION SHEET																					
HLA-C*02 SSP primer set <sup>3</sup>																					
					Well <sup>2</sup>																
					1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	
					Prod. No.:	202013001	202013002	202013003	202013004	202013005	202013006	202013007	202013008	202013009	202013010	202013011	202013012	202013013	202013014	202013015	202013016
IHCW cell line <sup>1</sup>		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	*07:18		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
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	*17:01	*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	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



Lot No.: **5N0**

Lot-specific information

<b>CELL LINE VALIDATION SHEET</b>																							
<b>HLA-C*02 SSP primer set<sup>3</sup></b>																							
				<b>Well<sup>2</sup></b>																			
				17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32				
				Prod. No.:	202013017	202013018	202013019	202013020	202013021	202013022	202013023	202013024	202013025	202013026	202013027	202013028	202013029	202013030	202013031	202134832			
<b>IHWC cell line<sup>1</sup></b>		<b>C*</b>																					
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	*17:01	*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	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-			



Lot No.: **5N0**

Lot-specific information

				Well <sup>2</sup>												
				33	34	35	36	37	38	39	40	41	42	43	44	
				Prod. No.:	202013033	202013034	202013035	202013036	202013037	202134838	202013039	202134840	202013041	202013042	202013043	202134844
IHWC cell line <sup>1</sup>		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	*17:01	*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	-	-	-	-	-	-	-	-	-	-	+	-	+



**Lot No.: 5N0**

**Lot-specific information**

<sup>1</sup>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.

<sup>2</sup>The A\*80:01 allele is amplified by primer mix 33 in the 9282 (CTM3953540) cell line.

<sup>3</sup>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.

No DNAs carrying the alleles to be amplified by primer solutions 3 to 8, 11, 12, 14, 15, 17, 19 to 23, 26 to 28, 30 to 32, 34 to 41 and 43 were available. The specificity of the primers in primer solutions 3 to 8, 11, 12, 14, 15, 17, 19, 22, 23, 26, 28, 30, 31, 36, 39 and 41 was tested by separately adding one or two additional 5'-primers, and one or two additional 3'-primers respectively. In primer solutions 21, 32 and 43 it was only possible to test the 3'-primers, the 5'-primers were not possible to be tested. In primer solutions 20, 27, 34, 35, 37, 38 and 40 it was only possible to test the 5'-primers, the 3'-primers were not possible to be tested.

In primer solutions 1, 3, 8, 11, 13, 15, 17, 23, 26, 28, 30, 36 and 41 one, two or three of the 3'-primers were not possible to be tested, and in primer solutions 4 to 6, 10, 12, 15, 22, 23, 28, 29 and 31 one, two or three 5'-primers were not possible to be tested.

In addition, one or more primers in primer solutions 10, 13, 16, 25, 29 and 42 were tested by separately adding one 5'-primer or one or two 3'-primers.



Lot No.: **5N0**

Lot-specific information

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