

**Lot No.: 7H3**

Lot-specific information

**Olerup SSP<sup>®</sup> HLA-C\*04**

<b>Product number:</b>	<b>101.612-12 – including <i>Taq</i> polymerase</b> <b>101.612-12u – without <i>Taq</i> polymerase</b>
<b>Lot number:</b>	<b>7H3</b>
<b>Expiry date:</b>	<b>2022-01-01</b>
<b>Number of tests:</b>	<b>12</b>
<b>Number of wells per test:</b>	<b>63+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. 7H3.**

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\*04 LOT (0F2)**

- The product documentation has been updated for new alleles of IMGT 3.36.0
- The kit resolution focuses on common and well documented (CWD) alleles<sup>1</sup>.

The format of the Worksheet has been changed.

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

The HLA-C\*04 primer set, specificity and interpretation tables have been updated for the HLA-C alleles described since the previous *Olerup SSP<sup>®</sup>* HLA-C\*04 lot was made (**Lot No. 0F2**).

<sup>1</sup>S. J. Mack<sup>1</sup>, P. Cano<sup>2</sup>, J. A. Hollenbach<sup>1</sup> 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.

<b>Well</b>	<b>5'-primer</b>	<b>3'-primer</b>	<b>rationale</b>
16	Added	-	5'-primer added for improved yield of the C*04:17 allele.
19	-	-	Exchanged positive control primer pairs for improved HLA-specific amplification.
54	-	Added	3'-primer added for improved resolution of the C*04:27 allele.
64	-	-	Exchanged negative control.

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Well **64** 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 products generated by the positive control primer pairs are 200 and 430 base pairs.

<b>Length of PCR product</b>	<b>105</b>	<b>200</b>	<b>105</b>	<b>80</b>	<b>75</b>	<b>80</b>	<b>85</b>
<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\*04 SSP subtyping

#### CONTENT

The primer set contains 5'- and 3'-primers for identifying the HLA-C\*04:01 to HLA-C\*04:375 alleles.

#### PLATE LAYOUT

Each test consists of 64 PCR reactions in a 64 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>32</b>
<b>33</b>	<b>34</b>	<b>35</b>	<b>36</b>	<b>37</b>	<b>38</b>	<b>39</b>	<b>40</b>
<b>41</b>	<b>42</b>	<b>43</b>	<b>44</b>	<b>45</b>	<b>46</b>	<b>47</b>	<b>48</b>
<b>49</b>	<b>50</b>	<b>51</b>	<b>52</b>	<b>53</b>	<b>54</b>	<b>55</b>	<b>56</b>
<b>57</b>	<b>58</b>	<b>59</b>	<b>60</b>	<b>61</b>	<b>62</b>	<b>63</b>	<b>NC</b>

The 64 well cut PCR plate is marked with 'HLA-C\*04' in silver/gray ink.

Well No. 1 is marked with the Lot No. '7H3'.

Wells 1 to 63 – HLA-C\*04 high resolution primers.

Well 64 – 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.

#### INTERPRETATION

Due to the sharing of sequence motifs between HLA-C alleles non-HLA-C\*04 alleles will be amplified by some primer mixes. For further details see Specificity Table.

#### UNIQUELY IDENTIFIED ALLELES

All the HLA-C\*04 alleles, i.e. **C\*04:01 to C\*04:375**, recognized by the HLA Nomenclature Committee in April 2019<sup>1,2</sup> will be amplified by the primers in the HLA-C\*04 kit.

The HLA-C\*04 kit enables separation of the confirmed HLA-C\*04 alleles as listed in the IMGT/HLA database 3.26.0. 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\*04 alleles is listed below.

The HLA-C\*04 kit also enables identification of many null and alternatively expressed alleles.

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The following HLA-C\*04 alleles can be distinguished by the different sizes of the HLA-specific PCR product:

<b>Alleles</b>	<b>Primer mix</b>	<b>Alleles</b>	<b>Primer mix</b>
C*04:05, 04:112	6	C*04:61, 04:96	34
C*04:20, 04:238	19	C*04:62, 04:76	35
C*04:23, 04:38, 04:39	21	C*04:65, 04:72	33
C*04:25, 04:41	23	C*04:67, 04:93N, 04:187	46
C*04:44, 04:47	20	C*04:79, 04:113	39
C*04:46, 04:50	27	C*04:81, 04:88N	43
C*04:54:01, 04:105N, 04:313:01:01-04:313:01:02	41	C*04:114, 04:146	47
C*04:56, 04:64:01-04:64:02	40	C*04:139, 04:226	22
C*04:59Q, 04:78	32	C*04:150, 04:155	52

<sup>1</sup>HLA-C alleles listed on the IMGT/HLA web page 2019-April-17, release 3.36.0, [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>.

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

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Allele	Status <sup>1</sup>	Allele	Status <sup>1</sup>	Allele	Status <sup>1</sup>	Allele	Status <sup>1</sup>
C*04:111	Unconfirmed	C*04:151	Unconfirmed	C*04:190	Unconfirmed	C*04:229	Unconfirmed
<b>C*04:112</b>	<b>Confirmed</b>	C*04:152	Unconfirmed	C*04:191N	Unconfirmed	C*04:230	Unconfirmed
<b>C*04:113</b>	<b>Confirmed</b>	<b>C*04:153</b>	<b>Confirmed</b>	C*04:192	Unconfirmed	C*04:231	Unconfirmed
<b>C*04:114</b>	<b>Confirmed</b>	C*04:154	Unconfirmed	C*04:193	Unconfirmed	C*04:232	Unconfirmed
C*04:115N	Unconfirmed	<b>C*04:155</b>	<b>Confirmed</b>	C*04:194	Unconfirmed	C*04:233N	Unconfirmed
C*04:116	Unconfirmed	C*04:156	Unconfirmed	<b>C*04:195</b>	<b>Confirmed</b>	C*04:234N	Unconfirmed
<b>C*04:117</b>	<b>Confirmed</b>	C*04:157	Unconfirmed	C*04:196	Unconfirmed	C*04:235	Unconfirmed
C*04:118	Unconfirmed	C*04:158	Unconfirmed	C*04:197	Unconfirmed	C*04:236N	Unconfirmed
C*04:119	Unconfirmed	C*04:159	Unconfirmed	C*04:198	Unconfirmed	C*04:237	Unconfirmed
<b>C*04:120</b>	<b>Confirmed</b>	C*04:160	Unconfirmed	C*04:199	Unconfirmed	<b>C*04:238</b>	<b>Confirmed</b>
<b>C*04:121</b>	<b>Confirmed</b>	C*04:161	Unconfirmed	C*04:200	Unconfirmed	C*04:239	Unconfirmed
C*04:122	Unconfirmed	C*04:162	Unconfirmed	<b>C*04:201</b>	<b>Confirmed</b>	C*04:240	Unconfirmed
C*04:123N	Unconfirmed	<b>C*04:163</b>	<b>Confirmed</b>	<b>C*04:202</b>	<b>Confirmed</b>	C*04:241	Unconfirmed
C*04:124	Unconfirmed	C*04:164	Unconfirmed	C*04:203N	Unconfirmed	C*04:242	Unconfirmed
<b>C*04:125</b>	<b>Confirmed</b>	C*04:165	Unconfirmed	C*04:204	Unconfirmed	C*04:243	Unconfirmed
C*04:126	Unconfirmed	<b>C*04:166</b>	<b>Confirmed</b>	C*04:205N	Unconfirmed	C*04:244	Unconfirmed
C*04:127	Unconfirmed	C*04:167	Unconfirmed	<b>C*04:206</b>	<b>Confirmed</b>	C*04:245	Unconfirmed
C*04:128	Unconfirmed	C*04:168	Unconfirmed	<b>C*04:207</b>	<b>Confirmed</b>	C*04:246	Unconfirmed
C*04:129	Unconfirmed	C*04:169	Unconfirmed	C*04:208	Unconfirmed	C*04:247	Unconfirmed
C*04:130	Unconfirmed	C*04:170N	Unconfirmed	<b>C*04:209</b>	<b>Confirmed</b>	C*04:248	Unconfirmed
<b>C*04:131</b>	<b>Confirmed</b>	C*04:171	Unconfirmed	C*04:210	Unconfirmed	C*04:249	Unconfirmed
<b>C*04:132</b>	<b>Confirmed</b>	C*04:172	Unconfirmed	C*04:211	Unconfirmed	<b>C*04:250</b>	<b>Confirmed</b>
C*04:133	Unconfirmed	C*04:173N	Unconfirmed	C*04:212	Unconfirmed	C*04:251	Unconfirmed
C*04:134	Unconfirmed	C*04:174	Unconfirmed	C*04:213	Unconfirmed	C*04:252	Unconfirmed
C*04:135	Unconfirmed	C*04:175	Unconfirmed	C*04:214	Unconfirmed	C*04:253N	Unconfirmed
C*04:136	Unconfirmed	C*04:176	Unconfirmed	C*04:215N	Unconfirmed	<b>C*04:254</b>	<b>Confirmed</b>
<b>C*04:137</b>	<b>Confirmed</b>	C*04:177	Unconfirmed	C*04:216	Unconfirmed	C*04:255N	Unconfirmed
C*04:138	Unconfirmed	C*04:178	Unconfirmed	C*04:217N	Unconfirmed	C*04:256	Unconfirmed
<b>C*04:139</b>	<b>Confirmed</b>	C*04:179	Unconfirmed	<b>C*04:218</b>	<b>Confirmed</b>	C*04:257	Unconfirmed
<b>C*04:140</b>	<b>Confirmed</b>	<b>C*04:180:01</b>	<b>Confirmed</b>	<b>C*04:219</b>	<b>Confirmed</b>		
<b>C*04:141</b>	<b>Confirmed</b>	<b>C*04:180:02</b>	<b>Confirmed</b>	C*04:220	Unconfirmed		
C*04:142	Unconfirmed	C*04:181	Unconfirmed	C*04:221	Unconfirmed		
C*04:143	Unconfirmed	<b>C*04:182</b>	<b>Confirmed</b>	C*04:222	Unconfirmed		
<b>C*04:144</b>	<b>Confirmed</b>	C*04:183	Unconfirmed	<b>C*04:223:01</b>	<b>Confirmed</b>		
<b>C*04:145</b>	<b>Confirmed</b>	C*04:184	Unconfirmed	C*04:223:02	Unconfirmed		
C*04:146	Unconfirmed	C*04:185	Unconfirmed	C*04:224	Unconfirmed		
C*04:147	Unconfirmed	C*04:186	Unconfirmed	C*04:225N	Unconfirmed		
C*04:148	Unconfirmed	<b>C*04:187</b>	<b>Confirmed</b>	C*04:226	Unconfirmed		
C*04:149	Unconfirmed	C*04:188	Unconfirmed	C*04:227	Unconfirmed		
<b>C*04:150</b>	<b>Confirmed</b>	C*04:189	Unconfirmed	C*04:228	Unconfirmed		

<sup>1</sup>Allele status “confirmed” or “unconfirmed” as listed on the IMGT/HLA web page 2016-October-14, release 3.26.0, [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\*04 homo- and heterozygotes is available upon request.

Lot No.: **7H3**

Lot-specific information  
**SPECIFICITY TABLE**

**HLA-C\*04 SSP subtyping**

Specificities and sizes of the PCR products of the 63+1 primer mixes used for HLA-C\*04 SSP subtyping

Primer Mix	Size of spec. PCR product <sup>1</sup>	Size of control band <sup>2</sup>	Amplified HLA-C*04 alleles <sup>3</sup>	Other amplified HLA Class I alleles
1	250 bp	800 bp	*04:01:01:01-04:01:01:29, 04:01:01:31-04:01:33, 04:01:34 <sup>w</sup> , 04:01:35-04:01:113, 04:03:01:01-04:03:05, 04:05, 04:07:01-04:12, 04:15:01-04:18, 04:19 <sup>w</sup> , 04:20, 04:23-04:33, 04:35-04:47, 04:48 <sup>w</sup> , 04:49-04:57, 04:59Q-04:67, 04:69-04:94:02, 04:95N <sup>w</sup> , 04:96-04:110, 04:112-04:121, 04:123N-04:159, 04:161-04:177, 04:179-04:187, 04:189-04:211, 04:213-04:256, 04:257 <sup>w</sup> , 04:258-04:264, 04:266-04:281, 04:283-04:290, 04:292-04:293, 04:295-04:356, 04:358-04:367, 04:369N-04:375	*01:02:01:01-01:07:01, 01:08-01:21, 01:23-01:34, 01:36-01:130, 01:132-01:159, 01:161-01:168, 01:169:02-01:177, 02:02:01-02:02:03, 02:02:06-02:02:34, 02:02:36-02:02:52, 02:04-02:15, 02:17, 02:19-02:40:02, 02:42-02:71, 02:73-02:134, 02:136, 02:138-02:169N, 05:01:01:01-05:01:45, 05:03-05:10, 05:12-05:16, 05:18:01-05:26, 05:28-05:50, 05:52-05:61, 05:63-05:67, 05:69, 05:71-05:78:02, 05:80-05:111, 05:113N-05:114, 05:116-05:133, 05:135-05:145, 05:147-05:150, 05:152-05:162, 05:164-05:183, 05:185-05:215, 06:02:01:01-06:02:01:17, 06:02:03-06:03:02, 06:05-06:39, 06:41-06:78, 06:80-06:117, 06:119-06:152N, 06:154-06:196, 06:198-06:263N, 08:02:01:01-08:02:26, 08:05, 08:07, 08:12, 08:15:01-08:15:02, 08:17-08:19:02, 08:23, 08:25, 08:27-08:35, 08:37, 08:43, 08:45, 08:47-08:49, 08:51-08:53, 08:55N, 08:62:01-08:63, 08:67-08:71, 08:73-08:77, 08:90, 08:92, 08:94, 08:100, 08:103, 08:107-08:108, 08:110-08:112, 08:114-08:116, 08:118, 08:120, 08:123, 08:125-08:126, 08:132, 08:134, 08:140, 08:146, 08:149-08:152, 08:156, 08:158-08:161N, 08:166-08:167, 08:169-08:172, 08:179-08:181N, 08:183-08:185, 12:02:01-12:13:01:02, 12:15-12:17, 12:21-12:82, 12:84N-12:136, 12:138-12:152, 12:154-12:168, 12:170-12:174, 12:176-12:180, 12:182-12:282, 14:02:01:01-14:02:31, 14:03:01-14:05, 14:07N-14:14, 14:16-14:52, 14:54-14:62, 14:64-14:76, 14:78-14:86, 14:88-14:89, 14:91-14:104, 14:106-14:109, 15:08:01-15:08:02, 15:74, 15:102, 15:143, 15:148, 16:04:01:01-16:04:01:02, 16:04:03-16:04:05, 16:29, 16:33, 16:42, 16:53, 16:55, 16:61, 16:66, 16:68, 16:78, 16:82, 16:88, 16:91, 16:109, 16:124, 16:149-16:150, 17:17, 18:01:01-18:12
2	220 bp	1070 bp	*04:01:01:01-04:01:01:29, 04:01:01:31-04:01:27, 04:01:29-04:01:113, 04:04:01:01-04:05,	*07:64, 07:402, 12:269



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**Lot-specific information**

			04:07:01-04:09N, 04:13:01:01-04:15:03, 04:17- 04:20, 04:23-04:35, 04:37- 04:41, 04:43-04:54:02, 04:56-04:70, 04:72-04:79, 04:81-04:102, 04:104- 04:106, 04:108-04:139, 04:141-04:146, 04:148- 04:152, 04:154-04:159, 04:161-04:168, 04:170N, 04:172-04:189, 04:191N, 04:193, 04:195, 04:197- 04:209, 04:211-04:212, 04:216-04:219, 04:221- 04:226, 04:228-04:248, 04:250-04:255N, 04:257- 04:277, 04:279N <sup>w</sup> , 04:280- 04:285, 04:287-04:293, 04:295-04:298, 04:300N- 04:303, 04:305N-04:310, 04:312-04:334, 04:336, 04:338-04:346, 04:348- 04:350N, 04:352-04:356, 04:358-04:362N, 04:364N- 04:375	
<b>3</b>	150 bp	1070 bp	*04:01:01:01-04:01:01:29, 04:01:01:31-04:01:113, 04:04:01:01-04:05, 04:08- 04:15:03, 04:17-04:20, 04:23-04:26, 04:28-04:41, 04:43-04:79, 04:81-04:86, 04:88N, 04:90-04:102, 04:104-04:106, 04:108- 04:139, 04:141-04:146, 04:148-04:152, 04:154- 04:156, 04:158, 04:161- 04:170N, 04:172-04:189, 04:191N-04:195, 04:197- 04:212, 04:214-04:215N, 04:217N-04:219, 04:221- 04:235, 04:237-04:255N, 04:257-04:285, 04:287- 04:293, 04:295-04:298, 04:300N-04:303, 04:305N- 04:310, 04:312-04:334, 04:336, 04:338-04:350N, 04:352-04:356, 04:358- 04:362N, 04:364N-04:375	*03:231
<b>4<sup>6</sup></b>	210 bp	1070 bp	*04:03:01:01-04:03:05, 04:06:01-04:06:02, 04:80, 04:107, 04:147, 04:160, 04:171, 04:190, 04:256, 04:286, 04:294, 04:335, 04:337, 04:357, 04:363	*02:12, 02:49, 02:55:01-02:55:02, 02:115, 07:756
<b>5<sup>6</sup></b>	250 bp	1070 bp	*04:04:01:01-04:04:02, 04:06:01-04:06:02, 04:13:01:01-04:13:01:02,	*01:22, 01:35, 01:131, 01:160, 02:03, 02:16:02, 02:18, 02:137, 05:11, 05:17, 05:27, 05:68, 05:79, 05:115, 05:134,

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Lot-specific information

			04:34, 04:58, 04:122, 04:160, 04:178, 04:212, 04:265, 04:291, 04:294, 04:357, 04:368	05:151, 05:184, 06:04:01-06:04:02, 06:118, 06:153, 06:197, 08:01:01:01-08:01:28, 08:03:01-08:04:03, 08:06, 08:08:01-08:11, 08:13-08:14, 08:16:01-08:16:02, 08:20- 08:22, 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- 08:188, 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, 15:02:01:01-15:07, 15:09-15:13:01:02, 15:15-15:19, 15:21-15:24, 15:26-15:50, 15:52-15:73, 15:76-15:83, 15:85-15:101, 15:103-15:142, 15:144-15:147, 15:149- 15:194, 16:35, 16:40, 16:48, 16:110, 17:01:01:02-17:16:02, 17:18-17:46
<b>6<sup>4</sup></b>	95 bp 215 bp	1070 bp	*04:05 *04:112, 04:169	*14:73, 15:36
<b>7<sup>5</sup></b>	145 bp	1070 bp	*04:07:01-04:07:02, 04:27, 04:32, 04:77, 04:89, 04:153, 04:265	*01:177, 02:02:38, 03:34, 03:142, 03:261, 03:272, 03:384, 03:386, 05:78:01-05:78:02, 07:64, 07:402, 08:163, 08:183, 12:269, 14:25, 15:36, 16:150, 18:03, <b>B*13:13:02,</b> <b>B*40:01:49-40:01:50</b>
<b>8</b>	270 bp	1070 bp	*04:08, 04:34, 04:147, 04:212	*01:35, 01:107, 01:131, 02:58, 05:27, 05:39, 05:151, 05:184, 06:96, 06:197, 08:41, 08:115, 08:138, 08:182, 12:83, 12:106, 12:122, 14:20, 15:15, 15:77, 16:149, 17:07, 18:08
<b>9<sup>4</sup></b>	110 bp 180 bp 220 bp	<b>800 bp</b>	*04:35 *04:30 *04:09N	
<b>10</b>	190 bp 220 bp	1070 bp	*04:31, 04:91 *04:10-04:11, 04:36, 04:55, 04:153, 04:169, 04:210, 04:214-04:215N, 04:347	*01:177, 03:231, 05:78:01-05:78:02, 08:163, 08:183, 15:36, 16:150
<b>11<sup>6</sup></b>	180 bp	1070 bp	*04:01:01:01-04:01:01:29, 04:01:01:31-04:01:09, 04:01:11-04:01:22, 04:01:24- 04:01:113, 04:03:01:01- 04:07:01, 04:08-04:10, 04:12-04:20, 04:23-04:26, 04:28-04:32, 04:34-04:51, 04:53-04:54:02, 04:56- 04:106, 04:108-04:115N, 04:117-04:129, 04:131- 04:166:01, 04:167-04:168, 04:170N-04:171, 04:173N- 04:230, 04:232-04:282, 04:284-04:375	*02:49, 02:75, 02:115, 05:25, 05:42, 06:05, 06:76:02, 07:01:74, 07:02:09, 07:583, 08:28, 08:137, 08:168, 12:28, 12:132, 12:135, 12:146, 15:25, 15:62, 15:169, 16:26, 16:46, 16:55, 16:64

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Lot-specific information

<b>12<sup>4</sup></b>	125 bp 165 bp	1070 bp	*04:11, 04:29, 04:36, 04:55, 04:172, 04:214 <sup>w</sup> *04:11, 04:33, 04:169, 04:172	*03:231, 03:248, 07:125, 07:356, 07:531, 12:194, 16:62, <b>B*07:267, B*56:62</b> *02:104, 03:248, 05:141, 12:194, 15:100, 16:62, <b>B*07:267, B*56:62</b>
<b>13<sup>4</sup></b>	120 bp 215 bp 270 bp	1070 bp	*04:255N *04:12, 04:132 *04:52, 04:55	*03:231
<b>14</b>	155 bp 185 bp	1070 bp	*04:16, 04:163, 04:223:01- 04:223:02 *04:18	*02:104, 03:248, 05:64:01-05:64:02, 08:19:01-08:19:02, 15:100, <b>A*24:52</b>
<b>15<sup>6</sup></b>	170 bp	1070 bp	*04:14, 04:68	*05:112, 16:45, <b>A*24:96, A*24:146</b>
<b>16<sup>4,7</sup></b>	85 bp 130 bp	1070 bp	*04:123N *04:15:01-04:15:03, 04:17, 04:37, 04:294, 04:367	*18:07N *02:02:38, 03:05, 03:13:01:01-03:13:02, 03:17:02, 03:25, 03:27, 03:35:01- 03:35:02:02, 03:135, 03:167, 03:198, 03:292, 03:296:01-03:296:02, 03:302, 03:335, 03:386, 03:407, 05:18:05, 05:215, 08:01:07, 08:02:07, 08:33:02, 12:02:19, 14:09, 14:45, <b>B*15:78:03, B*40:01:49- 40:01:50</b>
<b>17</b>	245 bp 320 bp	1070 bp	*04:234N *04:17, 04:80, 04:100	*01:50, 14:54, 14:92
<b>18<sup>4</sup></b>	125 bp 220 bp	1070 bp	*04:70 *04:19, 04:94:01-04:94:02	*06:101, 12:10:01-12:10:02, 18:03, <b>B*15:27:01-15:27:03, B*15:109, B*15:327, B*15:344, B*15:398</b>
<b>19<sup>4,6</sup></b>	120 bp 150 bp 430 bp	<b>800 bp</b>	*04:35, 04:37 *04:20, 04:40, 04:242 *04:238	*03:302, 14:45 *03:135
<b>20</b>	165 bp 250 bp 545 bp	1070 bp	*04:44 *04:47, 04:170N, 04:209 *04:15:02, 04:17, 04:100, 04:178, 04:224, 04:230, 04:242, 04:360, 04:370	*03:231, 05:78:01-05:78:02, 08:163, 08:183, 12:269, 15:36, 16:150, <b>A*01:118, A*02:109, A*02:709, A*33:52</b>
<b>21<sup>4</sup></b>	85 bp 145 bp 240 bp	<b>800 bp</b>	*04:23, 04:108, 04:218, 04:335 *04:38 *04:39, 04:121	
<b>22<sup>4</sup></b>	120 bp 170 bp 360 bp	1070 bp	*04:24, 04:139, 04:140, 04:166:01-04:166:02, 04:220 *04:26 *04:226	*07:125, 07:356, 07:531 *02:104, 15:100
<b>23<sup>4</sup></b>	85 bp 215 bp 235 bp	1070 bp	*04:25 *04:41 *04:144	*03:171, 03:211:01, 05:93, 06:73, 08:20, 08:40, 12:109
<b>24<sup>5</sup></b>	130 bp 170 bp	1070 bp	*04:24 *04:30, 04:42:01-04:42:02, 04:220	*07:125, 07:356, 07:531
<b>25</b>	160 bp 200 bp	1070 bp	*04:163 *04:43, 04:94:01-04:94:02, 04:171	<b>A*24:52</b> *06:101, 12:10:01-12:10:02, 18:03, <b>B*15:27:01-15:27:03, B*15:109, B*15:327, B*15:344, B*15:398</b>
<b>26<sup>6</sup></b>	210 bp 245 bp	<b>800 bp</b>	*04:45, 04:86 *04:250	

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Lot-specific information

<b>27<sup>4,9</sup></b>	125 bp 255 bp 280 bp	<b>800 bp</b>	*04:50 *04:204 *04:46, 04:120	*05:64:01-05:64:02, 08:19:01-08:19:02, 08:101, 08:143
<b>28<sup>4,8</sup></b>	120 bp 160 bp 215 bp 255 bp	1070 bp	*04:75 *04:223:01-04:223:02 *04:48 *04:204	*06:249 *05:64:01-05:64:02, 08:19:01-08:19:02
<b>29<sup>4</sup></b>	105 bp  195 bp 245 bp	1070 bp	*04:82, 04:159, 04:321- 04:322 *04:49, 04:132 *04:170N, 04:249	
<b>30<sup>4</sup></b>	75 bp 125 bp	1070 bp	*04:53 *04:234N	*05:49, <b>B*07:90</b> *06:152N
<b>31<sup>5</sup></b>	130 bp 170 bp 360 bp	1070 bp	*04:95N, 04:139 *04:51, 04:145 *04:226	*02:104, 15:100
<b>32<sup>4</sup></b>	105 bp 235 bp 275 bp	1070 bp	*04:78, 04:141 *04:59Q, 04:121 *04:77	<b>B*40:100</b>
<b>33<sup>4</sup></b>	90 bp 180 bp	1070 bp	*04:72, 04:218 *04:58, 04:65, 04:160, 04:203N, 04:368	*07:08, 07:108:01-07:108:02, <b>B*40:100</b>
<b>34<sup>4</sup></b>	75 bp 200 bp  270 bp	1070 bp	*04:96 *04:13:01:01-04:13:01:02, 04:58, 04:61, 04:68, 04:160, 04:253N, 04:291 *04:120, 04:201:01	*07:08, 07:108:01-07:108:02, 08:101, 08:143, 16:117, <b>B*47:09</b>  *05:64:01-05:64:02, 08:19:01-08:19:02, 08:101, 08:143
<b>35<sup>4</sup></b>	85 bp 120 bp 145 bp 175 bp	1070 bp	*04:62 *04:255N *04:115N *04:76, 04:137	
<b>36<sup>4,5</sup></b>	115 bp 150 bp	<b>800 bp</b>	*04:57, 04:63 *04:117	
<b>37<sup>4</sup></b>	110 bp 135 bp	1070 bp	*04:63, 04:73 *04:74, 04:125	
<b>38<sup>4,5</sup></b>	95 bp 140 bp	<b>800 bp</b>	*04:83, 04:123N *04:74, 04:117	*03:232, 18:07N
<b>39<sup>4</sup></b>	110 bp 140 bp 330 bp	1070 bp	*04:113 *04:71, 04:95N *04:79	*14:71 *01:02:34, 01:21, 05:200
<b>40</b>	140 bp 205 bp 265 bp	<b>800 bp</b>	*04:56 *04:86 *04:64:01-04:64:02, 04:201:01	
<b>41<sup>5</sup></b>	135 bp 165 bp 280 bp	1070 bp	*04:105N *04:131 *04:54:01-04:54:02, 04:313:01:01-04:313:01:02, 04:360, 04:367	*01:54, 01:97, 01:102, 01:152, 14:02:01:01- 14:24:01, 14:25, 14:27-14:53, 14:56-14:78, 14:80-14:91, 14:93N-14:109
<b>42<sup>4</sup></b>	95 bp	1070 bp	*04:69, 04:82, 04:159, 04:321-04:322	*02:79, 16:12
<b>43<sup>6</sup></b>	170 bp 255 bp	1070 bp	*04:81, 04:137 *04:88N, 04:209	

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Lot-specific information

<b>44<sup>4</sup></b>	90 bp 115 bp 140 bp	1070 bp	*04:108, 04:202  *04:254 *04:40, 04:60, 04:125, 04:242	*03:81, 03:175, 03:199, 03:245, 03:317, 03:388, 05:215, 14:24:01, <b>B*15:78:03,</b> <b>B*40:01:49-40:01:50</b>
<b>45</b>	130 bp 165 bp	1070 bp	*04:66, 04:233N *04:16, 04:26, 04:103, 04:145	*02:104, 03:248, 05:141, 12:194, 15:100, 16:62
<b>46<sup>4</sup></b>	125 bp 160 bp 190 bp 300 bp	1070 bp	*04:93N, 04:254 *04:131, 04:205N *04:187 *04:67	*06:128N *06:135, 07:719
<b>47<sup>4,6</sup></b>	55 bp  295 bp	<b>800 bp</b>	*04:114  *04:146, 04:161	*01:59, 01:118, 02:65, 03:130, 03:140, 03:243, 05:20, 06:82, 06:210, 07:49, 07:210, 07:238, 07:247, 07:403, 12:54, 12:188, 14:04, 14:64, 14:77, 15:85, 15:181, 16:57, <b>A*03:267, A*68:46, B*07:253</b> *03:205 <sup>w</sup> , 07:708, 12:254, 12:280, 15:97
<b>48<sup>6</sup></b>	390 bp 415 bp	1070 bp	*04:195 *04:84	*01:159, 03:206, 03:212, 08:128
<b>49</b>	190 bp	1070 bp	*04:91, 04:173N, 04:225N	
<b>50</b>	295 bp 335 bp	1070 bp	*04:161 *04:162	*03:205 <sup>w</sup>
<b>51</b>	260 bp 390 bp	1070 bp	*04:165 *04:195	
<b>52<sup>4</sup></b>	110 bp 185 bp 240 bp	1070 bp	*04:150 *04:203N *04:155	
<b>53</b>	335 bp	<b>800 bp</b>	*04:106	*03:236, 08:78
<b>54</b>	140 bp 235 bp 270 bp	1070 bp	*04:115N, 04:219 *04:249 *04:27	
<b>55</b>	190 bp  245 bp	1070 bp	*04:191N, 04:215N, 04:225N, 04:300N *04:250	
<b>56</b>	425 bp 470 bp	1070 bp	*04:28 *04:144	*03:171, 03:211:01, 05:93, 06:73, 08:20, 08:40, 12:109
<b>57</b>	150 bp 245 bp	1070 bp	*04:205N *04:182, 04:233N	*06:128N *06:78, 07:309
<b>58</b>	170 bp 275 bp	1070 bp	*04:217N *04:196	<b>A*11:289</b>
<b>59<sup>4</sup></b>	95 bp	<b>800 bp</b>	*04:202, 04:207	*14:24:01
<b>60</b>	130 bp	1070 bp	*04:01:01:01-04:01:01:29, 04:01:01:31-04:01:04, 04:01:06, 04:01:08, 04:01:10-04:01:23, 04:01:25- 04:01:32, 04:01:34-04:01:61, 04:01:63-04:01:74, 04:01:76- 04:01:83, 04:01:85- 04:01:113, 04:03:01:01- 04:04:01:02, 04:05-04:14, 04:16, 04:18-04:20,	*12:233, 14:28:02, 18:01:01-18:12

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Lot-specific information

			04:23-04:36, 04:38-04:39, 04:41-04:54:01, 04:55- 04:59Q, 04:61-04:79, 04:81- 04:94:01, 04:95N-04:99, 04:101-04:109, 04:111- 04:159, 04:161-04:177, 04:179, 04:181-04:221, 04:223:02, 04:225N-04:229, 04:231-04:239, 04:241, 04:243-04:259, 04:261- 04:262, 04:264-04:275, 04:277-04:293, 04:295- 04:341, 04:343-04:359, 04:361-04:366, 04:368- 04:369N, 04:371N-04:373, 04:375	
<b>61</b>	160 bp 285 bp	1070 bp	*04:236N *04:206	*07:246:02, <b>A*11:92</b>
<b>62<sup>4</sup></b>	105 bp 205 bp	1070 bp	*04:141 *04:253N	
<b>63</b>	175 bp	1070 bp	*04:180:01-04:180:02	*01:32:01, 01:32:02 <sup>w</sup> , 02:56, 06:20, 08:123, 08:139, 14:82, 14:92 <sup>w</sup> , 15:126, 16:98, 16:102, 16:110, <b>B*58:02:01<sup>w</sup></b>
<b>64<sup>10</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 HLA-C\*04 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.

<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 7, 24, 31, 36, 38 and 41 have a tendency to giving rise to primer oligomer formation.

<sup>6</sup>Primer mixes 4, 5, 11, 15, 19, 26, 43, 47 and 48 may have tendencies of unspecific amplification.

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**Lot-specific information**

<sup>7</sup>Primer mix 16 may give rise to a lower yield of HLA-specific PCR product than the other C\*04 primer mixes.

<sup>8</sup>Primer mix 28 may give rise to a long unspecific amplification product of approximately 500 bp. This should be disregarded when interpreting the C\*04 typings.

<sup>9</sup>In primer mix 27 the positive control band may be weaker than for other HLA-C\*04 primer mixes.

<sup>10</sup>Primer mix 64 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 products generated by the HGH positive control primer pairs are 200 and 430 base pairs.

Abbreviations

‘w’, may be weakly amplified.

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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	220	150	210	250	95	145	270	110	190	180	125
						215			180	220		165
									220			
Length of int. pos. control <sup>1</sup>	800	1070	1070	1070	1070	1070	1070	1070	800	1070	1070	1070
5'-primer(s) <sup>2</sup>	2 <sup>nd</sup> I	108	108	118	2 <sup>nd</sup> I	98	112	2 <sup>nd</sup> I	391	112	201	218
	5'-CCA 3'	5'-gTT 3'	5'-gTT 3'	5'-CCA 3'	5'-CCA 3'	5'-CTC 3'	5'-CCT 3'	5'-CCA 3'	5'-ACC 3'	5'-CCT 3'	5'-CCA 3'	5'-ggA 3'
		108	108				459		1018	368	201	
		5'-gTC 3'	5'-gTC 3'				5'-gAT 3'		5'-gTg 3'	5'-gTT 3'	5'-CCA 3'	
		112	112									
		5'-CCT 3'	5'-CCT 3'									
		112	112									
		5'-CTT 3'	5'-CTT 3'									
3'-primer(s) <sup>3</sup>	539	289	218	289	539	154	218	559	459	262	341	302
	5'-TCC 3'	5'-AgC 3'	5'-gCT 3'	5'-AgC 3'	5'-TCA 3'	5'-CAg 3'	5'-gCg 3'	5'-CAg 3'	5'-AgA 3'	5'-Tgg 3'	5'-CgT 3'	5'-ggC 3'
		289	218	289		270	559		1052	289		341
		5'-AgC 3'	5'-gTT 3'	5'-AgC 3'		5'-TAG 3'	5'-CTC 3'		5'-Tgg 3'	5'-AgT 3'		5'-Cgg 3'
				291					1092	289		
				5'-TCg 3'					5'-TTA 3'	5'-AgT 3'		
										521		
										5'-ggA 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	120	155	170	85	245	125	120	165	90	120	85	130
Length of int. pos. control <sup>1</sup>	1070	1070	1070	1070	1070	1070	800	1070	800	1070	1070	1070
5'-primer(s) <sup>2</sup>	112	105	412	368	379	228	322	112	368	28	172	97
	5'-CCT 3'	5'-gCT 3'	5'-ATA 3'	5'-gTg 3'	5'-ACg 3'	5'-ATg 3'	5'-gCC 3'	5'-CCT 3'	5'-gTT 3'	5'-TCC 3'	5'-TCC 3'	5'-TCg 3'
		368		369	454	368	347			89	652	127
		5'-gTT 3'		5'-TAC 3'	5'-ACT 3'	5'-gTT 3'	5'-gTA 3'			5'-gAT 3'	5'-CCA 3'	5'-ggA 3'
				369			355			127	670	1018
				5'-TAT 3'			5'-CCT 3'			5'-ggA 3'	5'-CCg 3'	5'-gTg 3'
				415			368			133		
				5'-ACT 3'			5'-gTg 3'			5'-CCT 3'		
							391			142		
							5'-ACC 3'			5'-TCT 3'		
3'-primer(s) <sup>3</sup>	193	218	539	459	3 <sup>rd</sup> I	312	459	238	412	218	218	218
	5'-CgC 3'	5'-gCT 3'	5'-TCT 3'	5'-AgA 3'	5'-ACg 3'	5'-AgT 3'	5'-AgA 3'	5'-CCA 3'	5'-gTC 3'	5'-gCT 3'	5'-gCT 3'	5'-gCT 3'
		278	485			538		319	420		846	1052
		5'-ggA 3'	5'-CCA 3'			5'-CCA 3'		5'-gCT 3'	5'-gCC 3'		5'-CAC 3'	5'-Tgg 3'
		295	485			550		319	472			
		5'-TCC 3'	5'-CCT 3'			5'-CAT 3'		5'-gCA 3'	5'-ggC 3'			
		343	514					327	568			
		5'-T 3'	5'-CTT 3'					5'-TTT 3'	5'-CTg 3'			
								368	569			
								5'-CAT 3'	5'-ACA 3'			
Well No.	13	14	15	16	17	18	19	20	21	22	23	24



Lot No.: 7H3

Lot-specific information

Well No.	25	26	27	28	29	30	31	32	33	34	35	36
Length of spec.	160	210	125	120	105	75	130	105	90	75	85	115
PCR product	200	245	255	160	195	125	170	235	180	200	120	150
			280	215	245		360	275		270	145	
				255							175	
Length of int. pos. control <sup>1</sup>	1070	800	800	1070	1070	1070	1070	1070	1070	1070	1070	800
5'-primer(s) <sup>2</sup>	368 5'-gTT 3'	112 5'-CCT 3'	368 5'-gTT 3'	232 5'-Agg 3'	112 5'-CCT 3'	454 5'-ACT 3'	28 5'-TCC 3'	368 5'-gTT 3'	368 5'-gTT 3'	368 5'-gTT 3'	112 5'-CCT 3'	350 5'-TCT 3'
				368 5'-gTT 3'	900 5'-CCg 3'	503 5'-CCg 3'	81 5'-CAg 3'					383 5'-ggC 3'
							89 5'-gAC 3'					386 5'-gCA 3'
							133 5'-CCT 3'					
							459 5'-gAT 3'					
3'-primer(s) <sup>3</sup>	485 5'-CCA 3'	277 5'-gCT 3'	454 5'-CTg 3'	312 5'-AgT 3'	256 5'-CCA 3'	539 5'-TCC 3'	218 5'-gCT 3'	430 5'-gCA 3'	407 5'-ACg 3'	403 5'-gCA 3'	154 5'-CAT 3'	459 5'-AgA 3'
	518 5'-CCA 3'	284 5'-gTA 3'	581 5'-ATg 3'	485 5'-CCT 3'	278 5'-ggA 3'		549 5'-AgT 3'	430 5'-gCT 3'	420 5'-gCC 3'	527 5'-CCg 3'	193 5'-CgC 3'	
	538 5'-CCA 3'	314 5'-gCT 3'	601 5'-CTT 3'	544 5'-ggg 3'	308 5'-TCT 3'			563 5'-CgT 3'	505 5'-gCT 3'	532 5'-CTA 3'	217 5'-CTA 3'	
			613 5'-gCA 3'	581 5'-ATg 3'	327 5'-TTT 3'			569 5'-ACA 3'	512 5'-CCA 3'	589 5'-CTT 3'	242 5'-CCC 3'	
					963 5'-gCT 3'			603 5'-TTg 3'	513 5'-TCT 3'	601 5'-CTT 3'	247 5'-ATT 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	45	46	47	48
Length of spec.	110	95	110	140	135	95	170	90	130	125	55	390
PCR product	135	140	140	205	165		255	115	165	190	295	415
			330	265	280			140		160		
										300		
Length of int. pos. control <sup>1</sup>	1070	800	1070	800	1070	1070	1070	1070	1070	1070	800	1070
5'-primer(s) <sup>2</sup>	364 5'-ggT 3'	350 5'-TCT 3'	98 5'-CTT 3'	112 5'-CCT 3'	215 5'-gCA 3'	256 5'-ACg 3'	112 5'-CCT 3'	355 5'-CCT 3'	89 5'-gAC 3'	83 5'-CTA 3'	302 5'-gAA 3'	704 5'-TgT 3'
	371 5'-TgA 3'	364 5'-ggT 3'	459 5'-gAT 3'	368 5'-gTT 3'	249 5'-TAg 3'	900 5'-CCg 3'		364 5'-ggg 3'	89 5'-gAT 3'	190 5'-ACT 3'	3 <sup>rd</sup> I 5'-Cgg 3'	731 5'-ggg 3'
	386 5'-gCA 3'	395 5'-gCT 3'	3 <sup>rd</sup> I 5'-Cgg 3'		419 5'-gTC 3'			371 5'-TgA 3'	98 5'-CTA 3'	215 5'-gCA 3'		
	392 5'-CgC 3'	415 5'-ACT 3'						386 5'-gCT 3'	124 5'-gCT 3'	232 5'-AgT 3'		
								406 5'-gCC 3'	127 5'-ggT 3'	375 5'-TgA 3'		
								409 5'-ggC 3'		386 5'-gCT 3'		
3'-primer(s) <sup>3</sup>	459 5'-AgA 3'	459 5'-AgA 3'	201 5'-CTT 3'	212 5'-gCC 3'	341 5'-CgT 3'	302 5'-ggT 3'	239 5'-gCT 3'	459 5'-AgA 3'	218 5'-gCT 3'	341 5'-CgT 3'	312 5'-Agg 3'	956 5'-CAg 3'
			527 5'-CCA 3'	277 5'-gCT 3'	3 <sup>rd</sup> I 5'-ACg 3'	963 5'-gCT 3'	242 5'-CCC 3'			459 5'-AgA 3'	845 5'-ACA 3'	
			549 5'-AgT 3'	589 5'-CTT 3'			319 5'-gCA 3'				845 5'-ACT 3'	
			878 5'-ggA 3'	595 5'-CCg 3'			331 5'-CTA 3'					
				595 5'-CCT 3'								
Well No.	37	38	39	40	41	42	43	44	45	46	47	48

**Lot No.: 7H3**

**Lot-specific information**

Well No.	49	50	51	52	53	54	55	56	57	58	59	60
Length of spec. PCR product	190	295	260	110	335	140	190	425	150	170	95	130
		335	390	185		235	245	470	245	275		
				240		270						
Length of int. pos. control <sup>1</sup>	1070	1070	1070	1070	800	1070	1070	1070	1070	1070	800	1070
5'-primer(s) <sup>2</sup>	112	3 <sup>rd</sup> I	731	368	787	112	112	652	127	109	400	368
	5'-CCT 3'	5'-Cgg 3'	5'-ggg 3'	5'-gTT 3'	5'-ATA 3'	5'-CCT 3'	5'-CCT 3'	5'-CCA 3'	5'-ggT 3'	5'-TgA 3'	5'-TCA 3'	5'-gTT 3'
			862					697	149	210	406	
			5'-ACA 3'					5'-TCC 3'	5'-ggA 3'	5'-Ag 3'	5'-gCC 3'	
								232				
								5'-AgT 3'				
3'-primer(s) <sup>3</sup>	262	845	956	435	956	212	251	956	341	341	459	459
	5'-Tgg 3'	5'-ACT 3'	5'-CAg 3'	5'-TCA 3'	5'-CAg 3'	5'-gCA 3'	5'-CCT 3'	5'-CAg 3'	5'-CgT 3'	5'-CgT 3'	5'-AgA 3'	5'-AgA 3'
	265	883		513		217	265					
	5'-CTA 3'	5'-ggC 3'		5'-TCT 3'		5'-CTA 3'	5'-CTA 3'					
	268			565		308	273					
	5'-CTA 3'			5'-CAT 3'		5'-TCT 3'	5'-TTC 3'					
						343	314					
						5'-g 3'	5'-gCT 3'					
Well No.	49	50	51	52	53	54	55	56	57	58	59	60

Well No.	61	62	63
Length of spec. PCR product	160	105	175
	285	205	
Length of int. pos. control <sup>1</sup>	1070	1070	1070
5'-primer(s) <sup>2</sup>	96	368	2 <sup>nd</sup> I
	5'-TTg 3'	5'-gTT 3'	5'-CCA 3'
	220		
	5'-gC 3'		
3'-primer(s) <sup>3</sup>	341	430	463
	5'-CgT 3'	5'-gCT 3'	5'-gCT 3'
		532	
		5'-CTA 3'	
Well No.	61	62	63

<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.: **7H3**

Lot-specific information

<b>CELL LINE VALIDATION SHEET</b>																				
<b>HLA-C*04 SSP subtyping kit<sup>2</sup></b>																				
				Well																
				1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	
				Prod. No.:	201778201	201778202	201778203	201778204	201778205	201778206	201778207	201778208	201778209	201778210	201778211	201778212	201778213	201778214	201778215	201905416
IHC 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	*17:03		-	-	-	-	+	-	-	-	-	-	-	-	-	-	-	-	-
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.: **7H3**

Lot-specific information

CELL LINE VALIDATION SHEET																				
HLA-C*04 SSP subtyping kit <sup>2</sup>																				
				Well																
				17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	
				Prod. No.:	201778217	201778218	201905419	201905420	201778221	201778222	201778223	201778224	201778225	201778226	201778227	201778228	201778229	201778230	201778231	201905432
	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		*07:18		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
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.: **7H3**

Lot-specific information

<b>CELL LINE VALIDATION SHEET</b>																				
<b>HLA-C*04 SSP subtyping kit<sup>2</sup></b>																				
				Well																
				33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48	
				Prod. No.:	201778233	201778234	201905435	201905436	201778237	201778238	201778239	201778240	201778241	201778242	201778243	201778244	201778245	201905446	201778247	201778248
IHWK 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	*17:03		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
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.: **7H3**

Lot-specific information

<b>CELL LINE VALIDATION SHEET</b>																			
<b>HLA-C*04 SSP subtyping kit<sup>2</sup></b>																			
				<b>Well</b>															
				<b>49</b>	<b>50</b>	<b>51</b>	<b>52</b>	<b>53</b>	<b>54</b>	<b>55</b>	<b>56</b>	<b>57</b>	<b>58</b>	<b>59</b>	<b>60</b>	<b>61</b>	<b>62</b>	<b>63</b>	
				<b>Prod. No.:</b>	201778249	201778250	201778251	201778252	201905453	201905454	201778255	201778256	201778257	201778258	201778259	201778260	201778261	201905462	201778263
<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	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	-	-	-	-	-	-	-	-	-	-	-	-	+	-	-	-

**Lot No.: 7H3****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 6, 8, 10, 12 to 15, 17, 19 to 24, 26 to 40, 42 to 59 and 61 to 63 were available.

The specificity of the primers in primer solutions 6, 8, 10, 12 to 15, 17, 19 to 22, 24, 27, 28, 31 to 34, 39, 42, 44, 45, 47, 53 and 63 were tested by separately adding one or more additional 5'-primers, respectively one or more additional 3'-primers.

In primer solutions 26, 29, 35, 40, 43, 49, 50, 52, 54, 55 and 62 it was only possible to test the 5'-primers, the 3'-primers were not possible to test.

In primer solutions 23, 30, 36 to 38, 46, 48, 51, 56 to 59 and 61 it was only possible to test the 3'-primers, the 5'-primers were not possible to test.

In primer solutions 2, 3, 9, 11, 16 to 19, 22, 24, 28, 31, 41, 44 and 45 one or more of the 5'-primers were not possible to test, and in primer solutions 3, 4, 6, 9, 10, 13, 14, 18, 20, 21, 24, 25, 27, 28, 31 to 34, 39, 42 and 47 one to four of the 3'-primers were not possible to test.

Additional primers in primer solutions 7, 9, 16, 18, 25 and 41 were tested by separately adding one 5'-primer and/or one 3'-primer.

Lot No.: **7H3**

Lot-specific information

**ADDRESSES:**

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