

101.413-24/04 – including *Taq* polymerase, IFU-01
101.413-24u/04u – without *Taq* polymerase, IFU-02

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“Instructions for Use” (IFU)

Lot No.: **14Y**

Lot-specific Information

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Olerup SSP® HLA-A*03

| | |
|----------------------------------|--|
| Product number: | 101.413-24/04 – including <i>Taq</i> pol. 101.413-24u/04u – without <i>Taq</i> pol. |
| Lot number: | 14Y |
| Expiry date: | 2017-October-01 |
| Number of tests: | 24 tests – Product No. 101.413-24/24u 4 tests – Product No. 101.413-04/04u |
| Number of wells per test: | 63+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. 14Y.

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-A*03 Lot (53V)

The HLA-A*03 kit is updated for new alleles to enable separation of:

- Confirmed¹ alleles as listed in the IMGT/HLA database
- Polymorphisms in exons outside of the region encoding the peptide binding domain
- Null and Alternatively expressed alleles

A well containing Negative Control primer pairs has been added.

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

¹As described in section Uniquely Identified Alleles.

The HLA-A*03 primer set, specificity and interpretation tables have been updated for the HLA-A alleles described since the previous *Olerup SSP*® HLA-A*03 lot was made (**Lot No. 53V**). The kit design is based on IMGT/HLA database 3.19.0.

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

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

| Well | 5'-primer | 3'-primer | rationale |
|------|-----------|-----------------|---|
| 1 | Added | - | 5'-primer added for the A*03:01:49 allele. |
| 3 | Added | - | 5'-primer added for the A*03:01:49 allele. |
| 17 | Added | - | 5'-primer added for the A*03:01:49 allele. |
| 18 | Modified | Modified, added | 5'-primer and 3'-primer modified for increased yield and improved HLA-specific amplification, 3'-primer added for the A*03:200Q allele. |
| 19 | Added | - | 5'-primer added for the A*03:84 allele. |
| 20 | - | Added | 3'-primer added from well 44 for the allelic resolution of the 03:79 allele. |
| 22 | - | Added | 3'-primer added for the A*03:191 allele. |
| 30 | - | Added | 3'-primer added for the A*03:139 allele. |
| 38 | - | Added | 3'-primer added for the A*03:192N allele. |
| 41 | - | Added | 3'-primer added for the A*03:192N allele. |
| 42 | Added | - | 5'-primer added for the A*03:84 allele. |
| 44 | - | Moved | 3'-primer moved to well 20. |
| 46 | Added | - | 5'-primer added for the A*03:44:02 allele. |
| 48 | Added | - | 5'-primer added for the 03:197N allele. |
| 51 | Modified | - | 5'-primer modified for improved HLA-specific amplification. |
| 52 | - | Added | 5'-primer added for the A*03:176 allele. |
| 58 | - | Modified, added | 3'-primer modified for improved HLA-specific amplification, 3'-primer added for the A*03:200Q allele. |
| 59 | - | Added | 3'-primer added for the A*03:144 allele. |
| 62 | Added | Added | Primer pair added for the A*03:197N allele. |
| 63 | - | Added | 3'-primer added for the A*03:139 allele. |
| 64 | - | - | Updated negative control. |

Change in revision R01 compared to R00:

1. Primer mix 28 does not amplify the A*03:26 and the A*11:77 and 11:126 alleles. This has been corrected in the Specificity and Interpretation Tables. Thus, this lot of the HLA-A*03 subtyping kit cannot distinguish the A*03:01:01:01, 03:01:01:03, 03:01:03-03:01:05, 03:01:07, 03:01:09-03:01:11, 03:01:13, 03:01:15-03:01:22, 03:01:24-03:01:29, 03:01:31-03:01:46, 03:01:49, 03:01:51, 03:01:53, 03:77, 03:80, 03:83, 03:85, 03:92, 03:94, 03:100-03:101, 03:110, 03:114-03:117, 03:119-03:121, 03:124-03:126, 03:131, 03:136-03:138, 03:141, 03:145-03:148, 03:151, 03:154-03:157:01, 03:158-03:159, 03:163-03:164, 03:166, 03:169-03:170, 03:174-03:175, 03:181, 03:183-03:185, 03:188-03:190, 03:193, 03:195, 03:201-03:202, 03:206-03:207 and 03:209 alleles and the A*03:26 allele.

Change in revision R02 compared to R01:

1. Primer mix 11 does not amplify the A*80:03 allele. This has been corrected in the Specificity and Interpretation Tables.

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Well **64** contains Negative Control primer pairs, that will amplify more than 95% of the *Olerup* SSP® HLA Class I, DRB, DQB1, DPB1 and DQA1 amplicons as well as all the amplicons generated by the control primer pairs matching the human growth hormone gene.

HLA-specific PCR product sizes range from 75 to 200 base pairs.

The PCR product generated by the positive control primer pair is 430 base pairs.

| Length of PCR product | 105 | 200 | 105 | 80 | 75 | 80 | 85 |
|------------------------------|----------------------|-------------------------|----------------------|----------------------|----------------------|----------------------|----------------------|
| 5'-primer¹ | 164 | 340 | 440 | 45 | 45 | 43 | 36 |
| | 5'-CAC ^{3'} | 5'-Agg ^{3'} | 5'-TTA ^{3'} | 5'-Tgg ^{3'} | 5'-Tgg ^{3'} | 5'-Tgg ^{3'} | 5'-TAC ^{3'} |
| | | | | | | | 36 |
| | | | | | | | 5'-TAT ^{3'} |
| 3'-primer² | 231 | 2nd I | 507 | 59 | 58 | 57 | 47 |
| | 5'-TgC ^{3'} | 5'-AAA ^{3'} | 5'-TTg ^{3'} | 5'-CTC ^{3'} | 5'-ggC ^{3'} | 5'-CTC ^{3'} | 5'-ACA ^{3'} |
| | | | | | | | 48 |
| | | | | | | | 5'-gCA ^{3'} |
| | | | | | | | 48 |
| | | | | | | | 5'-gCC ^{3'} |
| | | | | | | | 52 |
| | | | | | | | 5'-TgT ^{3'} |
| A* | + | + | + | | | | |
| B* | + | + | + | | | | |
| C* | + | + | + | | | | |
| DRB1 | | | | + | + | | |
| DRB3 | | | | + | + | | |
| DRB5 | | | | + | | | |
| DQB1 | | | | | + | | |
| DPB1 | | | | | | + | |
| DQA1 | | | | | | | + |

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

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

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Lot-specific Information

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PRODUCT DESCRIPTION

HLA-A*03 SSP subtyping

CONTENT

The primer set contains 5'- and 3'-primers for identifying the A*03:01 to A*03:209 alleles.

PLATE LAYOUT

Each test consists of 64 PCR reactions in a 64 well PCR plate.

| | | | | | | | |
|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|
| 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
| 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 |
| 17 | 18 | 19 | 20 | 21 | 22 | 23 | 24 |
| 25 | 26 | 27 | 28 | 29 | 30 | 31 | 32 |
| 33 | 34 | 35 | 36 | 37 | 38 | 39 | 40 |
| 41 | 42 | 43 | 44 | 45 | 46 | 47 | 48 |
| 49 | 50 | 51 | 52 | 53 | 54 | 55 | 56 |
| 57 | 58 | 59 | 60 | 61 | 62 | 63 | NC |

The 64 well cut PCR plate is marked with ‘HLA-A*03’ in silver/gray ink.

Well No. 1 is marked with the Lot No. ‘14Y’.

Wells 1 to 63 – HLA-A*03 high resolution primers.

Well 64 – Negative Control (NC).

A faint row of numbers is seen between wells 1 and 2 or wells 7 and 8 of the PCR trays. These stem from the manufacture of the trays, and should be disregarded.

The PCR plates are covered with a PCR-compatible foil.

INTERPRETATION

Due to the sharing of sequence motifs between HLA-A alleles non-HLA-A*03 alleles will be amplified by primer mixes 1 to 4, 6, 8 to 12, 15 to 18, 21 to 26, 28 to 31, 33, 35, 37 to 39, 45 to 49, 51 to 53, 56, 58 and 61 to 63. In addition, a few HLA-C alleles will be amplified by primer mixes 46, 48 and 62.

For further details see Specificity Table.

UNIQUELY IDENTIFIED ALLELES

All the HLA-A*03 alleles, i.e. **A*03:01 to A*03:209**, recognized by the HLA Nomenclature Committee in January 2015^{1,2} will be amplified by the primers in the HLA-A*03 subtyping kit^{3,4}.

The HLA-A*03 kit enables separation of the confirmed HLA-A*03 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-A*03 alleles is listed below.

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The HLA-A*03 kit also enables identification of polymorphisms in exons outside of the region encoding the peptide binding domain and of null and alternatively expressed alleles.

The HLA-A*03 subtyping kit cannot distinguish following silent mutations: the A*03:01:01:01, 03:01:01:03, 03:01:03-03:01:05, 03:01:07, 03:01:09-03:01:11, 03:01:13, 03:01:15-03:01:22, 03:01:24-03:01:29 03:01:31-03:01:46, 03:01:49, 03:01:51 and 03:01:53 alleles, the A*03:01:02, 03:01:06, 03:01:14, 03:01:47 and 03:01:52 alleles, the A*03:01:12 and 03:01:23 alleles, the A*03:01:30, 03:01:48 and 03:01:50 alleles, the A*03:02:01-03:02:04 alleles, the *03:04:01-03:04:03 alleles, the *03:17:01-03:17:02 alleles, the A*03:22:01-03:22:02 alleles, the A*03:23:01-03:23:02 alleles, the A*03:44:01-03:44:02 and the A*03:123:01-03:123:02 alleles.

The following HLA-A*03 alleles can be distinguished by the different sizes of the HLA-specific PCR product:

| Alleles | Primer mix | Alleles | Primer mix |
|-----------------------------|------------|----------------------------|------------|
| A*03:16, 03:61 | 20 | A*03:38, 03:68N | 41 |
| A*03:17:01-03:17:02, 03:74 | 21 | A*03:44:01-03:44:02, 03:53 | 46 |
| A*03:20, 03:47 | 43 | A*03:78, 03:161N | 49 |
| A*03:22:01-03:22:02, 03:103 | 23 | A*03:118, 03:134 | 57 |
| A*03:25, 03:71 | 27 | A*03:128, 03:144 | 59 |
| A*03:27, 03:49 | 30 | A*03:132, 03:162N | 62 |
| A*03:33, 03:70 | 36 | | |

¹HLA-A alleles listed on the IMGT/HLA web page 2015-January-19, release 3.19.0, www.ebi.ac.uk/imgt/hla.

²Alleles 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>.

³The HLA-A*03 primer set cannot separate the A*03:05:02 and A*30:55 alleles. These alleles can be distinguished by the HLA-A low resolution kit and/or the HLA-A*30 high resolution kit.

The HLA-A*03 primer set cannot separate the A*03:95, 03:204 and A*74:13 alleles. These alleles can be distinguished by the HLA-A low resolution kit and/or the HLA-A*74 high resolution kit.

⁴This lot of the HLA-A*03 subtyping kit cannot distinguish the A*03:01:01:01, 03:01:01:03-03:01:01:05, 03:01:03-03:01:05, 03:01:07, 03:01:09-03:01:11, 03:01:13, 03:01:15-03:01:22, 03:01:24-03:01:29, 03:01:31-03:01:46, 03:01:49, 03:01:51, 03:01:53-03:01:56, 03:77, 03:80, 03:83, 03:85, 03:92, 03:94, 03:100-03:101, 03:110, 03:114-03:117, 03:119-03:121, 03:124-03:126, 03:131, 03:136-03:138, 03:141, 03:145-03:148, 03:151, 03:154-03:157:01, 03:158-03:159, 03:163-03:164, 03:166, 03:169-03:170, 03:174-03:175, 03:181, 03:183-03:185, 03:188-03:190, 03:193, 03:195, 03:201, 03:206-03:207, 03:209-03:210, 03:212, 03:214, 03:216-03:217, 03:222, 03:224, 03:226-03:228, 03:230, 03:232-03:233 alleles and the A*03:26 allele.

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ALLELE CONFIRMATION STATUS

| Allele | Status ¹ | Allele | Status ¹ | Allele | Status ¹ | Allele | Status ¹ |
|-----------------------|---------------------|-------------------|---------------------|-----------------|---------------------|--------------------|---------------------|
| A*03:01:01:01 | Confirmed | A*03:01:49 | Unconfirmed | A*03:38 | Confirmed | A*03:87 | Confirmed |
| A*03:01:01:02N | Confirmed | A*03:01:50 | Unconfirmed | A*03:39 | Unconfirmed | A*03:88 | Confirmed |
| A*03:01:01:03 | Unconfirmed | A*03:01:51 | Unconfirmed | A*03:40 | Unconfirmed | A*03:89 | Unconfirmed |
| A*03:01:02 | Unconfirmed | A*03:01:52 | Unconfirmed | A*03:41 | Unconfirmed | A*03:90 | Unconfirmed |
| A*03:01:03 | Confirmed | A*03:01:53 | Unconfirmed | A*03:42 | Unconfirmed | A*03:91N | Confirmed |
| A*03:01:04 | Confirmed | A*03:02:01 | Confirmed | A*03:43 | Unconfirmed | A*03:92 | Unconfirmed |
| A*03:01:05 | Confirmed | A*03:02:02 | Unconfirmed | A*03:44:01 | Unconfirmed | A*03:93 | Confirmed |
| A*03:01:06 | Confirmed | A*03:02:03 | Unconfirmed | A*03:44:02 | Unconfirmed | A*03:94 | Unconfirmed |
| A*03:01:07 | Unconfirmed | A*03:02:04 | Unconfirmed | A*03:45 | Unconfirmed | A*03:95 | Unconfirmed |
| A*03:01:08 | Unconfirmed | A*03:03N | Unconfirmed | A*03:46 | Unconfirmed | A*03:96 | Confirmed |
| A*03:01:09 | Unconfirmed | A*03:04:01 | Unconfirmed | A*03:47 | Confirmed | A*03:97 | Confirmed |
| A*03:01:10 | Unconfirmed | A*03:04:02 | Unconfirmed | A*03:48 | Confirmed | A*03:98 | Unconfirmed |
| A*03:01:11 | Confirmed | A*03:04:03 | Unconfirmed | A*03:49 | Confirmed | A*03:99 | Unconfirmed |
| A*03:01:12 | Confirmed | A*03:05:01 | Confirmed | A*03:50 | Confirmed | A*03:100 | Unconfirmed |
| A*03:01:13 | Unconfirmed | A*03:05:02 | Unconfirmed | A*03:51 | Confirmed | A*03:101 | Unconfirmed |
| A*03:01:14 | Confirmed | A*03:06 | Unconfirmed | A*03:52 | Unconfirmed | A*03:102 | Confirmed |
| A*03:01:15 | Confirmed | A*03:07 | Confirmed | A*03:53 | Confirmed | A*03:103 | Confirmed |
| A*03:01:16 | Confirmed | A*03:08 | Confirmed | A*03:54 | Unconfirmed | A*03:104 | Confirmed |
| A*03:01:17 | Confirmed | A*03:09 | Confirmed | A*03:55 | Unconfirmed | A*03:105 | Unconfirmed |
| A*03:01:18 | Confirmed | A*03:10 | Unconfirmed | A*03:56 | Confirmed | A*03:106 | Unconfirmed |
| A*03:01:19 | Confirmed | A*03:11N | Unconfirmed | A*03:57 | Confirmed | A*03:107 | Confirmed |
| A*03:01:20 | Confirmed | A*03:12 | Unconfirmed | A*03:58 | Unconfirmed | A*03:108 | Confirmed |
| A*03:01:21 | Confirmed | A*03:13 | Unconfirmed | A*03:59 | Unconfirmed | A*03:109 | Unconfirmed |
| A*03:01:22 | Unconfirmed | A*03:14 | Unconfirmed | A*03:60 | Unconfirmed | A*03:110 | Unconfirmed |
| A*03:01:23 | Unconfirmed | A*03:15 | Unconfirmed | A*03:61 | Unconfirmed | A*03:111 | Confirmed |
| A*03:01:24 | Unconfirmed | A*03:16 | Confirmed | A*03:62 | Confirmed | A*03:112 | Unconfirmed |
| A*03:01:25 | Unconfirmed | A*03:17:01 | Unconfirmed | A*03:63 | Confirmed | A*03:113 | Confirmed |
| A*03:01:26 | Unconfirmed | A*03:17:02 | Unconfirmed | A*03:64 | Unconfirmed | A*03:114 | Unconfirmed |
| A*03:01:27 | Unconfirmed | A*03:18 | Unconfirmed | A*03:65 | Confirmed | A*03:115 | Unconfirmed |
| A*03:01:28 | Confirmed | A*03:19 | Unconfirmed | A*03:66 | Confirmed | A*03:116 | Unconfirmed |
| A*03:01:29 | Unconfirmed | A*03:20 | Confirmed | A*03:67 | Unconfirmed | A*03:117 | Unconfirmed |
| A*03:01:30 | Confirmed | A*03:21N | Unconfirmed | A*03:68N | Confirmed | A*03:118 | Unconfirmed |
| A*03:01:31 | Unconfirmed | A*03:22:01 | Confirmed | A*03:69N | Confirmed | A*03:119 | Unconfirmed |
| A*03:01:32 | Unconfirmed | A*03:22:02 | Confirmed | A*03:70 | Unconfirmed | A*03:120 | Unconfirmed |
| A*03:01:33 | Confirmed | A*03:23:01 | Unconfirmed | A*03:71 | Unconfirmed | A*03:121 | Unconfirmed |
| A*03:01:34 | Confirmed | A*03:23:02 | Confirmed | A*03:72 | Unconfirmed | A*03:122 | Unconfirmed |
| A*03:01:35 | Unconfirmed | A*03:24 | Unconfirmed | A*03:73 | Unconfirmed | A*03:123:01 | Confirmed |
| A*03:01:36 | Unconfirmed | A*03:25 | Unconfirmed | A*03:74 | Confirmed | A*03:123:02 | Unconfirmed |
| A*03:01:37 | Unconfirmed | A*03:26 | Confirmed | A*03:75 | Unconfirmed | A*03:124 | Unconfirmed |
| A*03:01:38 | Confirmed | A*03:27 | Confirmed | A*03:76 | Confirmed | A*03:125 | Unconfirmed |
| A*03:01:39 | Unconfirmed | A*03:28 | Confirmed | A*03:77 | Unconfirmed | A*03:126 | Unconfirmed |
| A*03:01:40 | Unconfirmed | A*03:29 | Unconfirmed | A*03:78 | Unconfirmed | A*03:127 | Confirmed |
| A*03:01:41 | Unconfirmed | A*03:30 | Unconfirmed | A*03:79 | Confirmed | A*03:128 | Confirmed |
| A*03:01:42 | Unconfirmed | A*03:31 | Unconfirmed | A*03:80 | Unconfirmed | A*03:129N | Unconfirmed |
| A*03:01:43 | Confirmed | A*03:32 | Unconfirmed | A*03:81 | Confirmed | A*03:130 | Confirmed |
| A*03:01:44 | Unconfirmed | A*03:33 | Confirmed | A*03:82 | Unconfirmed | A*03:131 | Unconfirmed |
| A*03:01:45 | Unconfirmed | A*03:34 | Confirmed | A*03:83 | Unconfirmed | A*03:132 | Unconfirmed |
| A*03:01:46 | Unconfirmed | A*03:35 | Unconfirmed | A*03:84 | Confirmed | A*03:133 | Confirmed |
| A*03:01:47 | Unconfirmed | A*03:36N | Unconfirmed | A*03:85 | Unconfirmed | A*03:134 | Unconfirmed |
| A*03:01:48 | Unconfirmed | A*03:37 | Unconfirmed | A*03:86 | Confirmed | A*03:135 | Unconfirmed |

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| Allele | Status ¹ | Allele | Status ¹ | Allele | Status ¹ | Allele | Status ¹ |
|-----------------|---------------------|------------------|---------------------|-----------------|---------------------|-----------|---------------------|
| A*03:136 | Unconfirmed | A*03:156 | Unconfirmed | A*03:175 | Unconfirmed | A*03:195 | Unconfirmed |
| A*03:137 | Unconfirmed | A*03:157:01 | Unconfirmed | A*03:176 | Confirmed | A*03:196 | Unconfirmed |
| A*03:138 | Unconfirmed | A*03:157:02 | Unconfirmed | A*03:177 | Unconfirmed | A*03:197N | Unconfirmed |
| A*03:139 | Confirmed | A*03:158 | Unconfirmed | A*03:178N | Unconfirmed | A*03:198 | Unconfirmed |
| A*03:140 | Unconfirmed | A*03:159 | Unconfirmed | A*03:179 | Unconfirmed | A*03:199 | Unconfirmed |
| A*03:141 | Unconfirmed | A*03:160 | Unconfirmed | A*03:180 | Unconfirmed | A*03:200Q | Unconfirmed |
| A*03:142 | Unconfirmed | A*03:161N | Unconfirmed | A*03:181 | Unconfirmed | A*03:201 | Unconfirmed |
| A*03:143 | Confirmed | A*03:162N | Confirmed | A*03:182 | Unconfirmed | A*03:202 | Unconfirmed |
| A*03:144 | Confirmed | A*03:163 | Unconfirmed | A*03:183 | Unconfirmed | A*03:203 | Unconfirmed |
| A*03:145 | Unconfirmed | A*03:164 | Unconfirmed | A*03:184 | Unconfirmed | A*03:204 | Unconfirmed |
| A*03:146 | Unconfirmed | A*03:165 | Unconfirmed | A*03:185 | Unconfirmed | A*03:205 | Unconfirmed |
| A*03:147 | Unconfirmed | A*03:166 | Unconfirmed | A*03:186 | Unconfirmed | A*03:206 | Unconfirmed |
| A*03:148 | Unconfirmed | A*03:167 | Confirmed | A*03:187 | Unconfirmed | A*03:207 | Unconfirmed |
| A*03:149 | Confirmed | A*03:168N | Unconfirmed | A*03:188 | Unconfirmed | A*03:208 | Unconfirmed |
| A*03:150 | Confirmed | A*03:169 | Unconfirmed | A*03:189 | Unconfirmed | A*03:209 | Unconfirmed |
| A*03:151 | Unconfirmed | A*03:170 | Unconfirmed | A*03:190 | Unconfirmed | | |
| A*03:152 | Unconfirmed | A*03:171 | Unconfirmed | A*03:191 | Confirmed | | |
| A*03:153 | Unconfirmed | A*03:172 | Unconfirmed | A*03:192N | Unconfirmed | | |
| A*03:154 | Unconfirmed | A*03:173 | Unconfirmed | A*03:193 | Unconfirmed | | |
| A*03:155 | Unconfirmed | A*03:174 | Unconfirmed | A*03:194 | Unconfirmed | | |

¹Allele status “confirmed” or “unconfirmed” as listed on the IMGT/HLA web page 2015-January-19, release 3.19.0, www.ebi.ac.uk/imgt/hla.

RESOLUTION IN HOMO- AND HETEROZYGOTES

Results file with resolution in HLA-A*03 homo- and heterozygotes is available upon request.

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Lot-specific Information

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SPECIFICITY TABLE

HLA-A*03 SSP subtyping

Specificities and sizes of the PCR products of the 63+1 primer mixes used for HLA-A*03 SSP subtyping

| Primer Mix | Size of spec. PCR product ¹ | Size of control band ² | Amplified HLA-A*03 alleles ³ | Other amplified HLA-A alleles ⁴ |
|----------------|--|-----------------------------------|--|---|
| 1 | 235 bp | 800 bp | *03:01:01:01-03:01:29, 03:01:31-03:01:47, 03:01:49, 03:01:51-03:04:03, 03:06-03:09, 03:11N-03:17:02, 03:19-03:39, 03:41, 03:43-03:74, 03:76-03:94, 03:96-03:97, 03:99-03:104, 03:106-03:121, 03:123:01-03:134, 03:136-03:166, 03:168N-03:176, 03:178N-03:186, 03:188-03:203, 03:205-03:207, 03:209 | *11:130, 30:89, 32:04, 36:02 |
| 2 ⁶ | 225 bp | 1070 bp | *03:01:01:01-03:01:11, 03:01:12 ^w , 03:01:13-03:01:22, 03:01:23 ^w , 03:01:24-03:07, 03:09-03:11N, 03:13-03:31, 03:33-03:35, 03:37-03:40, 03:42-03:56, 03:58, 03:60-03:71, 03:73-03:87, 03:90-03:106, 03:109-03:110, 03:112-03:141, 03:143-03:148, 03:150-03:151, 03:153-03:171, 03:174-03:175, 03:177, 03:181-03:195, 03:197N, 03:200Q-03:202, 03:204, 03:206-03:209 | *01:13, 02:34 ^w -02:35:03 ^w , 02:56:01 ^w -02:56:02 ^w , 02:62 ^w , 02:103 ^w , 11:199, 30:55, 34:08, 68:71, 74:13 |
| 3 ⁶ | 205 bp | 1070 bp | *03:01:01:01-03:01:01:03, 03:01:03-03:01:05, 03:01:07-03:01:13, 03:01:15-03:01:46, 03:01:48-03:01:51, 03:01:53, 03:03N-03:05:01, 03:06, 03:08-03:09, 03:11N-03:17:02, 03:19-03:30, 03:33-03:41, 03:43-03:49, 03:51-03:53, 03:55-03:63, 03:67-03:72, 03:74, 03:77-03:81, 03:83-03:89, 03:91N-03:94, 03:96-03:105, 03:107-03:112, 03:114-03:126, 03:128-03:132, 03:134, 03:136-03:139, 03:141-03:152, 03:154-03:159, 03:161N-03:164, 03:166, 03:168N-03:170, 03:172-03:176, 03:178N-03:186, 03:188-03:197N, 03:199, 03:201-03:203, 03:205-03:209 | *11:25, 30:89, 32:04, 34:02:01, 34:02:03-34:04, 34:07-34:10N |
| 4 | 215 bp | 800 bp | *03:02:01-03:02:04, 03:10, 03:31-03:32, 03:65, 03:69N, 03:73, 03:76, 03:82, 03:90, 03:106, 03:113, 03:160, 03:167, 03:198 | *01:12, 01:19, 01:25, 01:127, 01:136, 11:01:01:01-11:01:56, 11:01:58-11:07, 11:09-11:22, 11:27, 11:29-11:30, 11:32-11:34, 11:36-11:43, 11:45-11:49, 11:51-11:52Q, 11:54-11:93, 11:95-11:100, 11:102-11:117, 11:119:01-11:138, |

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|----------------------|--------|--------------------------|--|---|
| | | | | 11:140-11:142, 11:144-11:157, 11:159-11:182Q, 11:184-11:190, 11:192-11:210N, 24:51, 24:92 |
| 5 | 185 bp | 800 bp | *03:03N | |
| 6 | 275 bp | 1070 bp | *03:04:01-03:04:03 | *01:86, 11:153:01-11:153:02, 30:34 |
| 7 | 225 bp | 1070 bp | *03:06, 03:69N | |
| 8 | 240 bp | 1070 bp | *03:01:01:01-03:01:07, 03:01:09-03:11N, 03:13-03:40, 03:42-03:56, 03:58-03:87, 03:89-03:106, 03:108, 03:110-03:151, 03:153-03:172, 03:174-03:209 | *01:13, 01:28, 02:01:01:01-02:01:15, 02:01:17-02:01:19, 02:01:21-02:01:48, 02:01:50-02:01:81, 02:01:83-02:01:100, 02:01:102-02:01:105, 02:01:107, 02:01:109-02:04, 02:07:01-02:07:07, 02:09, 02:11:01-02:13, 02:15N-02:20:02, 02:22:01-02:22:02, 02:24:01-02:27, 02:29-02:40:02, 02:42-02:43N, 02:45-02:50, 02:52-02:53N, 02:55-02:56:02, 02:58-02:60:02, 02:62-02:71, 02:73-02:77, 02:80, 02:82N-02:83N, 02:85-02:86, 02:88N-02:90, 02:92-02:97:02, 02:101:01-02:105, 02:107, 02:109-02:111, 02:113:01N-02:121, 02:123, 02:125N, 02:128, 02:130-02:135, 02:138-02:141, 02:145, 02:147-02:153:02, 02:155-02:168, 02:171:01-02:171:02, 02:173-02:177, 02:181-02:183, 02:185-02:228, 02:230-02:231, 02:233-02:243:02, 02:245-02:246, 02:249-02:258, 02:260-02:270, 02:272-02:277, 02:279-02:285, 02:287-02:289:02, 02:291-02:294, 02:296-02:299, 02:301N-02:309, 02:311-02:323, 02:325-02:327, 02:329, 02:332, 02:334-02:336, 02:338-02:343, 02:345-02:354, 02:356N-02:357, 02:360-02:372, 02:374-02:375, 02:377-02:381, 02:383-02:386, 02:388-02:397, 02:399-02:403, 02:406-02:408, 02:410-02:412, 02:414, 02:416-02:418, 02:422-02:427, 02:429-02:432, 02:434-02:437, 02:439N-02:442, 02:444-02:452, 02:455-02:464, 02:466-02:469, 02:477-02:483, 02:485-02:488, 02:490N-02:492, 02:494, 02:498-02:505, 02:508-02:526, 02:528-02:531, 02:533-02:545, 02:547-02:548, 02:551-02:555, 11:43, 11:88, 11:199, 24:19, 24:28, 24:44, 24:89, 24:290, 29:19, 29:39, 29:48, 30:01:01-30:01:10, 30:11:01-30:11:02, 30:13-30:20, 30:23-30:24, 30:26, 30:30-30:31, 30:35-30:44, 30:46, 30:48-30:49, 30:52-30:56, 30:58-30:60, 30:62-30:63, 30:65, 30:71-30:75, 30:78N-30:79, 30:81-30:83, 30:86-30:87, 30:89, 30:91-30:93, 31:01:02:01-31:01:05, 31:01:07-31:06, 31:09, 31:11-31:32, 31:34-31:73, 31:75-31:78, 31:80-31:89, 33:01:01-33:01:07, 33:03:01-33:03:05, 33:03:07-33:12, 33:14-33:16, 33:18:01-33:37, 33:39-33:47, 33:49-33:50, 33:52-33:64, 33:66-33:68, 33:70-33:95, 34:08, 68:29, 68:45, 68:71, 68:117, 74:01-74:09, 74:11-74:18, 74:20-74:23, 80:02 |
| 9^o | 230 bp | 1070 bp | *03:05:01-03:05:02, 03:10, 03:42, 03:72, 03:187 | *02:156, 02:338, 11:04, 11:35, 11:88, 24:19, 24:290, 30:01:01-30:04:02, 30:06-30:20, 30:22-30:27N, 30:29-30:44, 30:46, 30:48-30:79, 30:81-30:93, 31:03-31:04, 33:49, 34:02:01-34:04, |

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| | | | | 34:07-34:10N, 36:01, 36:05, 68:45, 68:103:01-68:103:02, 68:117, 74:23 |
| 10⁵ | 65 bp 205 bp | 800 bp | *03:60 *03:02:01-03:02:04, 03:07, 03:10, 03:31-03:32, 03:42, 03:73, 03:76, 03:82, 03:90, 03:106, 03:113, 03:133, 03:160, 03:171, 03:198 | *01:12, 01:19, 01:21, 01:126, 02:156, 02:338, 11:31, 11:35, 11:60, 11:158, 11:183, 11:209, 24:92, 30:04:01-30:04:02, 30:06, 30:09, 30:17, 30:29, 30:46, 30:77, 30:90, 31:03-31:04, 33:49, 68:103:01-68:103:02, 74:23 |
| 11 | 225 bp | 800 bp | *03:08, 03:32, 03:41, 03:107, 03:176 | *01:01:01:01-01:01:31, 01:01:33-01:01:46, 01:01:48-01:01:61, 01:01:63-01:01:68, 01:03- 01:04N, 01:06, 01:08-01:12, 01:14-01:16N, 01:18N-01:19, 01:21-01:33, 01:35-01:42, 01:44- 01:94, 01:96-01:103, 01:105-01:107, 01:109- 01:133, 01:135-01:142, 01:144-01:161, 01:163- 01:170, 02:48, 02:81, 02:90, 02:124, 02:146, 25:03, 25:30, 26:20, 32:01:01-32:01:14, 32:01:16-32:02, 32:03 ^w , 32:04-32:06, 32:08 ^w , 32:09-32:16, 32:18-32:26, 32:28-32:41, 32:43- 32:63, 32:65-32:66, 32:68-32:69, 36:01-36:05, 74:01-74:04, 74:08-74:12N, 74:14N-74:18, 74:20, 74:22-74:23, 80:01:01:01 ^w -80:01:01:02 ^w , 80:02 |
| 12 | 190 bp | 1070 bp | *03:09, 03:108, 03:172, 03:198 | *01:134, 02:01:09, 02:05:05, 02:06:07, 02:50, 02:76:02, 02:122, 02:243:02, 11:06, 11:18, 24:28, 24:89, 26:03:01-26:03:02, 26:06, 26:21, 26:30, 26:78, 26:92, 29:19, 29:48, 33:24, 68:05, 68:15, 68:20, 74:06, 74:21 |
| 13 | 145 bp | 800 bp | *03:01:01:02N | |
| 14⁵ | 105 bp 235 bp | 1070 bp | *03:11N *03:59 | |
| 15 | 225 bp | 1070 bp | *03:12, 03:88 | *02:78, 11:01:01:01-11:01:50, 11:01:52- 11:02:01, 11:02:02 ^w , 11:02:03-11:05, 11:06 ^w , 11:07-11:16, 11:20-11:27, 11:29-11:39, 11:41- 11:42, 11:44, 11:46, 11:48-11:52Q, 11:54-11:77, 11:79-11:87, 11:89-11:91:02, 11:93-11:97, 11:99N-11:105, 11:107-11:110, 11:112-11:120, 11:122-11:160, 11:162-11:177, 11:179-11:189, 11:191-11:198, 11:200-11:211, 30:08, 34:01:01- 34:07, 34:09-34:12, 66:01:01-66:02, 66:04, 66:06-66:10, 66:12-66:14, 66:16-66:21, 68:01:01:01-68:02:08, 68:06-68:14, 68:16-68:19, 68:21:01-68:28, 68:30, 68:32-68:35, 68:37- 68:44, 68:47-68:56, 68:58-68:70, 68:72-68:83, 68:85-68:89, 68:91-68:108, 68:110-68:116, 68:118-68:127, 69:01-69:03 |
| 16 | 275 bp | 1070 bp | *03:14 | *02:450 |
| 17^{6,7} | 215 bp | 800 bp | *03:01:01:01-03:01:53, 03:03N- 03:09, 03:11N-03:17:02, 03:19- 03:30, 03:33-03:49, 03:51-03:64, 03:67-03:68N, 03:70-03:72, 03:74, 03:77-03:81, 03:83-03:89, 03:91N-03:94, 03:96-03:105, 03:107-03:112, 03:114-03:134, 03:136-03:152, 03:154-03:159, 03:161N-03:166, 03:168N-03:176, | *01:06, 02:156, 02:338, 11:24:01-11:25, 11:31, 11:35, 11:158, 30:01:01-30:03, 30:07-30:16, 30:18-30:20, 30:22-30:27N, 30:30-30:45, 30:48- 30:51, 30:53-30:62, 30:64-30:71, 30:73N- 30:76N, 30:78N-30:79, 30:81-30:89, 30:91- 30:93, 31:03-31:04, 32:04, 33:49, 34:02:01- 34:04, 34:07-34:10N, 74:23, 80:01:01:01-80:03 |

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|-------------------------|---------------------------|--------------------------|---|---|
| | | | 03:178N-03:186, 03:188-03:197N, 03:199, 03:201-03:203, 03:205- 03:207, 03:209 | |
| 18⁶ | 135 bp 215 bp | 1070 bp | *03:13 *03:50, 03:64, 03:66, 03:200Q | *01:98, 11:08, 11:44, 11:183, 11:191, 30:04:01- 30:04:02, 30:06, 30:17, 30:29, 30:46, 30:77, 30:90, 36:02, 68:103:01-68:103:02 |
| 19⁷ | 240 bp | 1070 bp | *03:15, 03:19, 03:84 | |
| 20⁵ | 60 bp 185 bp | 1070 bp | *03:61 *03:16, 03:79 | |
| 21 | 140 bp | 1070 bp | *03:17:01-03:17:02, 03:102, 03:171 | *01:88, 02:156, 02:338, 11:119:01-11:119:02, 11:209, 24:51, 24:92, 30:61, 30:74, 68:103:01- 68:103:02 |
| 22⁵ | 195 bp 90 bp 250 bp | 1070 bp | *03:74 *03:191 *03:18, 03:97, 03:122, 03:135, 03:167 | *11:59 *01:01:01:01-01:01:01:65, 01:01:67-01:02, 01:04N, 01:06-01:19, 01:21-01:33, 01:35-01:62, 01:64- 01:65, 01:67:01-01:71, 01:74-01:101, 01:103- 01:129, 01:131-01:166, 01:168-01:170, 11:27, 11:38-11:39, 11:94, 11:209, 24:51, 24:92, 30:75, 80:01:01:01-80:03 |
| 23⁵ | 95 bp 185 bp 210 bp | 1070 bp | *03:22:01-03:22:02 *03:19, 03:103 *03:56, 03:88, 03:99, 03:177, 03:186 | *32:52 *02:237, 24:18, 24:204, 24:213, 32:52 *11:130, 32:52, 36:02 |
| 24 | 240 bp 470 bp | 1070 bp | *03:75 *03:21N | *24:18, 24:204, 24:213 *01:04N, 11:21N, 23:07N, 24:11N |
| 25 | 155 bp | 1070 bp | *03:23:01-03:23:02, 03:198 | *01:83:01-01:83:02, 02:01:09, 02:05:05, 02:06:07, 02:11:02, 02:35:03, 02:50, 02:76:02, 02:122, 02:243:02, 11:70:02, 11:121, 24:08, 24:42, 24:89, 26:07:01-26:07:02, 26:92, 29:48, 33:08, 74:04, 74:21 |
| 26 | 190 bp | 1070 bp | *03:24, 03:93 | *01:51, 25:03, 25:30, 32:15, 32:37, 34:08, 68:71 |
| 27⁵ | 95 bp 145 bp 240 bp | 1070 bp | *03:71 *03:25 *03:149 | |
| 28^{5,8} | 85 bp 495 bp | 1070 bp | *03:41, 03:63, 03:88 | *11:130, 36:02 |
| 29⁵ | 100 bp | 1070 bp | *03:01:01:01-03:07, 03:09-03:28, 03:30-03:31, 03:33, 03:35, 03:37- 03:40, 03:42-03:61, 03:64-03:87, 03:90-03:106, 03:109-03:151, 03:153-03:171, 03:173-03:175, 03:177-03:197N, 03:199-03:209 | *02:34-02:35:03, 02:56:01-02:56:02, 02:62, 02:78, 02:103, 11:12, 23:13, 24:07:01-24:07:02, 24:24, 24:108, 24:112, 24:131, 24:288, 24:290, 24:294Q, 29:01:01:01-29:18, 29:21-29:29, 29:31-29:33, 29:35-29:47, 29:49-29:65, 29:67- 29:73, 29:75-29:76, 30:01:01-30:01:10, 30:08, 30:11:01-30:11:02, 30:14L-30:20, 30:23-30:26, 30:30, 30:35-30:43, 30:48-30:49, 30:52-30:56, 30:58-30:60, 30:62-30:63, 30:65, 30:71-30:75, 30:78N-30:79, 30:81-30:83, 30:86-30:89, 30:91- 30:93, 31:89, 32:17, 34:09, 66:02, 66:12, 66:16, 66:21, 68:01:01:01-68:01:17, 68:01:19-68:02:08, 68:06-68:14, 68:16-68:19, 68:21:01-68:30, 68:32-68:39, 68:41-68:71, 68:73-68:84, 68:86- 68:89, 68:91-68:92, 68:94N-68:96, 68:98- 68:108, 68:110-68:127, 69:01, 69:03, 74:13 |

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| | | | | |
|-------------------------|-------------------------------------|---------------|---|--|
| 30 | 140 bp 210 bp | 1070 bp | *03:27, 03:102 *03:49, 03:139, 03:194, | *01:157 |
| 31⁷ | 190 bp 220 bp | 800 bp | *03:143 *03:28, 03:56, 03:88, 03:99, 03:177, 03:186 | *11:130, 32:52, 36:02 |
| 32 | 150 bp 220 bp 270 bp | 1070 bp | *03:67 *03:29 *03:91N | |
| 33 | 180 bp 210 bp 285 bp | 1070 bp | *03:93 *03:30, 03:152 *03:62 | *32:37, 80:01:01:01 ^w -80:03 ^w *23:64, 24:104, 32:05 *01:144 |
| 34⁵ | 125 bp 160 bp | 1070 bp | *03:58 *03:31 | |
| 35 | 235 bp 275 bp | 1070 bp | *03:32 *03:55 | *31:21, 74:07 |
| 36⁵ | 120 bp 160 bp 210 bp | 1070 bp | *03:81 *03:33 *03:70 | |
| 37⁵ | 95 bp 120 bp 225 bp | 1070 bp | *03:48, 03:168N *03:81 *03:34 | *02:525N |
| 38 | 170 bp 195 bp 250 bp | 800 bp | *03:35, 03:130 *03:79, 03:192N *03:73 | *01:167 |
| 39 | 200 bp 235 bp | 1070 bp | *03:36N, 03:182 *03:45 | *01:109, 11:100, 11:175 *30:77 |
| 40 | 240 bp | 1070 bp | *03:37 | |
| 41 | 185 bp 275 bp | 1070 bp | *03:38, 03:192N *03:68N | |
| 42⁷ | 190 bp 220 bp 245 bp | 800 bp | *03:143 *03:39 *03:84 | |
| 43 | 150 bp 260 bp | 1070 bp | *03:20 *03:47, 03:76 | |
| 44 | 170 bp 240 bp | 1070 bp | *03:51, 03:130 *03:40 | |
| 45 | 150 bp 270 bp | 1070 bp | *03:43, 03:186 *03:91N | *30:89 |
| 46^{5,8} | 110 bp 190 bp | 1070 bp | *03:44:01-03:44:02, 03:52 *03:53 | *02:164, 02:380, 30:69, 31:19 *30:30, 31:69, C*07:35, C*07:352, C*08:48 |
| 47⁶ | 240 bp | 1070 bp | *03:41, 03:57, 03:107 | *01:01:01:01-01:01:01:03, 01:01:05-01:01:12, 01:01:14-01:01:28, 01:01:30-01:01:31, 01:01:33- 01:01:34, 01:01:36-01:01:49, 01:01:51-01:01:68, 01:03-01:04N, 01:06, 01:08-01:12, 01:14-01:19, 01:21-01:23, 01:25-01:27N, 01:29-01:33, 01:35- 01:42, 01:44-01:94, 01:96-01:112, 01:114- 01:133, 01:135-01:142, 01:144-01:157, 01:159- 01:170, 36:01-36:05, 74:10, 80:01:01:01- 80:01:01:02, 80:03 |
| 48^{5,8} | 70 bp 110 bp 145 bp 190 bp | 1070 bp | *03:54 *03:52 *03:46 *03:197N | *02:380, 31:19 C*07:86 *02:314N, 32:48N, C*07:55N |

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| | | | | |
|-------------------------|------------------|---------------|--|--|
| 49 | 195 bp 545 bp | 1070 bp | *03:161N *03:78 | *01:45, 02:453, 11:108, 24:271, 66:17 |
| 50 | 130 bp | 1070 bp | *03:86 | |
| 51^{6,7} | 215 bp | 1070 bp | *03:50 | *11:183, 11:191, 30:04:01-30:04:02, 30:06, 30:17, 30:29, 30:46, 30:77, 30:90, 68:103:01- 68:103:02 |
| | 285 bp | | *03:87 | *01:101, 11:30, 30:92 |
| 52⁵ | 90 bp 215 bp | 1070 bp | *03:96, 03:168N *03:152, 03:172, 03:176, 03:198 | *01:83:01-01:83:02, 02:01:02, 02:50, 23:64, 24:104, 32:05, 32:31, 74:04, 74:21 |
| 53 | 225 bp 260 bp | 800 bp | *03:150, 03:153 *03:104 | *33:49 |
| 54 | 240 bp | 1070 bp | *03:111, 03:178N | |
| 55 | 175 bp | 800 bp | *03:112 | |
| 56 | 205 bp | 1070 bp | *03:113, 03:157:02, 03:182 | *01:109, 11:100, 11:175 |
| 57⁸ | 180 bp 275 bp | 1070 bp | *03:134 *03:118 | |
| 58⁶ | 205 bp 225 bp | 1070 bp | *03:127 *03:150, 03:153, 03:200Q | *01:06, 11:24:02 |
| 59⁵ | 105 bp 240 bp | 1070 bp | *03:144 *03:128, 03:178N | |
| 60⁷ | 390 bp | 1070 bp | *03:129N | |
| 61 | 225 bp | 1070 bp | *03:18, 03:97, 03:122, 03:135, 03:167 | *02:19, 02:36-02:37, 02:54, 02:255, 02:417, 23:01:01-23:03:02, 23:05-23:15, 23:17-23:30, 23:32-23:41, 23:44, 23:46-23:54, 23:56-23:69, 24:02:01:01-24:02:04, 24:02:06-24:02:28, 24:02:30-24:02:69, 24:02:71-24:02:91, 24:04- 24:09N, 24:11N, 24:13:01-24:14, 24:17, 24:19- 24:21:02, 24:24-24:32, 24:34-24:40N, 24:42- 24:50, 24:52-24:64, 24:66-24:74:02, 24:76- 24:91, 24:93, 24:95-24:117, 24:119-24:124, 24:126-24:131, 24:133-24:137, 24:139-24:166, 24:168-24:203, 24:205-24:206, 24:208-24:209, 24:212-24:218, 24:220-24:234, 24:236-24:260, 24:262-24:288, 24:290-24:291, 24:293-24:294Q, 29:03, 30:75, 31:05, 33:10, 33:19, 68:26, 68:65, 68:115, 80:01:01:01-80:03 |
| 62 | 190 bp 375 bp | 1070 bp | *03:132, 03:197N *03:162N | *02:314N, 32:48N, C*07:55N |
| 63 | 175 bp | 800 bp | *03:123:01-03:123:02, 03:171 | *02:156, 02:338, 11:16, 11:35, 11:57, 11:73, 11:158, 68:103:01-68:103:02 |
| | 205 bp | | *03:42, 03:133, 03:139 | *30:09, 31:03-31:04, 33:49, 74:23 |
| 64¹⁰ | | | Negative Control | |

¹Alleles 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-A*03 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.

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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.

²The 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.

³For 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.

⁴Due to the sharing of sequence motifs between HLA-A alleles non-HLA-A*03 alleles will be amplified by primer mixes 1 to 4, 6, 8 to 12, 15 to 18, 21 to 26, 28 to 31, 33, 35, 37 to 39, 45 to 49, 51 to 53, 56, 58 and 61 to 63. In addition, a few HLA-C alleles will be amplified by primer mixes 46, 48 and 62.

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

⁶Primer mix 2, 3, 17, 18, 47, 51 and 58 may give rise to a lower yield of HLA-specific PCR product than the other A*03 primer mixes.

⁷Primer mixes 17, 19, 31, 42, 51 and 60 may have tendencies of unspecific amplifications.

⁸Primer mixes 28, 46, 48 and 57 have a tendency to giving rise to primer oligomer formation.

⁹Primer mix 9 may give rise to a long unspecific amplification product of approximately 750 bp. This should be disregarded when interpreting the A*03 typings.

¹⁰Primer mix 64 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 | 235 | 225 | 205 | 215 | 185 | 275 | 225 | 240 | 230 | 65 | 225 | 190 |
| | | | | | | | | | | 205 | | |
| Length of int. pos. control ¹ | 800 | 1070 | 1070 | 800 | 800 | 1070 | 1070 | 1070 | 1070 | 800 | 800 | 1070 |
| 5'-primer(s) ² | 363 5'-ATA 3' | 98 5'-CTT 3' | 363 5'-ATA 3' | 363 5'-ATA 3' | 382 5'-Tgg 3' | 363 5'-ATA 3' | 363 5'-ATA 3' | 102 5'-ACA 3' | 98 5'-CTC 3' | 363 5'-ATA 3' | 98 5'-CTT 3' | 144 5'-gCC 3' |
| | 363 5'-ATA 3' | | 363 5'-ATA 3' | | | | | 102 5'-ACA 3' | 363 5'-ATA 3' | | | |
| 3'-primer(s) ³ | 555 5'-CCA 3' | 282 5'-gAC 3' | 527 5'-CCT 3' | 539 5'-TCT 3' | 527 5'-CCT 3' | 595 5'-CCg 3' | 538 5'-CTA 3' | 299 5'-CCA 3' | 282 5'-gAC 3' | 388 5'-gAT 3' | 282 5'-gAg 3' | 292 5'-gTg 3' |
| | 555 5'-CCA 3' | 282 5'-gAC 3' | | | | 595 5'-CCT 3' | 538 5'-Tgg 3' | 299 5'-CCA 3' | 282 5'-CCC 3' | 388 5'-CCA 3' | 282 5'-gAg 3' | |
| | 557 5'-Tgg 3' | | | | | | | | | 527 5'-CCA 3' | 282 5'-gAg 3' | |
| Well No. | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 |

| Well No. | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 | 21 | 22 | 23 | 24 |
|--|--------------------------------|------------------|------------------|------------------|------------------|------------------|------------------|------------------|------------------|------------------|------------------|--------------------------------|
| Length of spec. PCR product | 145 | 105 | 225 | 275 | 215 | 135 | 240 | 60 | 140 | 90 | 95 | 470 |
| | | 235 | | | | 215 | | 185 | 195 | 250 | 185 | |
| | | | | | | | | | | | 210 | |
| | | | | | | | | | | | 240 | |
| Length of int. pos. control ¹ | 800 | 1070 | 1070 | 1070 | 800 | 1070 | 1070 | 1070 | 1070 | 1070 | 1070 | 1070 |
| 5'-primer(s) ² | 4 th I 5'-ggA 3' | 28 5'-TCC 3' | 98 5'-CTA 3' | 98 5'-CTT 3' | 363 5'-ATA 3' | 363 5'-ATA 3' | 350 5'-TCg 3' | 363 5'-ATA 3' | 363 5'-ATA 3' | 363 5'-ATA 3' | 355 5'-CCC 3' | 3 rd I 5'-ATA 3' |
| | | 363 5'-ATA 3' | | | 363 5'-ATA 3' | | 368 5'-gTT 3' | | | | 385 5'-ggC 3' | |
| | | | | | | | | | | | 413 5'-CCA 3' | |
| | | | | | | | | | | | 502 5'-CCC 3' | |
| 3'-primer(s) ³ | 899 5'-ACA 3' | 92 5'-AAC 3' | 282 5'-gAC 3' | 333 5'-CTg 3' | 539 5'-TCA 3' | 455 5'-CCA 3' | 555 5'-CCA 3' | 382 5'-CCT 3' | 453 5'-TCT 3' | 412 5'-CCC 3' | 555 5'-CCA 3' | 621 5'-ggg 3' |
| | | 426 5'-TCT 3' | | | | 528 5'-gCg 3' | | 496 5'-gAA 3' | 453 5'-TCC 3' | 570 5'-CCg 3' | | |
| | | | | | | 539 5'-TCC 3' | | 518 5'-CCA 3' | 479 5'-CCC 3' | | | |
| | | | | | | 540 5'-..C 3' | | | 518 5'-CCT 3' | | | |
| Well No. | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 | 21 | 22 | 23 | 24 |

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| Well No. | 25 | 26 | 27 | 28 | 29 | 30 | 31 | 32 | 33 | 34 | 35 | 36 |
|--|-----------|-----------|-----------|-----------|-----------|-----------|------------|-----------|-----------|-----------|-----------|-----------|
| Length of spec. | 155 | 190 | 95 | 85 | 100 | 140 | 190 | 150 | 180 | 125 | 235 | 120 |
| PCR product | | | 145 | 495 | | 210 | 220 | 220 | 210 | 160 | 275 | 160 |
| | | | 240 | | | | | 270 | 285 | | | 210 |
| Length of int. pos. control ¹ | 1070 | 1070 | 1070 | 1070 | 1070 | 1070 | 800 | 1070 | 1070 | 1070 | 1070 | 1070 |
| 5'-primer(s) ² | 144 | 98 | 83 | 341 | 282 | 363 | 365 | 98 | 98 | 98 | 98 | 98 |
| | 5'-gCC 3' | 5'-CTT 3' | 5'-CTg 3' | 5'-ggA 3' | 5'-CAG 3' | 5'-ATA 3' | 5'-AAC 3' | 5'-CTT 3' | 5'-CTT 3' | 5'-CTT 3' | 5'-CTT 3' | 5'-CTT 3' |
| | | | 179 | 831 | 282 | | 385 | | | 418 | | |
| | | | 5'-gTg 3' | 5'-gAg 3' | 5'-CAG 3' | | 5'-ggC 3' | | | 5'-AgT 3' | | |
| | | | 228 | | | | 406 | | | | | |
| | | | 5'-ATg 3' | | | | 5'-gCC 3' | | | | | |
| 3'-primer(s) ³ | 256 | 239 | 282 | 555 | 341 | 454 | 555 | 206 | 239 | 181 | 290 | 175 |
| | 5'-CCC 3' | 5'-gCT 3' | 5'-gAC 3' | 5'-CCA 3' | 5'-Cgg 3' | 5'-CTg 3' | 5'-CCA 3' | 5'-CCg 3' | 5'-gCT 3' | 5'-gTT 3' | 5'-CAA 3' | 5'-CCC 3' |
| | | 259 | | 873 | | 479 | | 278 | 265 | 539 | 330 | 217 |
| | | 5'-gTT 3' | | 5'-TCg 3' | | 5'-CCC 3' | | 5'-ggA 3' | 5'-CCC 3' | 5'-TCT 3' | 5'-TgT 3' | 5'-CgA 3' |
| | | | | | | 526 | | 327 | 343 | | | 265 |
| | | | | | | 5'-CTT 3' | | 5'-TTT 3' | 5'-T 3' | | | 5'-CCA 3' |
| | | | | | | 533 | | | | | | |
| | | | | | | 5'-gCC 3' | | | | | | |
| Well No. | 25 | 26 | 27 | 28 | 29 | 30 | 31 | 32 | 33 | 34 | 35 | 36 |

| Well No. | 37 | 38 | 39 | 40 | 41 | 42 | 43 | 44 | 45 | 46 | 47 | 48 |
|--|-----------|------------|-----------|-----------|-----------|------------|-----------|-----------|-----------|-----------|-----------|-----------|
| Length of spec. | 95 | 170 | 200 | 240 | 185 | 190 | 150 | 170 | 150 | 110 | 240 | 70 |
| PCR product | 120 | 195 | 235 | | 275 | 220 | 260 | 240 | 270 | 190 | | 110 |
| | | 225 | 250 | | | 245 | | | | | | 145 |
| | | | | | | | | | | | | 190 |
| Length of int. pos. control ¹ | 1070 | 800 | 1070 | 1070 | 1070 | 800 | 1070 | 1070 | 1070 | 1070 | 1070 | 1070 |
| 5'-primer(s) ² | 98 | 363 | 98 | 801 | 98 | 350 | 98 | 363 | 98 | 410 | 98 | 411 |
| | 5'-CTT 3' | 5'-ATA 3' | 5'-CTT 3' | 5'-AAC 3' | 5'-CTT 3' | 5'-TCg 3' | 5'-CTT 3' | 5'-ATA 3' | 5'-CTT 3' | 5'-gTg 3' | 5'-CTT 3' | 5'-TAg 3' |
| | | | 650 | | 363 | 376 | 890 | | 418 | 484 | | 457 |
| | | | 5'-CCC 3' | | 5'-ATA 3' | 5'-gCT 3' | 5'-gAA 3' | | 5'-AgC 3' | 5'-ACT 3' | | 5'-AgC 3' |
| | | | | | | 406 | | | | 484 | | 488 |
| | | | | | | 5'-gCC 3' | | | | 5'-ACC 3' | | 5'-ggT 3' |
| | | | | | | | | | | 488 | | 530 |
| | | | | | | | | | | 5'-ggT 3' | | 5'-ggT 3' |
| 3'-primer(s) ³ | 152 | 487 | 259 | 899 | 331 | 555 | 316 | 486 | 327 | 559 | 299 | 559 |
| | 5'-Cgg 3' | 5'-Cgg 3' | 5'-CTC 3' | 5'-ACA 3' | 5'-CTA 3' | 5'-CCA 3' | 5'-gCT 3' | 5'-gCg 3' | 5'-TTT 3' | 5'-CgT 3' | 5'-TCg 3' | 5'-CgT 3' |
| | 153 | 490 | 806 | | 506 | | 899 | 490 | 527 | | | |
| | 5'-ACT 3' | 5'-AgT 3' | 5'-CCA 3' | | 5'-Tgg 3' | | 5'-ACA 3' | 5'-AgT 3' | 5'-CCT 3' | | | |
| | 175 | 513 | 845 | | 513 | | | 561 | | | | |
| | 5'-CCC 3' | 5'-TCT 3' | 5'-AgT 3' | | 5'-TCT 3' | | | 5'-CAg 3' | | | | |
| | 281 | 518 | | | | | | | | | | |
| | 5'-ACg 3' | 5'-CCA 3' | | | | | | | | | | |
| | | 574 | | | | | | | | | | |
| | | 5'-gAA 3' | | | | | | | | | | |
| Well No. | 37 | 38 | 39 | 40 | 41 | 42 | 43 | 44 | 45 | 46 | 47 | 48 |

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| Well No. | 49 | 50 | 51 | 52 | 53 | 54 | 55 | 56 | 57 | 58 | 59 | 60 |
|--|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|
| Length of spec. PCR product | 195 | 130 | 215 | 90 | 225 | 240 | 175 | 205 | 180 | 205 | 105 | 390 |
| Length of int. pos. control ¹ | 1070 | 1070 | 1070 | 1070 | 800 | 1070 | 800 | 1070 | 1070 | 1070 | 1070 | 1070 |
| 5'-primer(s) ² | 127 | 466 | 363 | 98 | 363 | 98 | 643 | 98 | 766 | 363 | 98 | 652 |
| | 5'-ggT 3' | 5'-gCC 3' | 5'-ATA 3' | 5'-CTT 3' | 5'-ATA 3' | 5'-CTT 3' | 5'-CCg 3' | 5'-CTT 3' | 5'-TgA 3' | 5'-ATA 3' | 5'-CTT 3' | 5'-C.A 3' |
| 3 rd I | | | | | | | | 650 | 864 | | | |
| | 5'-ATA 3' | | | | | | | 5'-CCC 3' | 5'-gAT 3' | | | |
| 3'-primer(s) ³ | 282 | 555 | 538 | 143 | 545 | 295 | 777 | 270 | 899 | 527 | 160 | 899 |
| | 5'-gAC 3' | 5'-CCA 3' | 5'-CCA 3' | 5'-CgT 3' | 5'-AgA 3' | 5'-TCA 3' | 5'-gCA 3' | 5'-ACC 3' | 5'-ACA 3' | 5'-CCg 3' | 5'-gTg 3' | 5'-ACA 3' |
| | 704 | | 605 | 153 | 583 | 296 | | 806 | | 540 | 295 | |
| | 5'-CCA 3' | | 5'-gCA 3' | 5'-ACT 3' | 5'-gTg 3' | 5'-CTA 3' | | 5'-CCA 3' | | 5'-C 3' | 5'-TCA 3' | |
| | | | | 270 | | | | | | 545 | 298 | |
| | | | | 5'-ACT 3' | | | | | | 5'-AgA 3' | 5'-CAg 3' | |
| Well No. | 49 | 50 | 51 | 52 | 53 | 54 | 55 | 56 | 57 | 58 | 59 | 60 |

| Well No. | 61 | 62 | 63 |
|--|-----------|-----------|-----------|
| Length of spec. PCR product | 225 | 190 | 175 |
| Length of int. pos. control ¹ | 1070 | 1070 | 800 |
| 5'-primer(s) ² | 385 | 411 | 363 |
| | 5'-ggT 3' | 5'-TAg 3' | 5'-ATA 3' |
| | | 665 | |
| | | 5'-TgA 3' | |
| | | 853 | |
| | | 5'-ATA 3' | |
| 3'-primer(s) ³ | 570 | 559 | 497 |
| | 5'-CCg 3' | 5'-CgT 3' | 5'-Tgg 3' |
| | | 899 | 524 |
| | | 5'-ACA 3' | 5'-CAC 3' |
| | | | 526 |
| | | | 5'-CTT 3' |
| Well No. | 61 | 62 | 63 |

¹The 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.

²The nucleotide position matching the specificity-determining 3'-end of the primer is given. Nucleotide numbering as on the www.ebi.ac.uk/imgt/hla web site. The sequence of the 3 terminal nucleotides of the primer is given.

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

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| CELL LINE VALIDATION SHEET | | | | | | | | | | | | | | | | | | | |
|---|-----------------------------|--------|------------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|
| HLA-A*03 SSP subtyping kit ² | | | | | | | | | | | | | | | | | | | |
| | | | Prod. No.: | Well | | | | | | | | | | | | | | | |
| | | | | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 |
| | | | | 201549601 | 201549602 | 201549603 | 201549604 | 201549605 | 201549606 | 201549607 | 201549608 | 201549609 | 201549610 | 201549611 | 201549612 | 201549613 | 201549614 | 201549615 | 201549616 |
| | IHWC cell line ¹ | A* | | | | | | | | | | | | | | | | | |
| 1 | 9001 SA | *24:02 | | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| 2 | 9280 LK707 | *02:01 | | - | - | - | - | - | - | - | + | - | - | - | - | - | - | - | - |
| 3 | 9011 E4181324 | *01:01 | | - | - | - | - | - | - | - | - | - | - | + | - | - | - | - | - |
| 4 | 9275 GU373 | *30:01 | | - | - | - | - | - | - | - | + | + | - | - | - | - | - | - | - |
| 5 | 9009 KAS011 | *01:01 | | - | - | - | - | - | - | - | - | - | - | + | - | - | - | - | - |
| 6 | 9353 SM | *02:01 | *26:03 | - | - | - | - | - | - | - | + | - | - | - | + | - | - | - | - |
| 7 | 9020 QBL | *26:01 | | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| 8 | 9025 DEU | *31:01 | | - | - | - | - | - | - | - | + | - | - | - | - | - | - | - | - |
| 9 | 9026 YAR | *26:01 | | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| 10 | 9107 LKT3 | *24:02 | | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| 11 | 9051 PITOUT | *29:02 | | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| 12 | 9052 DBB | *02:01 | | - | - | - | - | - | - | - | + | - | - | - | - | - | - | - | - |
| 13 | 9004 JESTHOM | *02:01 | | - | - | - | - | - | - | - | + | - | - | - | - | - | - | - | - |
| 14 | 9071 OLGA | *31:01 | | - | - | - | - | - | - | - | + | - | - | - | - | - | - | - | - |
| 15 | 9075 DKB | *24:02 | | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| 16 | 9037 SWEIG007 | *29:02 | | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| 17 | 9282 CTM3953540 | *03:01 | *80:01 | + | + | + | - | - | - | - | + | - | - | W | - | - | - | - | - |
| 18 | 9257 32367 | *33:03 | *74:01 | - | - | - | - | - | - | - | + | - | - | + | - | - | - | - | - |
| 19 | 9038 BM16 | *02:01 | | - | - | - | - | - | - | - | + | - | - | - | - | - | - | - | - |
| 20 | 9059 SLE005 | *02:01 | | - | - | - | - | - | - | - | + | - | - | - | - | - | - | - | - |
| 21 | 9064 AMALA | *02:17 | | - | - | - | - | - | - | - | + | - | - | - | - | - | - | - | - |
| 22 | 9056 KOSE | *02:01 | | - | - | - | - | - | - | - | + | - | - | - | - | - | - | - | - |
| 23 | 9124 IHL | *02:01 | *34:01 | - | - | - | - | - | - | - | + | - | - | - | - | - | - | + | - |
| 24 | 9035 JBUSH | *32:01 | | - | - | - | - | - | - | - | - | - | + | - | - | - | - | - | - |
| 25 | 9049 IBW9 | *33:01 | | - | - | - | - | - | - | - | + | - | - | - | - | - | - | - | - |
| 26 | 9285 WT49 | *02:05 | | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| 27 | 9191 CH1007 | *24:10 | *29:01 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| 28 | 9320 BEL5GB | *02:01 | *29:02 | - | - | - | - | - | - | - | + | - | - | - | - | - | - | - | - |
| 29 | 9050 MOU | *29:02 | | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| 30 | 9021 RSH | *30:01 | *68:02 | - | - | - | - | - | - | - | + | + | - | - | - | - | - | + | - |
| 31 | 9019 DUCAF | *30:02 | | - | - | - | - | - | - | - | - | + | - | - | - | - | - | - | - |
| 32 | 9297 HAG | *02:01 | | - | - | - | - | - | - | - | + | - | - | - | - | - | - | - | - |
| 33 | 9098 MT14B | *31:01 | | - | - | - | - | - | - | - | + | - | - | - | - | - | - | - | - |
| 34 | 9104 DHIF | *31:01 | | - | - | - | - | - | - | - | + | - | - | - | - | - | - | - | - |
| 35 | 9302 SSTO | *32:01 | | - | - | - | - | - | - | - | - | - | + | - | - | - | - | - | - |
| 36 | 9024 KT17 | *02:06 | *11:01 | - | - | - | + | - | - | - | - | - | - | - | - | - | - | + | - |
| 37 | 9065 HHKB | *03:01 | | + | + | + | - | - | - | - | + | - | - | - | - | - | - | - | - |
| 38 | 9099 LZL | *02:17 | | - | - | - | - | - | - | - | + | - | - | - | - | - | - | - | - |
| 39 | 9315 CML | *01:01 | *03:01 | + | + | + | - | - | - | - | + | - | - | + | - | - | - | - | - |
| 40 | 9134 WHONP199 | *02:07 | *30:01 | - | - | - | - | - | - | - | + | + | - | - | - | - | - | - | - |
| 41 | 9055 H0301 | *03:01 | | + | + | + | - | - | - | - | + | - | - | - | - | - | - | - | - |
| 42 | 9066 TAB089 | *02:07 | | - | - | - | - | - | - | - | + | - | - | - | - | - | - | - | - |
| 43 | 9076 T7526 | *02:06 | *02:07 | - | - | - | - | - | - | - | + | - | - | - | - | - | - | - | - |
| 44 | 9057 TEM | *66:01 | | - | - | - | - | - | - | - | - | - | - | - | - | - | - | + | - |
| 45 | 9239 SHJO | *23:01 | *24:02 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| 46 | 9013 SCHU | *03:01 | | + | + | + | - | - | - | - | + | - | - | - | - | - | - | - | - |
| 47 | 9045 TUBO | *02:16 | *03:01 | + | + | + | - | - | - | - | + | - | - | - | - | - | - | - | - |
| 48 | 9303 TER-ND | *02:01 | *11:01 | - | - | - | + | - | - | - | + | - | - | - | - | - | - | + | - |

101.413-24/04 – including *Taq* polymerase, IFU-01
101.413-24u/04u – without *Taq* polymerase, IFU-02

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| CELL LINE VALIDATION SHEET | | | | | | | | | | | | | | | | | | | |
|---|------|------------|--------|------------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|
| HLA-A*03 SSP subtyping kit ² | | | | | | | | | | | | | | | | | | | |
| | | | | Well | | | | | | | | | | | | | | | |
| | | | | 33 | 34 | 35 | 36 | 37 | 38 | 39 | 40 | 41 | 42 | 43 | 44 | 45 | 46 | 47 | 48 |
| | | | | Prod. No.: | | | | | | | | | | | | | | | |
| | | | | 201549633 | 201549634 | 201549635 | 201549636 | 201549637 | 201549638 | 201549639 | 201549640 | 201549641 | 201549642 | 201549643 | 201549644 | 201549645 | 201549646 | 201549647 | 201549648 |
| IHCW cell line ¹ | | A* | | | | | | | | | | | | | | | | | |
| 1 | 9001 | SA | *24:02 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| 2 | 9280 | LK707 | *02:01 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| 3 | 9011 | E4181324 | *01:01 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | + | - |
| 4 | 9275 | GU373 | *30:01 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| 5 | 9009 | KAS011 | *01:01 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | + | - |
| 6 | 9353 | SM | *02:01 | *26:03 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| 7 | 9020 | QBL | *26:01 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| 8 | 9025 | DEU | *31:01 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| 9 | 9026 | YAR | *26:01 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| 10 | 9107 | LKT3 | *24:02 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| 11 | 9051 | PITOUT | *29:02 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| 12 | 9052 | DBB | *02:01 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| 13 | 9004 | JESTHOM | *02:01 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| 14 | 9071 | OLGA | *31:01 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| 15 | 9075 | DKB | *24:02 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| 16 | 9037 | SWEIG007 | *29:02 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| 17 | 9282 | CTM3953540 | *03:01 | *80:01 | w | - | - | - | - | - | - | - | - | - | - | - | - | + | - |
| 18 | 9257 | 32367 | *33:03 | *74:01 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| 19 | 9038 | BM16 | *02:01 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| 20 | 9059 | SLE005 | *02:01 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| 21 | 9064 | AMALA | *02:17 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| 22 | 9056 | KOSE | *02:01 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| 23 | 9124 | IHL | *02:01 | *34:01 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| 24 | 9035 | JBUSH | *32:01 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| 25 | 9049 | IBW9 | *33:01 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| 26 | 9285 | WT49 | *02:05 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| 27 | 9191 | CH1007 | *24:10 | *29:01 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| 28 | 9320 | BEL5GB | *02:01 | *29:02 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| 29 | 9050 | MOU | *29:02 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| 30 | 9021 | RSH | *30:01 | *68:02 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| 31 | 9019 | DUCAF | *30:02 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| 32 | 9297 | HAG | *02:01 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| 33 | 9098 | MT14B | *31:01 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| 34 | 9104 | DHIF | *31:01 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| 35 | 9302 | SSTO | *32:01 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| 36 | 9024 | KT17 | *02:06 | *11:01 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| 37 | 9065 | HHKB | *03:01 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| 38 | 9099 | LZL | *02:17 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| 39 | 9315 | CML | *01:01 | *03:01 | - | - | - | - | - | - | - | - | - | - | - | - | - | + | - |
| 40 | 9134 | WHONP199 | *02:07 | *30:01 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| 41 | 9055 | H0301 | *03:01 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| 42 | 9066 | TAB089 | *02:07 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| 43 | 9076 | T7526 | *02:06 | *02:07 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| 44 | 9057 | TEM | *66:01 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| 45 | 9239 | SHJO | *23:01 | *24:02 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| 46 | 9013 | SCHU | *03:01 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| 47 | 9045 | TUBO | *02:16 | *03:01 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| 48 | 9303 | TER-ND | *02:01 | *11:01 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |

101.413-24/04 – including *Taq* polymerase, IFU-01
101.413-24u/04u – without *Taq* polymerase, IFU-02

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| CELL LINE VALIDATION SHEET | | | | | | | | | | | | | | | | | | |
|---|-----------------------------|--------|------------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|
| HLA-A*03 SSP subtyping kit² | | | | | | | | | | | | | | | | | | |
| | | | Prod. No.: | Well | | | | | | | | | | | | | | |
| | | | | 49 | 50 | 51 | 52 | 53 | 54 | 55 | 56 | 57 | 58 | 59 | 60 | 61 | 62 | 63 |
| | IHWC cell line ¹ | A* | | 201549649 | 201549650 | 201549651 | 201549652 | 201549653 | 201549654 | 201549655 | 201549656 | 201549657 | 201549658 | 201549659 | 201549660 | 201549661 | 201549662 | 201549663 |
| 1 | 9001 SA | *24:02 | | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| 2 | 9280 LK707 | *02:01 | | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| 3 | 9011 E4181324 | *01:01 | | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| 4 | 9275 GU373 | *30:01 | | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| 5 | 9009 KAS011 | *01:01 | | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| 6 | 9353 SM | *02:01 | *26:03 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| 7 | 9020 QBL | *26:01 | | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| 8 | 9025 DEU | *31:01 | | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| 9 | 9026 YAR | *26:01 | | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| 10 | 9107 LKT3 | *24:02 | | - | - | - | - | - | - | - | - | - | - | - | - | + | - | - |
| 11 | 9051 PTOUT | *29:02 | | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| 12 | 9052 DBB | *02:01 | | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| 13 | 9004 JESTHOM | *02:01 | | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| 14 | 9071 OLGA | *31:01 | | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| 15 | 9075 DKB | *24:02 | | - | - | - | - | - | - | - | - | - | - | - | - | + | - | - |
| 16 | 9037 SWEIG007 | *29:02 | | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| 17 | 9282 CTM3953540 | *03:01 | *80:01 | - | - | - | - | - | - | - | - | - | - | - | - | + | - | - |
| 18 | 9257 32367 | *33:03 | *74:01 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| 19 | 9038 BM16 | *02:01 | | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| 20 | 9059 SLE005 | *02:01 | | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| 21 | 9064 AMALA | *02:17 | | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| 22 | 9056 KOSE | *02:01 | | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| 23 | 9124 IHL | *02:01 | *34:01 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| 24 | 9035 JBUSH | *32:01 | | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| 25 | 9049 IBW9 | *33:01 | | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| 26 | 9285 WT49 | *02:05 | | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| 27 | 9191 CH1007 | *24:10 | *29:01 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| 28 | 9320 BEL5GB | *02:01 | *29:02 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| 29 | 9050 MOU | *29:02 | | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| 30 | 9021 RSH | *30:01 | *68:02 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| 31 | 9019 DUCAF | *30:02 | | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| 32 | 9297 HAG | *02:01 | | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| 33 | 9098 MT14B | *31:01 | | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| 34 | 9104 DHIF | *31:01 | | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| 35 | 9302 SSTO | *32:01 | | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| 36 | 9024 KT17 | *02:06 | *11:01 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| 37 | 9065 HHKB | *03:01 | | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| 38 | 9099 LZL | *02:17 | | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| 39 | 9315 CML | *01:01 | *03:01 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| 40 | 9134 WHONP199 | *02:07 | *30:01 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| 41 | 9055 H0301 | *03:01 | | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| 42 | 9066 TAB089 | *02:07 | | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| 43 | 9076 T7526 | *02:06 | *02:07 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| 44 | 9057 TEM | *66:01 | | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| 45 | 9239 SHJO | *23:01 | *24:02 | - | - | - | - | - | - | - | - | - | - | - | - | + | - | - |
| 46 | 9013 SCHU | *03:01 | | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| 47 | 9045 TUBO | *02:16 | *03:01 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| 48 | 9303 TER-ND | *02:01 | *11:01 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |

¹The 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.

101.413-24/04 – including *Taq* polymerase, IFU-01
101.413-24u/04u – without *Taq* polymerase, IFU-02

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²The 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 5 to 7, 13, 16, 19 to 21, 23 to 28, 30 to 32, 34 to 46, 48 to 50, 52 to 60 and 62 and 63 were available.

The specificities of the primers in primer solutions 21, 23 to 26, 28, 31, 32, 34, 35, 39, 43 to 45, 49, 52, 53, 56 and 63 were tested by separately adding one additional 5'-primer, respectively one additional 3'-primer. In primer solutions 6, 7, 16, 20, 30, 36 to 38, 41, 54, 58 and 59 it was only possible to test the 5'-primers, the 3'-primers were not possible to test.

In primer solutions 5, 13, 19, 27, 40, 42, 46, 48, 50, 55, 57, 60 and 62 it was only possible to test the 3'-primers, the 5'-primers were not possible to test.

In primer mixes 1, 3, 17, 31, 34, 43 and 49 one or two 5'-primers were not possible to test, and in primer mixes 1, 10, 14, 18, 21, 22, 26, 32, 34, 35, 39, 43 to 45, 49, 51, 52, 53, 56 and 63 one to three 3'-primers were not possible to test.

Additional primers in primer mixes 14 and 33 were tested by separately adding one 3'-primer and/or 5'-primer.

101.413-24/04 – including *Taq* polymerase, IFU-01
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