

101.548-06 – including *Taq* pol., IFU-01

101.548-06u – without *Taq* pol., IFU-02

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“Instructions for Use” (IFU)

Lot No.: **7F3**

Lot-specific information

## **Olerup SSP® HLA-B\*50**

|                                  |                                                                                             |
|----------------------------------|---------------------------------------------------------------------------------------------|
| Product number:                  | 101.548-06 – including <i>Taq</i> polymerase<br>101.548-06u – without <i>Taq</i> polymerase |
| Lot number:                      | 7F3                                                                                         |
| Expiry date:                     | 2021-10-01                                                                                  |
| Number of tests:                 | 6                                                                                           |
| Number of wells per test:        | 23+1                                                                                        |
| Storage - pre-aliquoted primers: | dark at -20°C                                                                               |
| - PCR Master Mix:                | -20°C                                                                                       |
| - Adhesive PCR seals             | RT                                                                                          |
| - Product Insert                 | RT                                                                                          |

**This Product Description is only valid for Lot No. 7F3.**

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-B\*50 LOT (5D5).**

The HLA-B\*50 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

The format of the Worksheet has been changed.

Two wells have been added to HLA-B\*50, wells **23 and 24**.

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

The HLA-B\*50 primer set, specificity and interpretation tables have been updated for the HLA-B alleles described since the previous *Olerup SSP®* HLA-B\*50 lot was made (**Lot No. 5D5**). The kit design is based on IMGT/HLA database 3.29.0.

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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                                                                    |
|------|-----------|-----------|------------------------------------------------------------------------------|
| 6    | -         | Added     | 3'-primer added for the B*50:47 allele.                                      |
| 8    | -         | Modified  | 3'-primer modified for increased yield.                                      |
| 9    | -         | Added     | 3'-primer added for the B*50:46 allele.                                      |
| 22   | Added     | Added     | Negative control moved to well 24, primer pair added for the B*50:45 allele. |
| 23   | New       | New       | New primer pair added for the B*50:51 allele.                                |
| 24   | -         | -         | Negative control added from well 22.                                         |

Changes in revision R01 compared to R00:

1. The expiration date has been altered due to extension of shelf-life.

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Well **24** contains Negative Control primer pairs, that will amplify more than 95% 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 430 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>C*</b>                    | +                    | +                       | +                    |                      |                      |                      |                      |
| <b>DRB1</b>                  |                      |                         |                      | +                    | +                    |                      |                      |
| <b>DRB3</b>                  |                      |                         |                      | +                    | +                    |                      |                      |
| <b>DRB5</b>                  |                      |                         |                      | +                    |                      |                      |                      |
| <b>DQB1</b>                  |                      |                         |                      |                      | +                    |                      |                      |
| <b>DPB1</b>                  |                      |                         |                      |                      |                      | +                    |                      |
| <b>DQA1</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-B\*50 SSP typing

#### CONTENT

The primer set contains 5'- and 3'-primers for identifying the B\*50:01 to B\*50:53 alleles.

#### PLATE LAYOUT

Each HLA-B\*50 test consists of 24 PCR reactions in a 24 well cut 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>NC</b> |

The 24 well PCR plate is marked with 'HLA-B\*50' in silver/gray ink.

Well No. 1 is marked with the Lot No. '7F3'.

Wells 1 to 23 – HLA-B\*50 high resolution primers.

Well 24 – 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 24 well PCR plate, make sure that the remaining plates stay sealed. Use a scalpel or a similar instrument to carefully cut the foil between the plates.

#### INTERPRETATION

Due to the sharing of sequence motifs between HLA-B alleles non-HLA-B\*50 alleles will be amplified by some primer mixes. For further details see Specificity Table.

#### UNIQUELY IDENTIFIED ALLELES

All the HLA-B\*50, i.e. **B\*50:01 to B\*50:53**, recognized by the HLA Nomenclature Committee in August 2017<sup>1,2</sup> will be amplified by the primers in the HLA-B\*50 SSP kit.

The HLA-B\*50 kit enables separation of the confirmed HLA-B\*50 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-B\*50 alleles is listed below.

The HLA-B\*50 kit also enables identification of polymorphisms in exons outside of the region encoding the peptide binding domain and of null and alternatively expressed alleles.

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<sup>1</sup>HLA-B alleles listed on the IMGT/HLA web page 2017-August-10, release 3.29.0, [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>.

### ALLELE CONFIRMATION STATUS

| Allele               | Status <sup>1</sup> | Allele         | Status <sup>1</sup> | Allele         | Status <sup>1</sup> |
|----------------------|---------------------|----------------|---------------------|----------------|---------------------|
| <b>B*50:01:01:01</b> | <b>Confirmed</b>    | B*50:14        | Unconfirmed         | B*50:44        | Unconfirmed         |
| <b>B*50:01:01:02</b> | <b>Confirmed</b>    | B*50:15        | Unconfirmed         | <b>B*50:45</b> | <b>Confirmed</b>    |
| B*50:01:02           | Unconfirmed         | B*50:16        | Unconfirmed         | <b>B*50:46</b> | <b>Confirmed</b>    |
| B*50:01:03           | Unconfirmed         | <b>B*50:17</b> | <b>Confirmed</b>    | B*50:47        | Unconfirmed         |
| B*50:01:04           | Unconfirmed         | B*50:18        | Unconfirmed         | B*50:48        | Unconfirmed         |
| <b>B*50:01:05</b>    | <b>Confirmed</b>    | B*50:19        | Unconfirmed         | B*50:49        | Unconfirmed         |
| B*50:01:06           | Unconfirmed         | B*50:20        | Unconfirmed         | B*50:50        | Unconfirmed         |
| B*50:01:07           | Unconfirmed         | <b>B*50:31</b> | <b>Confirmed</b>    | <b>B*50:51</b> | <b>Confirmed</b>    |
| B*50:01:08           | Unconfirmed         | B*50:32        | Unconfirmed         | B*50:52        | Unconfirmed         |
| <b>B*50:02</b>       | <b>Confirmed</b>    | B*50:33        | Unconfirmed         | B*50:53        | Unconfirmed         |
| B*50:04              | Unconfirmed         | B*50:34        | Unconfirmed         |                |                     |
| B*50:05              | Unconfirmed         | B*50:35        | Unconfirmed         |                |                     |
| B*50:06              | Unconfirmed         | B*50:36        | Unconfirmed         |                |                     |
| <b>B*50:07</b>       | <b>Confirmed</b>    | B*50:37        | Unconfirmed         |                |                     |
| <b>B*50:08</b>       | <b>Confirmed</b>    | B*50:38        | Unconfirmed         |                |                     |
| <b>B*50:09</b>       | <b>Confirmed</b>    | B*50:39        | Unconfirmed         |                |                     |
| <b>B*50:10</b>       | <b>Confirmed</b>    | <b>B*50:40</b> | <b>Confirmed</b>    |                |                     |
| <b>B*50:11</b>       | <b>Confirmed</b>    | <b>B*50:41</b> | <b>Confirmed</b>    |                |                     |
| <b>B*50:12</b>       | <b>Confirmed</b>    | B*50:42        | Unconfirmed         |                |                     |
| B*50:13              | Unconfirmed         | B*50:43        | Unconfirmed         |                |                     |

<sup>1</sup>Allele status “confirmed” or “unconfirmed” as listed on the IMGT/HLA web page 2017-August-10, release 3.29.0, [www.ebi.ac.uk/imgt/hla](http://www.ebi.ac.uk/imgt/hla).

### RESOLUTION IN HOMO- AND HETEROZYGOTES

Results file with resolution in HLA-B\*50 homo- and heterozygotes is available upon request.

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**SPECIFICITY TABLE**

**HLA-B\*50 SSP subtyping**

Specificities and sizes of the PCR products of the 23+1 primer mixes used for  
HLA-B\*50 SSP subtyping

| Primer Mix | Size of spec. PCR product <sup>1</sup> | Size of control band <sup>2</sup> | Amplified HLA-B*50 alleles <sup>3</sup>                                                | Other amplified HLA Class I alleles                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |
|------------|----------------------------------------|-----------------------------------|----------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 1          | 255 bp                                 | 800 bp                            | *50:01:01:01-50:01:08, 50:04-50:11, 50:13-50:16, 50:18-50:20, 50:31-50:50, 50:52-50:53 | *07:78, 07:84, 08:09, 08:84, 13:02:01:01-13:04, 13:08-13:09, 13:14-13:16, 13:18-13:19, 13:27, 13:30-13:35, 13:37-13:38, 13:40-13:42, 13:44-13:49N, 13:53-13:56:02N, 13:58-13:59, 13:62, 13:65-13:70, 13:72, 13:74-13:75, 13:81-13:82, 13:84-13:85, 13:88-13:89, 13:91, 13:93-13:94, 13:96-13:103N, 14:37, 15:04:01:01-15:04:04, 15:16:01:01-15:16:03, 15:42, 15:67, 15:83, 15:95, 15:137, 15:155, 15:222, 15:254, 15:293, 15:303, 15:310, 15:362, 15:408, 27:14, 27:81, 27:130, 27:153, 35:37, 35:60, 35:235, 35:265, 35:273, 35:276, 39:06:01-39:06:05, 39:33-39:34, 39:50, 39:57, 39:62, 39:64, 39:83, 39:90, 39:102, 39:109, 39:127, 40:06:01:01-40:06:12, 40:06:14-40:06:16, 40:44, 40:53, 40:70:01-40:70:02, 40:75, 40:83, 40:86, 40:93, 40:95-40:96, 40:103, 40:109-40:110, 40:127, 40:131, 40:148, 40:159, 40:161-40:162, 40:165, 40:167, 40:177, 40:190, 40:230, 40:244, 40:256N, 40:268, 40:270, 40:275, 40:294-40:295, 40:298, 40:306-40:307, 40:311, 40:313, 40:317-40:318, 40:330, 40:340-40:342, 40:348-40:350, 40:354, 41:01:01-41:01:05, 41:05-41:07, 41:09, 41:12, 41:14, 41:16-41:17, 41:20-41:22, 41:25-41:26, 41:28-41:30, 41:32-41:35, 41:37, 41:44, 41:50, 42:04, 45:04, 45:08, 45:10, 46:11, 46:18, 46:32, 49:01:01:01-49:14, 49:16-49:19N, 49:21-49:46, 49:48, 51:01:01:01-51:03, 51:05, 51:07:01-51:22, 51:24:01-51:24:05, 51:26-51:41N, 51:43-51:44N, 51:48-51:55, 51:57-51:58, 51:60-51:61:02, 51:63:01-51:63:02, 51:65-51:69, 51:71-51:80, 51:82-51:107, 51:109-51:134, 51:136-51:138, 51:140-51:147, 51:149N-51:174:02, 51:176-51:187, 51:189-51:193, 51:195-51:211, 51:214-51:219, 51:221-51:226, 52:01:01:01-52:14, 52:16-52:47, 52:49N-52:54, 52:56-52:71, 54:01:01-54:05N, 54:07-54:08N, 54:10-54:37, 55:01:01-55:01:06, 55:01:08-55:03, 55:05, 55:07, 55:09-55:13, 55:15-55:48, 55:50, 55:52-55:62, 55:64-55:85, 56:01:01:01-56:01:09, 56:05:01-56:08, 56:13-56:17, 56:19N-56:30, 56:33-56:50, 56:52-56:53, 58:08:01-58:08:02, 59:01:01:01-59:10N, 73:01-73:02, 78:01:01:01-78:09, <b>C*05:152, C*07:463, C*12:183</b> |
| 2          | 255 bp                                 | 1070 bp                           | *50:02                                                                                 | *44:15, 44:18, 44:20, 44:47, 44:100, 44:197, 45:01:01-45:03, 45:05-45:07, 45:09, 45:11-45:20, 49:20, 51:23, 51:108, 52:15                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |

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|                        |        |         |                                                                                                                             |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |
|------------------------|--------|---------|-----------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>3<sup>4,5</sup></b> | 80 bp  | 800 bp  | *50:04                                                                                                                      | *07:182N, 15:18:03, 15:73, 15:224, 39:17, 40:48, 40:71, 44:140, 44:226, 51:62, 56:04, <b>A*02:339, A*02:510, C*03:19, C*03:102, C*03:307, C*03:318N, C*15:26</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |
| <b>4<sup>4</sup></b>   | 105 bp | 1070 bp | *50:01:01:01-50:02, 50:04-50:08, 50:10-50:11, 50:13, 50:15, 50:18-50:19, 50:31-50:32, 50:34-50:40, 50:43-50:50, 50:52-50:53 | *07:78, 13:02:01:01-13:02:14, 13:02:16-13:03, 13:08-13:09, 13:14-13:16, 13:18-13:19, 13:27, 13:30-13:34, 13:37-13:38, 13:40-13:42, 13:44-13:45, 13:48-13:49N, 13:53-13:56:02N, 13:58, 13:65-13:70, 13:74-13:75, 13:81-13:82, 13:84-13:85, 13:88-13:89, 13:91, 13:93-13:94, 13:96-13:103N, 14:37, 15:42, 15:303, 35:60, 44:15, 44:18, 45:01:01-45:01:02, 45:03-45:08, 45:10-45:20, 46:11, 46:18, 49:01:01:01-49:03, 49:06-49:14, 49:16-49:17, 49:19N-49:46, 49:48, 51:15, 51:157, 51:225, 52:25:01, 54:01:01-54:03, 54:05N, 54:07-54:08N, 54:10, 54:12-54:13, 54:16-54:30, 54:32-54:37, 55:01:01-55:01:06, 55:01:08-55:03, 55:05, 55:07, 55:09-55:12, 55:15-55:16, 55:18-55:19, 55:21-55:22, 55:24-55:26, 55:29-55:31, 55:33-55:38, 55:40-55:41, 55:43, 55:45-55:48, 55:50, 55:52, 55:54-55:57, 55:59-55:60, 55:62-55:67, 55:69-55:80, 55:82-55:85, 56:01:01:01-56:01:09, 56:07-56:08, 56:13-56:14, 56:16-56:17, 56:19N-56:20:02, 56:23-56:30, 56:33-56:49, 56:52-56:53, 59:01:01:01-59:01:01:02, 59:04-59:10N |
| <b>5</b>               | 145 bp | 1070 bp | *50:01:01:01-50:02, 50:04-50:05, 50:07-50:20, 50:31-50:53                                                                   | *07:133, 08:155, 15:46, 15:53, 15:106, 15:143, 15:212, 18:48, 18:107, 35:19, 35:47, 35:63, 35:154, 35:217, 35:274, 35:317, 39:69, 40:01:01-40:11:02, 40:14:01-40:16, 40:18, 40:20, 40:22N-40:40, 40:42-40:45, 40:48-40:75, 40:77-40:92, 40:94-40:95, 40:97-40:108, 40:111-40:116, 40:118N-40:136, 40:138-40:156, 40:158-40:184, 40:186:01-40:187, 40:189-40:200, 40:202-40:207, 40:210-40:264, 40:266-40:291N, 40:293-40:307, 40:309-40:339, 40:341-40:349, 40:351-40:360, 41:01:01-41:04, 41:06-41:25, 41:27-41:45N, 41:47-41:52, 44:09, 44:46, 44:75, 44:90, 44:129, 44:131, 44:254, 45:01:01-45:15, 45:17-45:20, 47:02, 47:03 <sup>w</sup> , 48:41                                                                                                                                                                                                                                                                                                                                                         |
| <b>6<sup>6</sup></b>   | 160 bp | 1070 bp | *50:01:01:01-50:02, 50:04-50:08, 50:10-50:13, 50:15-50:19, 50:31-50:32, 50:34-50:38, 50:40-50:53                            | *13:01:01:01-13:03, 13:06-13:09, 13:11-13:12:02, 13:14-13:17, 13:19-13:20, 13:22:01-13:23, 13:25, 13:27-13:34, 13:36-13:45, 13:47-13:50, 13:52-13:58, 13:60-13:61, 13:63N-13:70, 13:74-13:78, 13:80-13:85, 13:87-13:103N, 14:37, 15:42, 15:73, 15:86, 15:224, 15:303, 35:60, 39:17, 40:48, 40:71, 44:10, 46:11, 46:18, 49:01:01:01-49:03, 49:06-49:14, 49:16-49:17, 49:19N-49:36, 49:38-49:40, 49:42-49:48, 51:15, 51:62, 51:106, 51:157, 51:223, 51:225, 52:25:01-52:25:02, 54:01:01-54:03, 54:05N, 54:07-54:08N, 54:12-54:13, 54:17-54:19, 54:21-54:38, 55:01:01-55:03, 55:05, 55:07, 55:10-55:12, 55:15-55:16, 55:18-55:19, 55:21-55:22, 55:24-55:26, 55:29-55:31, 55:33-55:36, 55:38-55:45, 55:47-55:48, 55:50, 55:53-55:55N, 55:57, 55:59-55:67, 55:69-55:80, 55:82-55:85, 56:01:01:01-56:01:04, 56:01:06-56:02:02, 56:04, 56:07-56:08, 56:10, 56:14, 56:16-56:17, 56:19N-56:20:02, 56:23-56:30, 56:33-56:49,                                                                                            |

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|                  |                  |         |                                                                                                                                                     |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |
|------------------|------------------|---------|-----------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 7                | 150 bp           | 1070 bp | *50:01:01:01-<br>50:02, 50:04-<br>50:08, 50:10-<br>50:13, 50:15-<br>50:19, 50:31-<br>50:32, 50:34-<br>50:38, 50:40-<br>50:46, 50:48,<br>50:50-50:53 | 56:52-56:53, 58:73, 59:01:01:01-59:01:01:02, 59:04-<br>59:10N, <b>C*07:536, C*15:91, C*15:128</b><br>*07:78 <sup>w</sup> , 13:16 <sup>w</sup> , 13:20 <sup>w</sup> , 13:48 <sup>w</sup> , 14:37, 15:42 <sup>w</sup> ,<br>49:01:01:01-49:01:01:02, 49:01:03-49:03, 49:06-<br>49:10, 49:12-49:14, 49:16-49:17, 49:19N-49:40,<br>49:41 <sup>w</sup> , 49:42-49:44, 49:46-49:48, 51:62 <sup>w</sup> , 51:106 <sup>w</sup> ,<br>51:223, 51:225, 52:25:01 <sup>w</sup> , 52:25:02, 54:20 <sup>w</sup> ,<br>55:01:01 <sup>w</sup> -55:01:16 <sup>w</sup> , 55:03 <sup>w</sup> , 55:05 <sup>w</sup> , 55:09 <sup>w</sup> , 55:11 <sup>w</sup> ,<br>55:15 <sup>w</sup> , 55:24 <sup>w</sup> -55:25 <sup>w</sup> , 55:29 <sup>w</sup> , 55:31 <sup>w</sup> , 55:33 <sup>w</sup> ,<br>55:36 <sup>w</sup> , 55:38 <sup>w</sup> , 55:40 <sup>w</sup> , 55:44 <sup>w</sup> -55:45 <sup>w</sup> , 55:52 <sup>w</sup> -<br>55:55N <sup>w</sup> , 55:59 <sup>w</sup> -55:60 <sup>w</sup> , 55:64 <sup>w</sup> , 55:66 <sup>w</sup> , 55:73 <sup>w</sup> -<br>55:76 <sup>w</sup> , 55:78 <sup>w</sup> -55:79 <sup>w</sup> , 55:84 <sup>w</sup> -55:85 <sup>w</sup> , 56:25 <sup>w</sup> ,<br>56:37 <sup>w</sup> , <b>C*01:90<sup>w</sup>, C*15:91, C*15:128</b>                                                                                                                                                                                                                                                                                                                                                    |
|                  | 135 bp<br>365 bp | 1070 bp | *50:05<br>*50:17                                                                                                                                    | *13:01:01:01-13:01:12, 13:06, 13:12:01-13:13:02,<br>13:17, 13:20-13:23, 13:25-13:26:02, 13:28-13:29,<br>13:39, 13:43, 13:50-13:52, 13:57, 13:60-13:61,<br>13:63N, 13:73, 13:77-13:78, 13:80, 13:83, 13:86-<br>13:87, 13:90, 13:92, 13:95, 15:20, 15:25:01-15:25:03,<br>15:36, 15:62, 15:77, 15:85, 15:106, 15:154, 15:204,<br>15:240, 15:250, 15:271, 15:289, 15:366, 15:393,<br>15:402, 15:407, 35:28, 35:63, 37:19:01-37:19:02,<br>37:50, 40:04, 40:28, 40:59, 40:64, 40:120, 40:129,<br>40:137, 40:160:01-40:160:02, 40:343, 41:48,<br>44:02:01:01-44:02:21, 44:02:23, 44:02:25-44:02:33,<br>44:02:35-44:03:04, 44:03:06-44:03:14, 44:03:16-<br>44:03:35, 44:03:37-44:05:04, 44:07-44:11, 44:14,<br>44:16-44:17, 44:19N, 44:21-44:30, 44:32-44:40,<br>44:42-44:46, 44:48-44:53:02, 44:55, 44:57-44:64:02,<br>44:66, 44:68, 44:71-44:81, 44:83-44:89, 44:91-44:95,<br>44:98, 44:101-44:105, 44:107-44:109, 44:111-<br>44:112, 44:114-44:134, 44:136-44:137, 44:139-<br>44:148, 44:150-44:152, 44:154-44:157, 44:159-<br>44:165, 44:167-44:170, 44:172-44:183, 44:185-<br>44:196, 44:198N-44:210, 44:212, 44:214-44:229,<br>44:231, 44:233-44:235, 44:237N-44:245, 44:247-<br>44:258, 44:260-44:262, 44:265-44:271, 48:02:01-<br>48:02:03, 48:17, 48:25, 53:17:01-53:17:02, 53:28,<br>53:38<br>*13:23, 15:204, 18:105, 27:19, 27:30, 27:127, 35:50,<br>35:63, 35:84, 35:162, 35:217, 35:231, 35:280,<br>35:323, 37:19:01-37:19:02, 37:50, 40:04, 40:28,<br>40:59, 40:64, 40:68, 40:120, 40:160:01-40:160:02,<br>40:343, 41:48, 44:55, 44:103, 44:131, 44:188,<br>44:212, 58:41, <b>C*03:278</b> |
| 9 <sup>4,7</sup> | 105 bp           | 800 bp  | *50:12                                                                                                                                              |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |
|                  | 150 bp           |         | *50:06, 50:46                                                                                                                                       | *40:208                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |
| 10 <sup>4</sup>  | 90 bp            | 800 bp  | *50:07                                                                                                                                              | *40:83, 40:170, 41:41, 44:07, 44:194, 49:42                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
| 11 <sup>4</sup>  | 105 bp           | 1070 bp | *50:16                                                                                                                                              |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |
|                  | 280 bp           |         | *50:08                                                                                                                                              | *54:28                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |
| 12               | 140 bp           | 1070 bp | *50:18-50:19                                                                                                                                        | *35:264, 44:186, 51:107, <b>C*03:110</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |
|                  | 180 bp           |         | *50:09                                                                                                                                              | *14:19, 14:27, 15:137, 35:261, 37:39, 37:48, 45:02,<br>51:172, 53:07, <b>C*03:250, C*03:267, C*04:08,</b><br><b>C*04:34, C*04:147, C*04:212, C*05:27, C*05:39,</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |

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|                       |        |               |                      | C*05:151, C*08:41, C*08:115, C*08:138, C*17:07, C*18:08                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |
|-----------------------|--------|---------------|----------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>13</b>             | 270 bp | <b>800 bp</b> | *50:10               |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |
| <b>14</b>             | 300 bp | 1070 bp       | *50:11               | *39:90                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |
| <b>15</b>             | 135 bp | <b>800 bp</b> | *50:13, 50:19, 50:43 | *15:46, 15:53, 15:106, 18:107, 35:47, 35:154, 40:10:01-40:10:02, 40:40, 40:49, 40:58, 40:110, 40:129, 40:164, 40:210, 40:219, 40:229, 40:325, 40:342, 41:33, 41:47, 44:02:01:01-44:02:31, 44:02:33-44:03:15, 44:03:17-44:03:29, 44:03:31-44:05:04, 44:09-44:14, 44:16-44:17, 44:19N-44:39, 44:41:01-44:43:02, 44:45-44:48, 44:50:01-44:54, 44:56N, 44:58N-44:59:02, 44:61N-44:80, 44:82, 44:84:01-44:102, 44:104-44:110, 44:112-44:129, 44:132-44:133, 44:135-44:144, 44:146-44:155, 44:157-44:187, 44:189-44:193, 44:195N-44:199, 44:201-44:209, 44:211, 44:213-44:224, 44:226-44:245, 44:247-44:271, 47:01:01:01-47:10, 49:10, 49:24, 49:31, 53:30, 57:45, 57:69, <b>C*16:85</b>                                                                                                                                               |
| <b>16<sup>4</sup></b> | 95 bp  | 1070 bp       | *50:14               | *35:01:10, 35:04:02, 40:28, 49:18:01, 51:56:01-51:56:03, 51:158:02, 53:28, 55:01:04, <b>C*02:02:23, C*12:03:31</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |
|                       | 160 bp |               | *50:15               | *07:177 <sup>w</sup> , 08:102, 08:122, 13:36, 14:48, 15:345, 18:80, 18:102, 18:107, 27:23, 27:92, 27:157, 35:84, 35:90, 35:150:01-35:150:02, 35:184, 35:201, 35:217, 38:16, 38:46, 40:08, 40:25, 40:68, 40:106, 40:166 <sup>w</sup> , 40:232, 40:313, 44:12, 44:232, 44:263, 49:26, 51:103, 51:119, 56:36 <sup>w</sup> , 73:01 <sup>w</sup> -73:02 <sup>w</sup>                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |
|                       | 580 bp |               | *50:14               | *13:62, 27:04:03, 27:153, 40:01:06, 40:26, 40:28, 40:95, 44:03:40, 44:62, 49:18:01, 51:103, 51:119                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |
| <b>17<sup>4</sup></b> | 90 bp  | 1070 bp       | *50:20, 50:40        | *27:14, 27:81, 44:20, 44:47, 44:100, 44:197, 51:85, 51:192, 51:214, 52:26                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |
| <b>18</b>             | 245 bp | 1070 bp       | *50:31               | *07:78, 07:84, 13:02:01:01-13:02:21, 13:08-13:09, 13:14-13:16, 13:18-13:19, 13:27, 13:30-13:35, 13:37-13:38, 13:40-13:42, 13:44-13:45, 13:47, 13:49N, 13:54-13:56:02N, 13:58-13:59, 13:65-13:70, 13:72, 13:74-13:75, 13:81-13:82, 13:84-13:85, 13:88-13:89, 13:91, 13:93-13:94, 13:96-13:103N, 27:14, 27:81, 27:130, 39:50, 40:06:01:01-40:06:16, 40:44, 40:53, 40:70:01-40:70:02, 40:75, 40:83, 40:86, 40:93, 40:95-40:96, 40:103, 40:109-40:110, 40:127, 40:131, 40:148, 40:159, 40:161-40:162, 40:165, 40:167, 40:177, 40:190, 40:230, 40:244, 40:256N, 40:268-40:270, 40:275, 40:294-40:295, 40:298, 40:306-40:307, 40:311, 40:313, 40:317-40:318, 40:330, 40:340-40:342, 40:348-40:350, 40:354, 45:10, 49:07, 51:10, 51:16, 51:31, 51:34, 51:82, 51:93, 52:08, 52:67, 54:26, 55:09, 55:22, 55:24, 59:09, 73:01-73:02, 78:08 |
| <b>19<sup>4</sup></b> | 95 bp  | 1070 bp       | *50:33               | *07:84, 13:04, 13:35, 13:72, 15:04:01:01-15:04:04, 15:16:01:01-15:16:03, 15:67, 15:95, 15:155, 15:222, 15:254, 15:293, 15:310, 15:362, 15:408, 35:37, 35:235, 35:265, 40:44, 40:159, 41:21, 44:20, 44:47, 44:100, 44:197, 45:09, 46:32, 49:04:01-49:05, 51:37, 51:90, 51:92:01-51:92:02, 51:197, 51:216, 52:12,                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |

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|                       |        |         |                         |                                                                                                                                                                               |
|-----------------------|--------|---------|-------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|                       |        |         |                         | 52:26, 52:63, 54:14-54:15, 55:23, 55:27, 55:68, 56:50, <b>C*07:463, C*12:183</b>                                                                                              |
| <b>20</b>             | 145 bp | 1070 bp | *50:37                  |                                                                                                                                                                               |
| <b>21<sup>4</sup></b> | 95 bp  | 1070 bp | *50:39, 50:41           |                                                                                                                                                                               |
| <b>22</b>             | 240 bp | 1070 bp | *50:45, 50:49           | *14:37, 41:01:01-41:01:05, 41:05-41:07, 41:09, 41:12, 41:14, 41:16, 41:20-41:22, 41:25-41:26, 41:28-41:30, 41:32-41:35, 41:37, 41:44, 41:50, 45:08, <b>C*05:152, C*07:463</b> |
| <b>23<sup>4</sup></b> | 100 bp | 1070 bp | *50:51                  | *54:38, <b>C*01:90, C*01:136, C*01:145N, C*06:168, C*12:15, C*15:37, C*15:58</b>                                                                                              |
| <b>24<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 HLA-B\*50 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 1st and/or 4th exon(s) and beyond, as well as intron nucleotide sequences, are not available. In these instances it is not known whether some of the primers of the SSP sets are completely matched with the target sequences or not. Assumption is made that unknown sequences in these regions are conserved within allelic groups.

<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 mix 3 has a tendency of giving rise to primer oligomer formation.

<sup>6</sup>Primer mix 6 may give rise to a lower yield of HLA-specific PCR product than the other B\*50 primer mixes.

<sup>7</sup>Primer mix 9 may have tendency of unspecific amplification.

<sup>8</sup>Primer mix 24 contains a negative control, which will amplify more than 95% 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 430 base pairs.

'w', may be weakly amplified.

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## PRIMER SPECIFICATION

| Well No.                                 | 1         | 2         | 3         | 4         | 5         | 6         | 7         | 8         | 9         | 10        | 11        | 12        |
|------------------------------------------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|
| Length of spec. PCR product              | 255       | 255       | 80        | 105       | 145       | 160       | 150       | 135       | 105       | 90        | 105       | 140       |
|                                          |           |           |           |           |           |           |           | 365       | 150       |           | 280       | 180       |
|                                          |           |           |           |           |           |           |           | 540       |           |           |           |           |
| Length of int. pos. control <sup>1</sup> | 800       | 1070      | 800       | 1070      | 1070      | 1070      | 1070      | 1070      | 800       | 800       | 1070      | 1070      |
| 5'-primer(s) <sup>2</sup>                | 357       | 357       | 379       | 357       | 206       | 420       | 420       | 97        | 97        | 142       | 357       | 420       |
|                                          | 5'-Tgg 3' | 5'-Tgg 3' | 5'-ACg 3' | 5'-Tgg 3' | 5'-gAA 3' | 5'-TTA 3' | 5'-TTA 3' | 5'-TCC 3' | 5'-TCC 3' | 5'-TCA 3' | 5'-Tgg 3' | 5'-TTC 3' |
|                                          |           |           |           |           |           |           |           | 272       | 355       |           |           | 454       |
|                                          |           |           |           |           |           |           |           | 5'-CTC 3' | 5'-CTg 3' |           |           | 5'-ACC 3' |
|                                          |           |           |           |           |           |           |           |           |           |           |           | 460       |
|                                          |           |           |           |           |           |           |           |           |           |           |           | 5'-ACA 3' |
| 3'-primer(s) <sup>3</sup>                | 572       | 572       | 420       | 420       | 311       | 538       | 527       | 191       | 206       | 193       | 422       | 559       |
|                                          | 5'-gCC 3' | 5'-gCg 3' | 5'-gCT 3' | 5'-gCT 3' | 5'-ggT 3' | 5'-CAG 3' | 5'-CCT 3' | 5'-TgA 3' | 5'-CCC 3' | 5'-CgC 3' | 5'-AgC 3' | 5'-CAG 3' |
|                                          |           |           |           |           |           | 538       |           | 353       | 217       |           | 594       |           |
|                                          |           |           |           |           |           | 5'-CCA 3' |           | 5'-TgA 3' | 5'-CgT 3' |           | 5'-CCT 3' |           |
|                                          |           |           |           |           |           |           |           |           | 420       |           |           |           |
|                                          |           |           |           |           |           |           |           |           | 5'-gCT 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        |
|------------------------------------------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|
| Length of spec. PCR product              | 270       | 300       | 135       | 95        | 90        | 245       | 95        | 145       | 95        | 240       | 100       |
|                                          |           |           |           | 160       |           |           |           |           |           |           |           |
|                                          |           |           |           | 580       |           |           |           |           |           |           |           |
| Length of int. pos. control <sup>1</sup> | 800       | 1070      | 800       | 1070      | 1070      | 1070      | 1070      | 1070      | 1070      | 1070      | 1070      |
| 5'-primer(s) <sup>2</sup>                | 81        | 357       | 97        | 142       | 357       | 357       | 357       | 668       | 362       | 362       | 361       |
|                                          | 5'-CAg 3' | 5'-Tgg 3' | 5'-TCT 3' | 5'-TCA 3' | 5'-Tgg 3' | 5'-Tgg 3' | 5'-Tgg 3' | 5'-ggg 3' | 5'-gAg 3' | 5'-gAg 3' | 5'-AgT 3' |
|                                          |           |           | 460       | 379       |           |           |           |           |           |           |           |
|                                          |           |           | 5'-ACA 3' | 5'-ACC 3' |           |           |           |           |           |           |           |
| 3'-primer(s) <sup>3</sup>                | 311       | 616       | 193       | 259       | 398       | 559       | 412       | 774       | 412       | 559       | 420       |
|                                          | 5'-ggT 3' | 5'-CgT 3' | 5'-CgT 3' | 5'-gTT 3' | 5'-ggg 3' | 5'-CTC 3' | 5'-gTC 3' | 5'-ggT 3' | 5'-gTC 3' | 5'-CgT 3' | 5'-gCT 3' |
|                                          |           |           | 559       | 435       | 418       |           |           |           | 422       |           |           |
|                                          |           |           | 5'-CAg 3' | 5'-TCT 3' | 5'-gTC 3' |           |           |           | 5'-AgA 3' |           |           |
| Well No.                                 | 13        | 14        | 15        | 16        | 17        | 18        | 19        | 20        | 21        | 22        | 23        |

<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.

**101.548-06 – including *Tag* pol., IFU-01**

Visit <https://labproducts.caredx.com> for

101.548-06u – without *Taq* pol., IFU-02

**“Instructions for Use” (IFU)**

**Lot No.: 7F3**

### Lot-specific information

| CELL LINE VALIDATION SHEET           |                             |            |        |  |            |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |
|--------------------------------------|-----------------------------|------------|--------|--|------------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|
| HLA-B*50 SSP primer set <sup>2</sup> |                             |            |        |  |            |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |
|                                      |                             |            |        |  | Prod. No.: | Well      |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |
|                                      |                             |            |        |  |            | 1         | 2         | 3         | 4         | 5         | 6         | 7         | 8         | 9         | 10        | 11        | 12        | 13        | 14        | 15        | 16        |
|                                      |                             |            |        |  |            | 201663001 | 201663002 | 201663003 | 201663004 | 201663005 | 201785906 | 201663007 | 201785908 | 201785909 | 201663010 | 201663011 | 201663012 | 201663013 | 201663014 | 201663015 | 201663016 |
|                                      | IHCW cell line <sup>1</sup> |            | B*     |  |            |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |
| 1                                    | 9001                        | SA         | *07:02 |  |            | -         | -         | -         | -         | -         | -         | -         | -         | -         | -         | -         | -         | -         | -         | -         |           |
| 2                                    | 9280                        | LK707      | *52:01 |  | *73:01     | +         | -         | -         | -         | -         | -         | -         | -         | -         | -         | -         | -         | -         | -         | W         |           |
| 3                                    | 9011                        | E4181324   | *52:01 |  |            | +         | -         | -         | -         | -         | -         | -         | -         | -         | -         | -         | -         | -         | -         | -         |           |
| 4                                    | 9275                        | GU373      | *15:10 |  | *53:01     | -         | -         | -         | -         | -         | -         | -         | -         | -         | -         | -         | -         | -         | -         | -         |           |
| 5                                    | 9009                        | KAS011     | *37:01 |  |            | -         | -         | -         | -         | -         | -         | -         | -         | -         | -         | -         | -         | -         | -         | -         |           |
| 6                                    | 9353                        | SM         | *39:01 |  | *51:01     | +         | -         | -         | -         | -         | -         | -         | -         | -         | -         | -         | -         | -         | -         | -         |           |
| 7                                    | 9020                        | QBL        | *18:01 |  |            | -         | -         | -         | -         | -         | -         | -         | -         | -         | -         | -         | -         | -         | -         | -         |           |
| 8                                    | 9025                        | DEU        | *35:01 |  |            | -         | -         | -         | -         | -         | -         | -         | -         | -         | -         | -         | -         | -         | -         | -         |           |
| 9                                    | 9026                        | YAR        | *38:01 |  |            | -         | -         | -         | -         | -         | -         | -         | -         | -         | -         | -         | -         | -         | -         | -         |           |
| 10                                   | 9107                        | LKT3       | *54:01 |  |            | +         | -         | -         | +         | -         | +         | -         | -         | -         | -         | -         | -         | -         | -         | -         |           |
| 11                                   | 9051                        | PITOUT     | *44:03 |  |            | -         | -         | -         | -         | -         | -         | -         | +         | -         | -         | -         | -         | -         | +         | -         |           |
| 12                                   | 9052                        | DBB        | *57:01 |  |            | -         | -         | -         | -         | -         | -         | -         | -         | -         | -         | -         | -         | -         | -         | -         |           |
| 13                                   | 9004                        | JESTHOM    | *27:05 |  |            | -         | -         | -         | -         | -         | -         | -         | -         | -         | -         | -         | -         | -         | -         | -         |           |
| 14                                   | 9071                        | OLGA       | *15:01 |  | *15:20     | -         | -         | -         | -         | -         | -         | -         | +         | -         | -         | -         | -         | -         | -         | -         |           |
| 15                                   | 9075                        | DKB        | *40:01 |  |            | -         | -         | -         | -         | +         | -         | -         | -         | -         | -         | -         | -         | -         | -         | -         |           |
| 16                                   | 9037                        | SWEIG007   | *40:02 |  |            | -         | -         | -         | -         | +         | -         | -         | -         | -         | -         | -         | -         | -         | -         | -         |           |
| 17                                   | 9282                        | CTM3953540 | *08:01 |  | *55:01     | +         | -         | -         | +         | -         | +         | W         | -         | -         | -         | -         | -         | -         | -         | -         |           |
| 18                                   | 9257                        | 32367      | *14:01 |  | *56:01     | +         | -         | -         | +         | -         | +         | -         | -         | -         | -         | -         | -         | -         | -         | -         |           |
| 19                                   | 9038                        | BM16       | *18:01 |  |            | -         | -         | -         | -         | -         | -         | -         | -         | -         | -         | -         | -         | -         | -         | -         |           |
| 20                                   | 9059                        | SLE005     | *40:01 |  |            | -         | -         | -         | -         | +         | -         | -         | -         | -         | -         | -         | -         | -         | -         | -         |           |
| 21                                   | 9064                        | AMALA      | *15:01 |  |            | -         | -         | -         | -         | -         | -         | -         | -         | -         | -         | -         | -         | -         | -         | -         |           |
| 22                                   | 9056                        | KOSE       | *35:03 |  |            | -         | -         | -         | -         | -         | -         | -         | -         | -         | -         | -         | -         | -         | -         | -         |           |
| 23                                   | 9124                        | IHL        | *40:02 |  | *56:02     | -         | -         | -         | -         | +         | +         | -         | -         | -         | -         | -         | -         | -         | -         | -         |           |
| 24                                   | 9035                        | JBUSH      | *38:01 |  |            | -         | -         | -         | -         | -         | -         | -         | -         | -         | -         | -         | -         | -         | -         | -         |           |
| 25                                   | 9049                        | IBW9       | *14:02 |  |            | -         | -         | -         | -         | -         | -         | -         | -         | -         | -         | -         | -         | -         | -         | -         |           |
| 26                                   | 9285                        | WT49       | *58:01 |  |            | -         | -         | -         | -         | -         | -         | -         | -         | -         | -         | -         | -         | -         | -         | -         |           |
| 27                                   | 9191                        | CH1007     | *07:05 |  | *51:01     | +         | -         | -         | -         | -         | -         | -         | -         | -         | -         | -         | -         | -         | -         | -         |           |
| 28                                   | 9320                        | BEL5GB     | *44:02 |  | *44:03     | -         | -         | -         | -         | -         | -         | -         | +         | -         | -         | -         | -         | -         | +         | -         |           |
| 29                                   | 9050                        | MOU        | *44:03 |  |            | -         | -         | -         | -         | -         | -         | -         | +         | -         | -         | -         | -         | -         | +         | -         |           |
| 30                                   | 9021                        | RSH        | *42:01 |  |            | -         | -         | -         | -         | -         | -         | -         | -         | -         | -         | -         | -         | -         | -         | -         |           |
| 31                                   | 9019                        | DUCAF      | *18:01 |  |            | -         | -         | -         | -         | -         | -         | -         | -         | -         | -         | -         | -         | -         | -         | -         |           |
| 32                                   | 9297                        | HAG        | *41:02 |  |            | -         | -         | -         | -         | +         | -         | -         | -         | -         | -         | -         | -         | -         | -         | -         |           |
| 33                                   | 9098                        | MT14B      | *40:01 |  |            | -         | -         | -         | -         | +         | -         | -         | -         | -         | -         | -         | -         | -         | -         | -         |           |
| 34                                   | 9104                        | DHIF       | *38:01 |  |            | -         | -         | -         | -         | -         | -         | -         | -         | -         | -         | -         | -         | -         | -         | -         |           |
| 35                                   | 9302                        | SSTO       | *44:02 |  |            | -         | -         | -         | -         | -         | -         | -         | +         | -         | -         | -         | -         | -         | +         | -         |           |
| 36                                   | 9024                        | KT17       | *15:01 |  | *35:01     | -         | -         | -         | -         | -         | -         | -         | -         | -         | -         | -         | -         | -         | -         | -         |           |
| 37                                   | 9065                        | HHKB       | *07:02 |  |            | -         | -         | -         | -         | -         | -         | -         | -         | -         | -         | -         | -         | -         | -         | -         |           |
| 38                                   | 9099                        | LZL        | *15:01 |  |            | -         | -         | -         | -         | -         | -         | -         | -         | -         | -         | -         | -         | -         | -         | -         |           |
| 39                                   | 9315                        | CML        | *08:01 |  | *27:05     | -         | -         | -         | -         | -         | -         | -         | -         | -         | -         | -         | -         | -         | -         | -         |           |
| 40                                   | 9134                        | WHONP199   | *13:02 |  | *46:01     | +         | -         | -         | +         | -         | +         | -         | -         | -         | -         | -         | -         | -         | -         | -         |           |
| 41                                   | 9055                        | H0301      | *14:02 |  |            | -         | -         | -         | -         | -         | -         | -         | -         | -         | -         | -         | -         | -         | -         | -         |           |
| 42                                   | 9066                        | TAB089     | *46:01 |  |            | -         | -         | -         | -         | -         | -         | -         | -         | -         | -         | -         | -         | -         | -         | -         |           |
| 43                                   | 9076                        | T7526      | *46:01 |  |            | -         | -         | -         | -         | -         | -         | -         | -         | -         | -         | -         | -         | -         | -         | -         |           |
| 44                                   | 9057                        | TEM        | *38:01 |  |            | -         | -         | -         | -         | -         | -         | -         | -         | -         | -         | -         | -         | -         | -         | -         |           |
| 45                                   | 9239                        | SHJO       | *42:01 |  | *50:01     | +         | -         | -         | +         | +         | +         | +         | -         | -         | -         | -         | -         | -         | -         | -         |           |
| 46                                   | 9013                        | SCHU       | *07:02 |  |            | -         | -         | -         | -         | -         | -         | -         | -         | -         | -         | -         | -         | -         | -         | -         |           |
| 47                                   | 9045                        | TUBO       | *51:01 |  |            | +         | -         | -         | -         | -         | -         | -         | -         | -         | -         | -         | -         | -         | -         | -         |           |
| 48                                   | 9303                        | TER-ND     | *35:01 |  | *44:03     | -         | -         | -         | -         | -         | -         | -         | +         | -         | -         | -         | -         | -         | +         | -         |           |

101.548-06 – including *Taq* pol., IFU-01

101.548-06u – without *Taq* pol., IFU-02

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Lot No.: **7F3**

Lot-specific information

| CELL LINE VALIDATION SHEET           |                             |            |        |  |            |           |           |           |           |           |           |           |
|--------------------------------------|-----------------------------|------------|--------|--|------------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|
| HLA-B*50 SSP primer set <sup>2</sup> |                             |            |        |  |            |           |           |           |           |           |           |           |
|                                      |                             |            |        |  | Prod. No.: | Well      |           |           |           |           |           |           |
|                                      |                             |            |        |  |            | 17        | 18        | 19        | 20        | 21        | 22        | 23        |
|                                      |                             |            |        |  |            | 201663017 | 201663018 | 201663019 | 201663020 | 201663021 | 201785922 | 201785923 |
|                                      | IHWC cell line <sup>1</sup> |            | B*     |  |            |           |           |           |           |           |           |           |
| 1                                    | 9001                        | SA         | *07:02 |  |            | -         | -         | -         | -         | -         | -         | -         |
| 2                                    | 9280                        | LK707      | *52:01 |  | *73:01     | -         | +         | -         | -         | -         | -         | -         |
| 3                                    | 9011                        | E4181324   | *52:01 |  |            | -         | -         | -         | -         | -         | -         | -         |
| 4                                    | 9275                        | GU373      | *15:10 |  | *53:01     | -         | -         | -         | -         | -         | -         | -         |
| 5                                    | 9009                        | KAS011     | *37:01 |  |            | -         | -         | -         | -         | -         | -         | -         |
| 6                                    | 9353                        | SM         | *39:01 |  | *51:01     | -         | -         | -         | -         | -         | -         | -         |
| 7                                    | 9020                        | QBL        | *18:01 |  |            | -         | -         | -         | -         | -         | -         | -         |
| 8                                    | 9025                        | DEU        | *35:01 |  |            | -         | -         | -         | -         | -         | -         | -         |
| 9                                    | 9026                        | YAR        | *38:01 |  |            | -         | -         | -         | -         | -         | -         | -         |
| 10                                   | 9107                        | LKT3       | *54:01 |  |            | -         | -         | -         | -         | -         | -         | -         |
| 11                                   | 9051                        | PITOUT     | *44:03 |  |            | -         | -         | -         | -         | -         | -         | -         |
| 12                                   | 9052                        | DBB        | *57:01 |  |            | -         | -         | -         | -         | -         | -         | -         |
| 13                                   | 9004                        | JESTHOM    | *27:05 |  |            | -         | -         | -         | -         | -         | -         | -         |
| 14                                   | 9071                        | OLGA       | *15:01 |  | *15:20     | -         | -         | -         | -         | -         | -         | -         |
| 15                                   | 9075                        | DKB        | *40:01 |  |            | -         | -         | -         | -         | -         | -         | -         |
| 16                                   | 9037                        | SWEIG007   | *40:02 |  |            | -         | -         | -         | -         | -         | -         | -         |
| 17                                   | 9282                        | CTM3953540 | *08:01 |  | *55:01     | -         | -         | -         | -         | -         | -         | -         |
| 18                                   | 9257                        | 32367      | *14:01 |  | *56:01     | -         | -         | -         | -         | -         | -         | -         |
| 19                                   | 9038                        | BM16       | *18:01 |  |            | -         | -         | -         | -         | -         | -         | -         |
| 20                                   | 9059                        | SLE005     | *40:01 |  |            | -         | -         | -         | -         | -         | -         | -         |
| 21                                   | 9064                        | AMALA      | *15:01 |  |            | -         | -         | -         | -         | -         | -         | -         |
| 22                                   | 9056                        | KOSE       | *35:03 |  |            | -         | -         | -         | -         | -         | -         | -         |
| 23                                   | 9124                        | IHL        | *40:02 |  | *56:02     | -         | -         | -         | -         | -         | -         | -         |
| 24                                   | 9035                        | JBUSH      | *38:01 |  |            | -         | -         | -         | -         | -         | -         | -         |
| 25                                   | 9049                        | IBW9       | *14:02 |  |            | -         | -         | -         | -         | -         | -         | -         |
| 26                                   | 9285                        | WT49       | *58:01 |  |            | -         | -         | -         | -         | -         | -         | -         |
| 27                                   | 9191                        | CH1007     | *07:05 |  | *51:01     | -         | -         | -         | -         | -         | -         | -         |
| 28                                   | 9320                        | BEL5GB     | *44:02 |  | *44:03     | -         | -         | -         | -         | -         | -         | -         |
| 29                                   | 9050                        | MOU        | *44:03 |  |            | -         | -         | -         | -         | -         | -         | -         |
| 30                                   | 9021                        | RSH        | *42:01 |  |            | -         | -         | -         | -         | -         | -         | -         |
| 31                                   | 9019                        | DUCAF      | *18:01 |  |            | -         | -         | -         | -         | -         | -         | -         |
| 32                                   | 9297                        | HAG        | *41:02 |  |            | -         | -         | -         | -         | -         | -         | -         |
| 33                                   | 9098                        | MT14B      | *40:01 |  |            | -         | -         | -         | -         | -         | -         | -         |
| 34                                   | 9104                        | DHIF       | *38:01 |  |            | -         | -         | -         | -         | -         | -         | -         |
| 35                                   | 9302                        | SSTO       | *44:02 |  |            | -         | -         | -         | -         | -         | -         | -         |
| 36                                   | 9024                        | KT17       | *15:01 |  | *35:01     | -         | -         | -         | -         | -         | -         | -         |
| 37                                   | 9065                        | HHKB       | *07:02 |  |            | -         | -         | -         | -         | -         | -         | -         |
| 38                                   | 9099                        | LZL        | *15:01 |  |            | -         | -         | -         | -         | -         | -         | -         |
| 39                                   | 9315                        | CML        | *08:01 |  | *27:05     | -         | -         | -         | -         | -         | -         | -         |
| 40                                   | 9134                        | WHONP199   | *13:02 |  | *46:01     | -         | +         | -         | -         | -         | -         | -         |
| 41                                   | 9055                        | H0301      | *14:02 |  |            | -         | -         | -         | -         | -         | -         | -         |
| 42                                   | 9066                        | TAB089     | *46:01 |  |            | -         | -         | -         | -         | -         | -         | -         |
| 43                                   | 9076                        | T7526      | *46:01 |  |            | -         | -         | -         | -         | -         | -         | -         |
| 44                                   | 9057                        | TEM        | *38:01 |  |            | -         | -         | -         | -         | -         | -         | -         |
| 45                                   | 9239                        | SHJO       | *42:01 |  | *50:01     | -         | -         | -         | -         | -         | -         | -         |
| 46                                   | 9013                        | SCHU       | *07:02 |  |            | -         | -         | -         | -         | -         | -         | -         |
| 47                                   | 9045                        | TUBO       | *51:01 |  |            | -         | -         | -         | -         | -         | -         | -         |
| 48                                   | 9303                        | TER-ND     | *35:01 |  | *44:03     | -         | -         | -         | -         | -         | -         | -         |

101.548-06 – including *Taq* pol., IFU-01

101.548-06u – without *Taq* pol., IFU-02

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**Lot No.: 7F3**

**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 9 to 14, 17, 20, 21 and 23 were available. The specificities of the primers in primer solutions 9, 12, 17, 21 and 23 were tested by separately adding one additional 5'-primer, respectively one additional 3'-primer. In primer solutions 10, 11 and 14 it was only possible to test the 5'-primer, the 3'-primers were not possible to test. In primer solutions 13 and 20 it was only possible to test the 3'-primer, the 5'-primer was not possible to test. In primer solutions 9, 12 and 15, one or two 5'-primers were not possible to test, and in primer solutions 8, 9, 17 and 21, one 3'-primer was not possible to test. Additional primers in primer solutions 6, 8, 15 and 16 were tested by separately adding one 5'-primer and/or one or two 3'-primers.

101.548-06 – including *Taq* pol., IFU-01  
101.548-06u – without *Taq* pol., IFU-02

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Lot No.: **7F3**

Lot-specific information

**101.548-06 – including *Taq* pol., IFU-01****101.548-06u – without *Taq* pol., IFU-02**Visit <https://labproducts.caredx.com> for**“Instructions for Use” (IFU)****Lot No.: 7F3****Lot-specific information****ADDRESSES:****Manufacturer:****Olerup SSP AB**, Franzengatan 5, SE-112 51 Stockholm, Sweden.**Tel:** +46-8-508 939 00**Fax:** +46-8-717 88 18**E-mail:** [olerup-se@caredx.com](mailto:olerup-se@caredx.com)**Web page:** <https://labproducts.caredx.com/>**Distributed by:****Olerup GmbH**, Löwengasse 47 / 6, AT-1030 Vienna, Austria.**Tel:** +43-1-710 15 00**Fax:** +43-1-710 15 00 10**E-mail:** [olerup-at@caredx.com](mailto:olerup-at@caredx.com)**Web page:** <https://labproducts.caredx.com/>**Olerup Inc.**, 901 S. Bolmar St., Suite R, West Chester, PA 19382**Tel:** 1-877-OLERUP1**Fax:** 610-344-7989**E-mail:** [olerup-us@caredx.com](mailto:olerup-us@caredx.com)**Web page:** <https://labproducts.caredx.com/>For information on CareDx distributors worldwide, contact **Olerup GmbH**.