

101.613-12– including *Taq* polymerase, IFU-01  
101.613-12u – without *Taq* polymerase, IFU-02

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“Instructions for Use” (IFU)

Lot No.: **24V**

Lot-specific information  
**Olerup SSP® HLA-C\*05**

<b>Product number:</b>	<b>101.613-12 – including <i>Taq</i> polymerase</b> <b>101.613-12u – without <i>Taq</i> polymerase</b>
<b>Lot number:</b>	<b>24V</b>
<b>Expiry date:</b>	<b>2016-July-01</b>
<b>Number of tests:</b>	<b>12</b>
<b>Number of wells per test:</b>	<b>31+1</b>
<b>Storage - pre-aliquoted primers:</b>	<b>dark at -20°C</b>
- PCR Master Mix:	<b>-20°C</b>
- Adhesive PCR seals	<b>RT</b>
- Product Insert	<b>RT</b>

**This Product Description is only valid for Lot No. 24V.**

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\*05 LOT (61R)**

The HLA-C\*05 kit is updated for new alleles to enable separation of:

- Confirmed<sup>1</sup> alleles as listed in the IMGT/HLA database
- Polymorphisms in exons outside of the region encoding the peptide binding domain
- Null and Alternatively expressed alleles

A well containing Negative Control primer pairs has been added.

The format of the Product Insert and Worksheet have been changed.

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

The HLA-C\*05 specificity and interpretation tables have been updated for the HLA-C alleles described since the previous *Olerup SSP®* HLA-C\*05 lot was made (**Lot No. 61R**).

As of lot series V, the Specificity Table is included in the lot-specific Product Insert, and the Interpretation Table is included in the Worksheet.

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

Well	5'-primer	3'-primer	rationale
4	Added	Added	Primer pair added from well 9.
9	Moved, added	Moved, added	Primer pair moved to well 4, primer pair added from well 32
10	Exchanged	Added	5'-primer exchanged for improved specificity, 3'-primer added for the C*05:92N allele.
12	Added	-	Exchanged positive control primer pair, 3'-primer added for the C*05:97 allele.
14	-	Added	3'-primer added for the C*05:91N allele.
16	Added	Added	Primer pair added for the C*05:93 allele.
18	Added	-	5'-primer added for the C*05:87 allele.
20	Exchanged	-	5'-primer exchanged for improved specificity.
21	Added	-	5'-primer added for improved resolution the C*05:10 and *05:38 alleles.
32	Moved	Moved	Primer pair moved to well 9, Negative Control

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## PRODUCT DESCRIPTION

### HLA-C\*05 SSP subtyping

#### CONTENT

The primer set contains 5'- and 3'-primers for identifying the C\*05:01 to C\*05:97 alleles.

#### PLATE LAYOUT

Each test consists of 32 PCR reactions in a 32 well PCR plate.

<b>1</b>	<b>2</b>	<b>3</b>	<b>4</b>	<b>5</b>	<b>6</b>	<b>7</b>	<b>8</b>
<b>9</b>	<b>10</b>	<b>11</b>	<b>12</b>	<b>13</b>	<b>14</b>	<b>15</b>	<b>16</b>
<b>17</b>	<b>18</b>	<b>19</b>	<b>20</b>	<b>21</b>	<b>22</b>	<b>23</b>	<b>24</b>
<b>25</b>	<b>26</b>	<b>27</b>	<b>28</b>	<b>29</b>	<b>30</b>	<b>31</b>	<b>NC</b>

The 32 well cut PCR plate is marked with ‘HLA-C\*05’ in silver/gray ink.

Well No. 1 is marked with the Lot No. ‘24V’.

Wells 1 to 31 – HLA-C\*05 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\*05 alleles will be amplified by primer mixes 1 to 7, 10 to 13, 15 to 17, 19, 21 to 24, 26, 27, 29 and 31. In addition, a few HLA-A and HLA-B alleles will be amplified by primer mixes 3, 5, 6, 10 to 12, 21, 26 and 31.

For further details see Specificity Table.

#### UNIQUELY IDENTIFIED ALLELES

All the HLA-C\*05 alleles, i.e. **C\*05:01 to C\*05:97**, recognized by the HLA Nomenclature Committee in October 2013<sup>1</sup> will be amplified by the primers in the HLA-C\*05 subtyping kit<sup>2,3</sup>.

The HLA-C\*05 kit enables separation of the confirmed HLA-C\*05 alleles as listed in the IMGT/HLA database. 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\*05 alleles is listed below.

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The HLA-C\*05 kit also enables identification of polymorphisms in exons outside of the region encoding the peptide binding domain and of null and alternatively expressed alleles.

The following HLA-C\*05 alleles can be distinguished by the different sizes of the HLA-specific PCR product:

Alleles	Primer mix	Alleles	Primer mix
C*05:03, 05:07N	4	C*05:24, 05:36	23
C*05:06, 05:55	8	C*05:25, 05:33	11
C*05:08, 05:30, 05:89	10	C*05:28, 05:39	26
C*05:14, 05:93	16	C*05:32, 05:53	30
C*05:15, 05:91N	14	C*05:35, 05:40	25
C*05:21, 05:26	20	C*05:37, 05:41	29

The HLA-C\*05 subtyping kit cannot distinguish the following silent mutations: the C\*05:01:01:01-05:01:27, the C\*05:04:01-05:04:02, C\*05:09:01-05:09:02, the C\*05:18:02-05:18:03, the C\*05:22:01-05:22:02, the C\*05:29:01-05:29:02 and the C\*05:44:01-05:44:02 alleles.

<sup>1</sup>HLA-C alleles listed on the IMGT/HLA web page 2013-October-11, release 3.14.0, [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 C\*05:18:01 and C\*08:10 alleles, the C\*05:29:01-05:29:02 and C\*08:25 and 08:94 alleles and the C\*05:92N and C\*08:55N alleles will give rise to identical amplification patterns with the HLA-C\*05 subtyping kit. These alleles can be distinguished by the HLA-C low resolution kit and/or the C\*08 subtyping kit.

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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>
<b>C*05:01:01:01</b>	<b>Confirmed</b>	<b>C*05:13</b>	<b>Confirmed</b>	C*05:48N	Unconfirmed	C*05:86	Unconfirmed
<b>C*05:01:01:02</b>	<b>Confirmed</b>	<b>C*05:14</b>	<b>Confirmed</b>	C*05:49	Unconfirmed	C*05:87	Unconfirmed
C*05:01:02	Unconfirmed	C*05:15	Unconfirmed	C*05:50	Unconfirmed	C*05:88	Unconfirmed
C*05:01:03	Unconfirmed	C*05:16	Unconfirmed	C*05:51Q	Unconfirmed	C*05:89	Unconfirmed
C*05:01:04	Unconfirmed	C*05:17	Unconfirmed	C*05:52	Unconfirmed	C*05:90	Unconfirmed
C*05:01:05	Unconfirmed	<b>C*05:18:01</b>	<b>Confirmed</b>	C*05:53	Unconfirmed	C*05:91N	Unconfirmed
C*05:01:06	Unconfirmed	C*05:18:02	Unconfirmed	C*05:54	Unconfirmed	C*05:92N	Unconfirmed
<b>C*05:01:07</b>	<b>Confirmed</b>	C*05:18:03	Unconfirmed	<b>C*05:55</b>	<b>Confirmed</b>	C*05:93	Unconfirmed
<b>C*05:01:08</b>	<b>Confirmed</b>	<b>C*05:19</b>	<b>Confirmed</b>	C*05:56	Unconfirmed	C*05:94	Unconfirmed
C*05:01:09	Unconfirmed	C*05:20	Unconfirmed	C*05:57	Unconfirmed	C*05:95	Unconfirmed
C*05:01:10	Unconfirmed	C*05:21	Unconfirmed	C*05:58:01	Unconfirmed	C*05:96	Unconfirmed
<b>C*05:01:11</b>	<b>Confirmed</b>	<b>C*05:22:01</b>	<b>Confirmed</b>	C*05:58:02	Unconfirmed	C*05:97	Unconfirmed
<b>C*05:01:12</b>	<b>Confirmed</b>	<b>C*05:22:02</b>	<b>Confirmed</b>	C*05:59	Unconfirmed		
C*05:01:13	Unconfirmed	C*05:23	Unconfirmed	C*05:60	Unconfirmed		
C*05:01:14	Unconfirmed	<b>C*05:24</b>	<b>Confirmed</b>	C*05:61	Unconfirmed		
C*05:01:15	Unconfirmed	C*05:25	Unconfirmed	C*05:62	Unconfirmed		
<b>C*05:01:16</b>	<b>Confirmed</b>	<b>C*05:26</b>	<b>Confirmed</b>	C*05:63	Unconfirmed		
<b>C*05:01:17</b>	<b>Confirmed</b>	<b>C*05:27</b>	<b>Confirmed</b>	C*05:64:01	Unconfirmed		
C*05:01:18	Unconfirmed	<b>C*05:28</b>	<b>Confirmed</b>	C*05:64:02	Unconfirmed		
C*05:01:19	Unconfirmed	<b>C*05:29:01</b>	<b>Confirmed</b>	C*05:65	Unconfirmed		
<b>C*05:01:20</b>	<b>Confirmed</b>	C*05:29:02	Unconfirmed	C*05:66	Unconfirmed		
C*05:01:21	Unconfirmed	C*05:30	Unconfirmed	C*05:67	Unconfirmed		
C*05:01:22	Unconfirmed	C*05:31	Unconfirmed	C*05:68	Unconfirmed		
C*05:01:23	Unconfirmed	<b>C*05:32</b>	<b>Confirmed</b>	C*05:69	Unconfirmed		
C*05:01:24	Unconfirmed	<b>C*05:33</b>	<b>Confirmed</b>	C*05:70	Unconfirmed		
C*05:01:25	Unconfirmed	<b>C*05:34</b>	<b>Confirmed</b>	C*05:71	Unconfirmed		
C*05:01:26	Unconfirmed	<b>C*05:35</b>	<b>Confirmed</b>	C*05:72	Unconfirmed		
C*05:01:27	Unconfirmed	<b>C*05:36</b>	<b>Confirmed</b>	C*05:73	Unconfirmed		
C*05:03	Unconfirmed	<b>C*05:37</b>	<b>Confirmed</b>	C*05:74	Unconfirmed		
<b>C*05:04:01</b>	<b>Confirmed</b>	C*05:38	Unconfirmed	C*05:75	Unconfirmed		
C*05:04:02	Unconfirmed	<b>C*05:39</b>	<b>Confirmed</b>	C*05:76	Unconfirmed		
C*05:05	Unconfirmed	C*05:40	Unconfirmed	C*05:77	Unconfirmed		
<b>C*05:06</b>	<b>Confirmed</b>	C*05:41	Unconfirmed	C*05:78	Unconfirmed		
<b>C*05:07N</b>	<b>Confirmed</b>	<b>C*05:42</b>	<b>Confirmed</b>	C*05:79	Unconfirmed		
<b>C*05:08</b>	<b>Confirmed</b>	C*05:43	Unconfirmed	C*05:80	Unconfirmed		
<b>C*05:09:01</b>	<b>Confirmed</b>	C*05:44:01	Unconfirmed	C*05:81	Unconfirmed		
C*05:09:02	Unconfirmed	C*05:44:02	Unconfirmed	C*05:82	Unconfirmed		
<b>C*05:10</b>	<b>Confirmed</b>	C*05:45	Unconfirmed	C*05:83	Unconfirmed		
C*05:11	Unconfirmed	<b>C*05:46</b>	<b>Confirmed</b>	C*05:84	Unconfirmed		
C*05:12	Unconfirmed	C*05:47	Unconfirmed	C*05:85	Unconfirmed		

<sup>1</sup> Allele status “confirmed” or “unconfirmed” as listed on the IMGT/HLA web page 2014-October-11, release 3.14.0, [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\*05 homo- and heterozygotes is available upon request.

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**SPECIFICITY TABLE**

**HLA-C\*05 SSP subtyping**

Specificities and sizes of the PCR products of the 31+1 primer mixes used for HLA-C\*05 SSP subtyping

Primer Mix	Size of spec. PCR product <sup>1</sup>	Size of control band <sup>2</sup>	Amplified HLA-C*05 alleles <sup>3</sup>	Other amplified HLA Class I alleles <sup>4</sup>
<b>1</b>	155 bp	<b>800 bp</b>	*05:01:01:01-05:01:27, 05:03-05:08, 05:10-05:11, 05:13-05:16, 05:19-05:51Q, 05:53-05:86, 05:88-05:96	*07:41, 08:02:01-08:02:10, 08:04:01-08:05, 08:07, 08:12-08:13, 08:17-08:19, 08:23, 08:25, 08:28-08:32, 08:34, 08:37, 08:43, 08:45, 08:47-08:49, 08:52N-08:53, 08:55N, 08:57, 08:62-08:63, 08:67-08:71, 08:73-08:77, 08:90, 08:92-08:94
<b>2</b>	165 bp	1070 bp	*05:01:01:01-05:01:27, 05:03-05:28, 05:30-05:47, 05:49-05:91N, 05:93-05:97	*04:129, 06:05, 06:67, 08:10, 12:21, 12:33, 17:05
<b>3</b>	150 bp	1070 bp	*05:09:01-05:09:02, 05:17, 05:44:01-05:44:02, 05:52, 05:79	*01:13, 02:51, 03:87, 07:130, 08:15:01-08:15:02, 08:51, 16:27, <b>B*15:33, B*15:248</b>
<b>4<sup>5</sup></b>	120 bp 285 bp	<b>800 bp</b>	*05:03 *05:07N	*07:52
<b>5</b>	225 bp 285 bp	1070 bp	*05:04:01-05:04:02 *05:31	*07:68, 07:260, 07:302, 08:09, 08:11, 08:59, <b>B*18:83</b>
<b>6</b>	270 bp	1070 bp	*05:05, 05:16, 05:85	*08:12, 08:62, 08:82, <b>A*02:425, A*29:10, A*68:69, B*14:32, B*18:83, B*44:148</b>
<b>7</b>	265 bp	1070 bp	*05:01:01:01-05:01:27, 05:03-05:04:02, 05:06-05:08, 05:10-05:16, 05:18:01-05:51Q, 05:53-05:60, 05:62-05:81, 05:83-05:84, 05:86-05:97	*04:120, 07:04:01-07:04:08, 07:11-07:12, 07:41, 07:63, 07:68, 07:101, 07:139, 07:142, 07:181, 07:199:01-07:199:02, 07:260, 07:272, 07:302, 07:323-07:324, 07:328-07:329N, 07:336, 08:01:01-08:14, 08:16:01-08:50, 08:52N-08:61, 08:63, 08:65-08:69, 08:71, 08:73-08:81, 08:83-08:88N, 08:90-08:94
<b>8<sup>5</sup></b>	85 bp 210 bp	<b>800 bp</b>	*05:06 *05:55	
<b>9<sup>5</sup></b>	105 bp 175 bp	1070 bp	*05:51Q *05:48N	

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<b>10<sup>5</sup></b>	95 bp	1070 bp	*05:08, 05:52, 05:89	*02:51, 08:29, 08:31, <b>B*15:33</b> , <b>B*15:248</b>
	250 bp		*05:30	
	320 bp		*05:92N	*08:55N
<b>11<sup>5</sup></b>	115 bp	1070 bp	*05:33	
	205 bp		*05:25, 05:42	*04:129, 06:05, 06:67, 07:101, 07:148, 07:161, 08:28, <b>A*80:01:01:01<sup>w</sup>-80:03<sup>w</sup></b>
<b>12<sup>6</sup></b>	155 bp	<b>800 bp</b>	*05:97	
	225 bp		*05:38	
	285 bp		*05:10	*08:44, 08:61, 08:82, <b>B*44:148</b>
<b>13<sup>5</sup></b>	95 bp	1070 bp	*05:11, 05:17, 05:27, 05:68, 05:70, 05:79	*03:87, 07:130, 08:04:01- 08:04:03, 08:13, 08:57, 08:93
<b>14<sup>5</sup></b>	120 bp	1070 bp	*05:12, 05:15	
	200 bp		*05:91N	
<b>15</b>	185 bp	1070 bp	*05:34	*06:13
	240 bp		*05:13	
<b>16</b>	195 bp	1070 bp	*05:14	
	470 bp		*05:93	*03:171, 03:211, 04:144, 06:73, 08:20, 08:40, 12:109
<b>17</b>	155 bp	1070 bp	*05:12, 05:18:01	*04:120, 08:01:01-08:01:12, 08:03:01-08:03:02, 08:06, 08:08-08:11, 08:14, 08:16:01- 08:16:02, 08:20-08:22, 08:24, 08:26N-08:27, 08:33:02- 08:33:03, 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, 08:78-08:88N, 08:91
<b>18</b>	160 bp	1070 bp	*05:87	
	235 bp		*05:19	
<b>19</b>	175 bp	<b>800 bp</b>	*05:20	*01:43, 07:101, 07:148, 07:161, 08:01:01-08:09, 08:11-08:12, 08:14-08:15:02, 08:17, 08:19- 08:24, 08:26N-08:54, 08:56- 08:63, 08:65-08:88N, 08:90- 08:93
<b>20</b>	260 bp	1070 bp	*05:26	
	390 bp		*05:21	
<b>21</b>	230 bp	1070 bp	*05:04:01-05:04:02, 05:22:01-05:22:02, 05:38	*07:04:01-07:04:08, 07:11- 07:12, 07:63, 07:68, 07:101, 07:139, 07:142, 07:181, 07:199:01-07:199:02, 07:260, 07:272, 07:302, 07:323-07:324, 07:328-07:329N, 07:336, 08:09, 08:11, 08:83, <b>B*44:148</b>
<b>22<sup>5</sup></b>	100 bp	<b>800 bp</b>	*05:23, 05:62	*07:02:35, 08:07, 08:47
<b>23<sup>5</sup></b>	85 bp	1070 bp	*05:24	
	135 bp		*05:36	*07:148



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<b>24</b>	185 bp	1070 bp	*05:43	*08:37
	265 bp		*05:29:01-05:29:02	*08:13, 08:16:01, 08:25, 08:94
<b>25<sup>5</sup></b>	105 bp	1070 bp	*05:40	
	205 bp		*05:35	
<b>26<sup>5</sup></b>	115 bp	1070 bp	*05:27, 05:39	*03:87, <b>B*15:33, B*15:248</b>
	185 bp		*05:28	*06:64
<b>27</b>	155 bp	1070 bp	*05:42, 05:46	*04:129, 06:67, 07:101, 07:148, 07:161, 08:05, 08:21, 17:05
<b>28<sup>7</sup></b>	200 bp	<b>800 bp</b>	*05:45	
<b>29</b>	140 bp	1070 bp	*05:41	*04:78
	185 bp		*05:34	*06:13
	260 bp		*05:37	
<b>30<sup>5</sup></b>	70 bp	1070 bp	*05:53	
	175 bp		*05:32	
<b>31</b>	155 bp	1070 bp	*05:18:02-05:18:03	*07:04:01-07:04:08, 07:11- 07:12, 07:63, 07:68, 07:101, 07:139, 07:142, 07:181, 07:199:01-07:199:02, 07:260, 07:272, 07:302, 07:323-07:324, 07:328-07:329N, 07:336, 08:33:01, <b>B*14:32, B*18:83,</b> <b>B*44:148</b>
<b>32<sup>8</sup></b>	-	-	<b>Negative Control</b>	

<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 C\*05 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 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.

<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.



101.613-12– including *Taq* polymerase, IFU-01  
101.613-12u – without *Taq* polymerase, IFU-02

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**Lot No.: 24V**

**Lot-specific information**

<sup>4</sup>Due to the sharing of sequence motifs between HLA-C alleles, non-HLA-C\*05 alleles will be amplified by primer mixes 1 to 7, 10 to 13, 15 to 17, 19, 21 to 24, 26, 27, 29 and 31. In addition, a few HLA-A and HLA-B alleles will be amplified by primer mixes 3, 5, 6, 10 to 12, 21, 26 and 31.

<sup>5</sup>HLA-specific PCR products shorter than 125 base pairs have a lower intensity and are less sharp than longer PCR products.

<sup>6</sup>Primer mix 12 may have tendencies of unspecific amplifications.

<sup>7</sup>Primer mix 28 may have a tendency to giving rise to primer oligomer formation.

<sup>8</sup>Primer mix 32 contains a negative control, which will amplify more than 95% of HLA amplicons as well as the amplicons generated by control primer pairs. PCR product sizes range from 75 to 200 base pairs. The PCR product generated by the control primer pair is 430 base pairs.

'w', might be weakly amplified.

101.613-12– including *Taq* polymerase, IFU-01  
101.613-12u – without *Taq* polymerase, IFU-02

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Lot No.: **24V**

Lot-specific information

**PRIMER SPECIFICATION**

Well No.	1	2	3	4	5	6	7	8	9	10	11	12
Length of spec.	155	165	150	120	225	270	265	85	105	95	115	155
PCR product				285	285			210	175	250	205	225
										320		285
Length of int.	<b>800</b>	1070	1070	<b>800</b>	1070	1070	1070	<b>800</b>	1070	1070	1070	<b>800</b>
pos. control <sup>1</sup>												
5'-primer(s) <sup>2</sup>	485	176	485	355	355	361	379	176	166	28	176	355
	5'-CAA 3'	5'-gCA 3'	5'-CAA 3'	5'-CC 3'	5'-TCC 3'	5'-AgT 3'	5'-ACC 3'	5'-gCA 3'	5'-CgT 3'	5'-TCA 3'	5'-gCA 3'	5'-TCA 3'
				3 <sup>rd</sup> I	419	379			485	485		416
				5'-Cgg 3'	5'-gTC 3'	5'-ACg 3'			5'-CAA 3'	5'-CAA 3'		5'-CCg 3'
												485
												5'-CAg 3'
3'-primer(s) <sup>3</sup>	601	302	595	601	601	601	601	221	302	106	248	601
	5'-CTT 3'	5'-ggT 3'	5'-CCT 3'	5'-CTT 3'	5'-CTT 3'	5'-CTT 3'	5'-CTT 3'	5'-ACC 3'	5'-ggT 3'	5'-CAT 3'	5'-AAC 3'	5'-CTT 3'
			595	668				343	550	175	341	
			5'-CCg 3'	5'-TgA 3'				5'-T 3'	5'-CAg 3'	5'-CTA 3'	5'-CgT 3'	
			601							538		
			5'-CTC 3'							5'-CCA 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.	95	120	185	195	155	160	175	260	230	100	85	185
PCR product		200	240	470		235		390			135	265
Length of int.	1070	1070	1070	1070	1070	1070	<b>800</b>	1070	1070	<b>800</b>	1070	1070
pos. control <sup>1</sup>												
5'-primer(s) <sup>2</sup>	485	176	115	446	486	406	176	28	412	453	176	1 <sup>st</sup> I
	5'-CAA 3'	5'-gCA 3'	5'-ggA 3'	5'-CgT 3'	5'-ACg 3'	5'-gCC 3'	5'-gCA 3'	5'-TCA 3'	5'-ATg 3'	5'-AAT 3'	5'-gCA 3'	5'-CgA 3'
		453	2 <sup>nd</sup> I	652		483		322	416			
		5'-AAT 3'	5'-CCA 3'	5'-CCA 3'		5'-gAg 3'		5'-gCC 3'	5'-CCg 3'			
3'-primer(s) <sup>3</sup>	538	256	312	601	601	601	311	118	601	512	218	97
	5'-CAg 3'	5'-CCA 3'	5'-AgT 3'	5'-CTT 3'	5'-CTT 3'	5'-CTT 3'	5'-ggT 3'	5'-gCT 3'	5'-CTT 3'	5'-CCA 3'	5'-gCC 3'	5'-gTC 3'
		337	475	956				419			270	175
		5'-CTA 3'	5'-ggT 3'	5'-CAg 3'				5'-CgA 3'			5'-TAg 3'	5'-CCg 3'
		527										
		5'-CCA 3'										
Well No.	13	14	15	16	17	18	19	20	21	22	23	24

101.613-12– including *Taq* polymerase, IFU-01  
101.613-12u – without *Taq* polymerase, IFU-02

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Lot No.: **24V**

Lot-specific information

<b>Well No.</b>	<b>25</b>	<b>26</b>	<b>27</b>	<b>28</b>	<b>29</b>	<b>30</b>	<b>31</b>
<b>Length of spec. PCR product</b>	<b>105</b>	<b>115</b>	<b>155</b>	<b>200</b>	<b>140</b>	<b>70</b>	<b>155</b>
					<b>185</b>	<b>175</b>	
					<b>260</b>		
<b>Length of int. pos. control<sup>1</sup></b>	<b>1070</b>	<b>1070</b>	<b>1070</b>	<b>800</b>	<b>1070</b>	<b>1070</b>	<b>1070</b>
<b>5'-primer(s)<sup>2</sup></b>	<b>176</b>	<b>158</b>	<b>176</b>	<b>2<sup>nd</sup> I</b>	<b>2<sup>nd</sup> I</b>	<b>176</b>	<b>486</b>
	5'-gCA 3'	5'-ggg 3'	5'-gCA 3'	5'-CCA 3'	5'-CCA 3'	5'-gCA 3'	5'-ACC 3'
		<b>485</b>			<b>629</b>	<b>3<sup>rd</sup> I</b>	
		5'-CAA 3'			5'-AAg 3'	5'-Cgg 3'	
<b>3'-primer(s)<sup>3</sup></b>	<b>241</b>	<b>302</b>	<b>289</b>	<b>488</b>	<b>430</b>	<b>311</b>	<b>601</b>
	5'-CgA 3'	5'-ggT 3'	5'-AgC 3'	5'-CCT 3'	5'-gCA 3'	5'-gTC 3'	5'-CTT 3'
	<b>341</b>	<b>559</b>	<b>289</b>		<b>475</b>	<b>621</b>	
	5'-CgA 3'	5'-CAg 3'	5'-AgC 3'		5'-ggT 3'	5'-Tgg 3'	
					<b>846</b>		
					5'-CAC 3'		
<b>Well No.</b>	<b>25</b>	<b>26</b>	<b>27</b>	<b>28</b>	<b>29</b>	<b>30</b>	<b>31</b>

<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.

101.613-12– including *Taq* polymerase, IFU-01  
101.613-12u – without *Taq* polymerase, IFU-02

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Lot No.: **24V**

Lot-specific information

<b>CELL LINE VALIDATION SHEET</b>																			
<b>HLA-C*05 SSP subtyping kit</b>																			
				Well <sup>2</sup>															
				1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
			Prod. No.:	201077801	201077802	201210703	201329104	201210705	201077806	201077807	201298408	201298432	201329110	201077811	201329112	201077813	201329114	201329115	201329116
	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	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	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

101.613-12– including *Taq* polymerase, IFU-01  
101.613-12u – without *Taq* polymerase, IFU-02

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Lot No.: **24V**

Lot-specific information

CELL LINE VALIDATION SHEET				Well <sup>2</sup>															
HLA-C*05 SSP subtyping kit																			
				Prod. No.:															
				201077817	201329118	201077819	201329120	201329121	201077822	201077823	201077824	201077825	201077826	201077827	201077828	201077829	201298430	201210731	
	IHWC cell line <sup>1</sup>	C*		17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	
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	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	

101.613-12– including *Taq* polymerase, IFU-01  
101.613-12u – without *Taq* polymerase, IFU-02

Visit [www.olerup-ssp.com](http://www.olerup-ssp.com) for  
“Instructions for Use” (IFU)

Lot No.: **24V**

**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 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 4 to 6, 8 to 12, 14 to 16, 18, 20 and 22 to 30 were available. The specificities of the primers in primer solutions 4 to 6, 8, 9 to 12, 14, 15, 18, 20, 22 to 24, 26, 27 and 29 were tested by separately adding additional 5'-primers respectively 3'-primers. In primer solutions 25, 28 and 30 it was only possible to test the 5'-primers, the 3'-primers were not possible to test. In primer solution 16 it was only possible to test the 3'-primer, the 5'-primer was not possible to test. In primer solutions 3, 4, 8 to 11, 14, 15, 20, 23 and 29 one or two 3'-primers were not possible to test. In primer solutions 4, 9, 12, 15, 18, 20, 21, 26 and 29 one or two 5'-primers were not possible to test. One additional 3'-primer in primer solution 3 was tested by separately adding one 5'-primer.

101.613-12– including *Taq* polymerase, IFU-01  
101.613-12u – without *Taq* polymerase, IFU-02

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