

## Olerup SSP® HLA-B\*53

Product number:	101.549-06u – without <i>Taq</i> polymerase
Lot number:	15L
Expiry date:	2013-September-01
Number of tests:	6
Number of wells per test:	20
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. 15L.**

### CHANGES COMPARED TO THE PREVIOUS *OLERUP SSP*® HLA-B\*53 LOT.

The HLA-B\*53 specificity and interpretation tables have been updated for the HLA-B alleles described since the previous *Olerup SSP*® HLA-B\*53 lot was made (**Lot No. 56G**).

Four wells have been added to the HLA-B\*53 kit, wells **17 to 20**.

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

Well	5'-primer	3'-primer	rationale
5	Added	Added	Primer pair added for the B*53:22 allele.
17	New	New	New primer pair for the B*53:20 allele
18	New	New	New primer pair for the B*53:21 allele
19	New	New	New primer pair for the B*53:23 allele
20	New	New	New primer pair for the B*53:24 allele

Change in revision R01 compared to R00:

1. Primer mix 15 amplifies the B\*35:129N allele. This has been corrected in the specificity and amplification tables.

Change in revision R02 compared to R01:

1. One missing page has been added to the Interpretation table.

## PRODUCT DESCRIPTION

### HLA-B\*53 SSP typing

#### CONTENT

The primer set contains 5'- and 3'-primers for identifying the B\*53:01 to B\*53:24 alleles.

#### PLATE LAYOUT

Each HLA-B\*53 test consists of 20 PCR reactions in a 24 well cut PCR plate. Wells 21 to 24 are empty.

1	2	3	4	5	6	7	8
9	10	11	12	13	14	15	16
17	18	19	20	empty	empty	empty	empty

The 24 well PCR plate is marked with 'HLA-B\*53' in silver/gray ink.

Well No. 1 is marked with the Lot No. '15L'.

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

The interpretation of HLA-B\*53 SSP subtypings will be influenced by the B\*07, twelve B\*08, the B\*13, the B\*14, most B\*15, the B\*18, the B\*27, the B\*35, the B\*37, the B\*38, the B\*39, the B\*40, two B\*42, the B\*44, the B\*45, the B\*46, the B\*47, the B\*48, the B\*49, the B\*50, the B\*51, the B\*52, the B\*54, the B\*55, the B\*56, the B\*57, the B\*58, the B\*59, the B\*67, the B\*78, the B\*81, the B\*82 and the B\*83:01 alleles when present on the other haplotype.

In addition, the A\*02:188 allele will be weakly amplified by primer mix 10, the C\*03:12, C\*03:19, C\*03:26 and C\*03:102 alleles will be weakly amplified by primer mix 4, the C\*03:28, C\*03:49 and C\*14:20 alleles will be amplified by primer mix 20, the C\*03:36 and C\*03:77 alleles will be amplified by mix 9, the C\*04:08 and C\*05:39 alleles will be amplified by primer mixes 4 and 20, the C\*04:34 allele will be amplified by primer mixes 4 and 9, the C\*05:27, C\*08:41, C\*15:15 and C\*17:07 alleles will be amplified by primer mix 4, the C\*06:20 and C\*07:81 alleles will be weakly amplified by primer mix 11, the C\*07:68, C\*07:140 and 07:151 alleles will be amplified by primer mix 5, the C\*08:08 allele will be amplified by primer mix 14 and the C\*15:39 allele will be amplified by primer mix 2.

## UNIQUELY IDENTIFIED ALLELES

All the HLA-B\*53, i.e. **B\*53:01 to B\*53:24**, recognized by the HLA Nomenclature Committee in October 2010<sup>1</sup> will be amplified by the primers in the HLA-B\*53 SSP kit.

The HLA-B\*53 primer set cannot distinguish the B\* 53:01:01-53:01:05 alleles or the \*53:08:01-53:08:02 alleles.

<sup>1</sup>HLA-B alleles listed on the IMGT/HLA web page 2010-October-15, release 3.2.0, [www.ebi.ac.uk/imgt/hla](http://www.ebi.ac.uk/imgt/hla).

<sup>2</sup>The B\*53:19 and the B\*52:03 and B\*52:10 alleles give rise to identical amplification patterns with the HLA-B\*53 subtyping kit. These three alleles can be distinguished by the HLA-B low resolution kit and/or the HLA-B\*52 subtyping kit.

## RESOLUTION IN HOMO- AND HETEROZYGOTES

A total of 30 alleles generate 23 amplification patterns that can be combined in 276 homozygous and heterozygous combinations. 145 of these genotypes do not give rise to unique amplification patterns. The different lengths of the specific PCR products were not considered in these calculations.

+++-----+ +-----+ ----	*53:03, *53:06 = *53:05, *53:06 = *53:06, *53:15
+++-----+ +-----+ ----	*53:02, *53:03 = *53:02, *53:05 = *53:02, *53:15
+++-----+ +-----+ ----	*53:02, *53:04 = *53:02, *53:18
+++-----+ +-----+ ----	*53:06, *53:12 = *53:06, *53:13
+++-----+ +-----+ ----	*53:02, *53:12 = *53:02, *53:13 = *53:02, *53:22
+++-----+ +-----+ ----	*53:01:01, *53:06 = *53:02, *53:06 = *53:02, *53:08:01
+++-----+ +-----+ ----	*53:06, *53:06 = *53:06, *53:08:01
+++-----+ +-----+ ----	*53:01:01, *53:02 = *53:02, *53:02
+++-----+ +-----+ ----	*53:04, *53:16 = *53:16, *53:18
+++-----+ +-----+ ----	*53:04, *53:05 = *53:05, *53:18
+++-----+ +-----+ ----	*53:03, *53:07 = *53:07, *53:15
+++-----+ +-----+ ----	*53:03, *53:04 = *53:03, *53:18 = *53:04, *53:15 = *53:15, *53:18
+++-----+ +-----+ ----	*53:05, *53:11 = *53:12, *53:16 = *53:13, *53:16
+++-----+ +-----+ ----	*53:05, *53:12 = *53:05, *53:13 = *53:05, *53:22 = *53:12, *53:15
+++-----+ +-----+ ----	*53:11, *53:16 = *53:16, *53:22
+++-----+ +-----+ ----	*53:03, *53:22 = *53:13, *53:15 = *53:15, *53:22
+++-----+ +-----+ ----	*53:01:01, *53:16 = *53:03, *53:16 = *53:05, *53:16 = *53:05, *53:24 = *53:15, *53:16
+++-----+ +-----+ ----	*53:01:01, *53:05 = *53:03, *53:05 = *53:05, *53:05 = *53:05, *53:15
+++-----+ +-----+ ----	*53:16, *53:16 = *53:16, *53:24
+++-----+ +-----+ ----	*53:03, *53:10 = *53:10, *53:15
+++-----+ +-----+ ----	*53:03, *53:08:01 = *53:08:01, *53:15
+++-----+ +-----+ ----	*53:03, *53:14 = *53:14, *53:15
+++-----+ +-----+ ----	*53:03, *53:19 = *53:15, *53:19
+++-----+ +-----+ +---	*53:03, *53:20 = *53:15, *53:20
+++-----+ +-----+ +---	*53:03, *53:21 = *53:15, *53:21
+++-----+ +-----+ +---	*53:03, *53:23 = *53:15, *53:23
+++-----+ +-----+ +---	*53:03, *53:24 = *53:15, *53:24
+++-----+ +-----+ ----	*53:01:01, *53:03 = *53:01:01, *53:15 = *53:03, *53:15 = *53:15, *53:15
+++-----+ +-----+ ----	*53:04, *53:12 = *53:12, *53:18
+++-----+ +-----+ ----	*53:04, *53:09 = *53:09, *53:18
+++-----+ +-----+ ----	*53:04, *53:11 = *53:11, *53:18
+++-----+ +-----+ ----	*53:04, *53:13 = *53:13, *53:18 = *53:18, *53:22

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+++-----+ +-----+ +-----+ \*53:04, \*53:10 = \*53:07, \*53:10 = \*53:07, \*53:14 = \*53:10, \*53:18  
+++-----+ +-----+ +-----+ \*53:01:01, \*53:07 = \*53:07, \*53:18  
+++-----+ +-----+ +-----+ \*53:04, \*53:07 = \*53:07, \*53:07  
+++-----+ +-----+ +-----+ \*53:04, \*53:14 = \*53:14, \*53:18  
+++-----+ +-----+ +-----+ \*53:04, \*53:20 = \*53:18, \*53:20  
+++-----+ +-----+ +-----+ \*53:04, \*53:21 = \*53:18, \*53:21  
+++-----+ +-----+ +-----+ \*53:04, \*53:23 = \*53:18, \*53:23  
+++-----+ +-----+ +-----+ \*53:04, \*53:24 = \*53:18, \*53:24  
+++-----+ +-----+ +-----+ \*53:01:01, \*53:04 = \*53:01:01, \*53:18 = \*53:04, \*53:18 = \*53:18,  
\*53:18  
+-----+ +-----+ +-----+ \*53:01:01, \*53:12 = \*53:12, \*53:22  
+-----+ +-----+ +-----+ \*53:10, \*53:13 = \*53:10, \*53:22  
+-----+ +-----+ +-----+ \*53:13, \*53:14 = \*53:14, \*53:22  
+-----+ +-----+ +-----+ \*53:09, \*53:24 = \*53:11, \*53:19  
+-----+ +-----+ +-----+ \*53:01:01, \*53:09 = \*53:09, \*53:19 = \*53:09, \*53:22 = \*53:13, \*53:19  
+-----+ +-----+ +-----+ \*53:13, \*53:20 = \*53:20, \*53:22  
+-----+ +-----+ +-----+ \*53:13, \*53:21 = \*53:21, \*53:22  
+-----+ +-----+ +-----+ \*53:13, \*53:23 = \*53:22, \*53:23  
+-----+ +-----+ +-----+ \*53:01:01, \*53:11 = \*53:13, \*53:24  
+-----+ +-----+ +-----+ \*53:01:01, \*53:13 = \*53:01:01, \*53:22 = \*53:13, \*53:22  
+-----+ +-----+ +-----+ \*53:11, \*53:22 = \*53:11, \*53:24 = \*53:22, \*53:24  
+-----+ +-----+ +-----+ \*53:01:01, \*53:10 = \*53:10, \*53:10 = \*53:10, \*53:14  
+-----+ +-----+ +-----+ \*53:01:01, \*53:14 = \*53:14, \*53:14  
+-----+ +-----+ +-----+ \*53:01:01, \*53:20 = \*53:20, \*53:20  
+-----+ +-----+ +-----+ \*53:01:01, \*53:21 = \*53:21, \*53:21  
+-----+ +-----+ +-----+ \*53:01:01, \*53:23 = \*53:23, \*53:23  
+-----+ +-----+ +-----+ \*53:12, \*53:12 = \*53:12, \*53:13  
+-----+ +-----+ +-----+ \*53:09, \*53:09 = \*53:09, \*53:13

\*53:01:01 = \*53:01:01-53:01:05

\*53:08:01 = \*53:08:01-53:08:02

## SPECIFICITY TABLE

### HLA-B\*53 SSP subtyping

Specificities and sizes of the PCR products of the 20 primer mixes used for HLA-B\*53 SSP subtyping

Primer Mix	Size of spec. PCR product <sup>1</sup>	Size of control band <sup>2</sup>	Amplified HLA-B*53 alleles <sup>3</sup>	Other amplified HLA Class I alleles <sup>4</sup>
<b>1</b>	145 bp	<b>800 bp</b>	*53:01:01-53:02, 53:04-53:08:02, 53:10, 53:14-53:24	*38:06-38:07, 44:06, 49:03, 51:01:01-51:24:04, 51:26-51:46, 51:48-51:53, 51:55-51:77, 51:79-51:103, 51:105-51:106, 52:01:01-52:01:06, 52:03-52:15, 52:17-52:19, 52:21-52:22, 58:01:01-58:02, 58:04-58:16, 58:18-58:31N
<b>2</b>	270 bp	1070 bp	*53:02, 53:06	*14:10, 18:22, 35:21, 35:24:01-35:24:02, 35:81, 35:96, 35:109, 37:04:01-37:04:02, 40:28, 51:04, 51:46, 51:56, 57:14, 58:09, <b>C*15:39</b>
<b>3<sup>5,9</sup></b>	135 bp, 290 bp	<b>800 bp</b>	*53:03, 53:05, 53:15-53:16	*08:49, 08:60, 27:52, 37:01:01-37:01:05, 37:01:07-37:05, 37:07-37:09, 37:12-37:13, 37:15-37:25, 42:13, 52:09
<b>4<sup>6</sup></b>	190 bp	<b>800 bp</b>	*53:04, 53:07, 53:18	*13:03, 14:19, 15:58, 15:73, 15:133, 15:137, 35:03:01-35:03:05, 35:03:07, 35:06, 35:13, 35:36, 35:38, 35:55-35:56, 35:59, 35:70, 35:74-35:75, 35:84-35:85, 35:98, 35:106, 35:109, 35:127-35:128, 35:136, 35:150-35:151, 39:32-39:33, 40:71, 44:10, 44:15, 44:18, 45:01-45:02, 45:04-45:07, 45:11-45:13, 46:11, 49:01:01-49:03, 49:06, 49:08-49:15, 50:01:01-50:02, 50:04-50:12, 51:13:01-51:13:02, 51:15, 51:62, 51:92, 51:106, 52:14, 54:03, 56:01:01-56:02, 56:04, 56:07-56:08, 56:11, 56:13-56:14, 56:16-56:17, 56:20, 56:22, 56:24-56:30, 59:04, 82:01-82:03, <b>C*03:12<sup>w</sup>, C*03:19<sup>w</sup>, C*03:26<sup>w</sup>, C*03:102<sup>w</sup>, C*04:34, C*05:27, C*05:39, C*04:08, C*05:27, C*08:41, C*15:15, C*17:07</b>

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<b>5</b>	155 bp,	<b>800 bp</b>	*53:09, 53:11-53:13, 53:22	*08:28, 08:35, 08:37, 15:51, 15:179, 15:199, 18:09, 35:115, 37:10, 42:09, 44:17, 44:83, 45:09, 51:54, 51:78, 51:97, 52:20, 57:24, 07:140, 07:151, <b>C*07:68</b>
<b>6<sup>10</sup></b>	205 bp, 235 bp	<b>800 bp</b>	*53:02, 53:05-53:06, 53:12, 53:16	*13:25, 15:38:01-15:38:02, 15:115, 15:185, 18:01:01-18:09, 18:12-18:15, 18:17N-18:20, 18:22-18:25, 18:27-18:34, 18:36-18:40, 18:42-18:52, 35:21, 35:24:01-35:24:02, 39:43, 44:15, 44:109, 51:37, 51:45, 51:63, 51:97, 57:14, 58:09
<b>7<sup>5,6</sup></b>	130 bp	<b>800 bp</b>	*53:07, 53:10	*15:32, 18:18, 37:01:01-37:01:07, 37:03N-37:06, 37:08, 37:10-37:11, 37:13-37:18, 37:20-37:25, 39:09
<b>8<sup>6</sup></b>	170 bp	1070 bp	*53:06, 53:08:01-53:08:02	*07:02:01-07:24, 07:26-07:47, 07:49N-07:50, 07:52-07:117, 08:20, 08:53, 13:16, 13:20, 13:31, 14:01:01-14:19, 15:01:01:01-15:01:04, 15:01:06-15:04, 15:06-15:19, 15:21, 15:23-15:30, 15:32-15:40, 15:42-15:47, 15:49-15:50, 15:53-15:54, 15:56-15:58, 15:60-15:74, 15:76-15:82, 15:85, 15:87, 15:89-15:90, 15:92-15:99, 15:101-15:104, 15:106, 15:108-15:110, 15:112-15:113, 15:115-15:122, 15:125-15:129, 15:131-15:135, 15:137-15:144, 15:146-15:150, 15:152-15:154, 15:156-15:161, 15:163-15:175, 15:177-15:178, 15:180-15:184, 15:187, 15:189-15:199, 15:201-15:209N, 18:15, 18:19, 18:21, 18:30, 27:04:01-27:04:03, 27:06, 27:10, 27:15, 27:18, 27:20-27:21, 27:24-27:25, 27:40, 27:54, 27:63, 27:66N, 27:68-27:69, 35:11:01-35:11:02, 35:14:01-35:14:02, 35:21, 35:43:01-35:44, 35:58, 35:67, 35:79, 35:86, 35:96, 35:99, 35:102, 35:117-35:118, 35:135, 37:07, 37:13, 38:10, 39:18, 39:35-39:36, 40:05, 40:15-40:16, 40:23, 40:26, 40:28, 40:32, 40:51, 40:95, 40:98, 40:148, 40:158, 44:76, 44:79, 46:01:01-46:05, 46:07N-46:08, 46:10, 46:12, 46:14-46:17,

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				46:20, 46:22-46:24, 48:05, 48:08, 48:15, 49:01:01-49:10, 49:12-49:15, 50:01:01-50:02, 50:04-50:12, 51:01:01-51:04, 51:06-51:07:02, 51:11N-51:14, 51:16-51:18, 51:21-51:24:04, 51:26-51:30, 51:32-51:39, 51:41N, 51:43, 51:45-51:46, 51:48-51:52, 51:55-51:72, 51:74-51:80, 51:82-51:92, 51:94-51:96, 51:98N-51:106, 52:01:01-52:02, 52:04-52:09, 52:11-52:18, 52:20-52:22, 54:06, 54:20, 55:01:01-55:01:06, 55:03, 55:05, 55:09, 55:11, 55:14-55:15, 55:17, 55:21, 55:24-55:25, 55:28-55:29, 55:31, 55:33, 55:36, 55:38, 55:40, 55:44-55:45, 56:03, 56:05:01-56:06, 56:21, 56:25, 57:09, 57:13, 57:22, 58:06, 58:08, 58:19, 78:01-78:03, 78:05-78:07
<b>9<sup>5,7</sup></b>	75 bp	1070 bp	*53:01:01-53:05, 53:07, 53:09-53:24	*08:21, 08:25, 13:03-13:04, 15:05:01-15:05:02, 15:20, 15:31, 15:48, 15:51, 15:55, 15:84, 15:91, 15:107, 15:123, 15:136, 15:151, 15:155, 15:179, 15:185, 18:36, 27:38, 27:47, 35:01:01:01-35:01:21, 35:02:01-35:03:05, 35:03:07-35:10, 35:12:01-35:13, 35:16-35:20:02, 35:22-35:30, 35:32, 35:34, 35:36-35:42:02, 35:45-35:57, 35:59, 35:61-35:64, 35:68:01-35:72, 35:74-35:78, 35:80-35:85, 35:89-35:92, 35:94-35:95, 35:97-35:98, 35:100-35:101:02, 35:103-35:116, 35:119-35:134N, 35:136-35:139, 35:141-35:151, 39:32-39:33, 40:63, 40:71, 40:92, 44:02:01:01-44:02:07, 44:02:08 <sup>w</sup> , 44:02:09-44:03:12, 44:05:01, 44:06-44:15, 44:17-44:20, 44:22-44:29, 44:32-44:55, 44:57-44:63, 44:65-44:75, 44:77-44:78, 44:80-44:91, 44:93-44:100, 44:101 <sup>w</sup> , 44:103-44:111, 44:113-44:115, 45:01-45:07, 45:09, 45:12-45:13, 46:09, 46:11, 46:13:01-46:13:03, 46:19, 46:25-46:26, 48:02:01-48:02:02, 49:11, 51:05,

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				51:08-51:09:02, 51:15, 51:19-51:20, 51:40, 51:42, 51:44N, 51:54, 51:73, 51:97, 52:03, 52:10, 52:19, 54:03, 55:08, 56:01:01-56:02, 56:04, 56:07-56:09, 56:11, 56:13-56:17, 56:20, 56:22, 56:24, 56:26-56:30, 57:01:01-57:01:02, 57:01:04-57:08, 57:10-57:12, 57:14-57:21, 57:23-57:24, 57:27-57:29, 57:31-57:37, 58:01:01-58:02, 58:04, 58:07, 58:09-58:18, 58:21-58:26, 58:28-58:31N, 59:04, 78:04, 82:01-82:03, 83:01, <b>C*03:77, C*03:36, C*04:34</b>
<b>10</b>	150 bp	1070 bp	*53:01:01-53:03, 53:05, 53:09-53:10, 53:11 <sup>w</sup> , 53:12-53:15, 53:16 <sup>w</sup> , 53:17-53:18, 53:20-53:21, 53:23, 53:24 <sup>w</sup>	*13:04, 13:10, 13:26, 15:05:01-15:05:02, 15:20, 15:31, 15:52, 15:55, 15:84 <sup>w</sup> , 15:91, 15:107, 15:114, 15:123-15:124, 15:136, 15:151, 15:155, 15:185-15:186, 18:01:01-18:12, 18:13 <sup>w</sup> , 18:14, 18:17N-18:18, 18:20, 18:22-18:25, 18:27-18:29, 18:31-18:40, 18:42-18:52, 27:41, 35:01:01:01-35:01:22, 35:05:01-35:05:02, 35:07, 35:08:01 <sup>w</sup> -35:08:04 <sup>w</sup> , 35:10, 35:15-35:17, 35:19-35:20:02, 35:23-35:30, 35:32, 35:35, 35:37, 35:40N-35:42:02, 35:45 <sup>w</sup> , 35:46-35:54, 35:57, 35:61 <sup>w</sup> -35:62 <sup>w</sup> , 35:63-35:64, 35:66 <sup>w</sup> , 35:68:01-35:69, 35:71-35:72, 35:76-35:78, 35:80 <sup>w</sup> , 35:82, 35:89-35:94, 35:97, 35:100 <sup>w</sup> , 35:101:01-35:101:02, 35:103-35:104, 35:105 <sup>w</sup> , 35:107-35:108:02, 35:110-35:114, 35:116, 35:119-35:126, 35:130N-35:134N, 35:137-35:140, 35:142 <sup>w</sup> , 35:143-35:148, 39:07, 39:43, 40:03, 40:20, 40:38, 40:52, 40:59-40:60, 40:105, 44:43:01-44:43:02, 46:06, 46:13:01-46:13:03, 46:19, 46:21:01-46:21:02, 46:26, 48:02:01-48:02:02, 48:14, 48:23, 54:09, 54:14, 55:23, 55:32, 56:09, 56:18, 57:01:01-57:01:10, 57:06, 57:08, 57:10-57:11, 57:14-57:16, 57:18, 57:19 <sup>w</sup> , 57:20-57:21, 57:23, 57:25-57:26, 57:27 <sup>w</sup> , 57:29, 57:31, 57:33-57:37, 58:01:01-58:02, 58:04, 58:07, 58:09-58:18, 58:21,



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				58:22 <sup>W</sup> , 58:23-58:26, 58:29-58:31N, A*02:188 <sup>W</sup>
11 <sup>5,7</sup>	85 bp	800 bp	*53:01:01-53:03, 53:05-53:06, 53:08:01-53:18, 53:20-53:24	*13:04, 13:10 <sup>W</sup> , 13:26, 15:01:01:01-15:01:04, 15:01:06-15:01:20, 15:02:01 <sup>W</sup> -15:02:05 <sup>W</sup> , 15:03:01-15:05:02, 15:06 <sup>W</sup> , 15:07:01-15:08, 15:11:01-15:12, 15:13 <sup>W</sup> , 15:14-15:16, 15:18:01-15:20, 15:21 <sup>W</sup> , 15:23-15:24, 15:25:01 <sup>W</sup> -15:25:02 <sup>W</sup> , 15:25:03-15:29, 15:31 <sup>W</sup> , 15:32, 15:34-15:35, 15:36 <sup>W</sup> , 15:38:01-15:40, 15:43, 15:44 <sup>W</sup> , 15:46-15:47, 15:49-15:54, 15:55 <sup>W</sup> , 15:56-15:57, 15:60-15:62, 15:64-15:71, 15:74-15:76, 15:79N-15:82, 15:84-15:85, 15:87, 15:88 <sup>W</sup> -15:89 <sup>W</sup> , 15:91-15:98, 15:101-15:105, 15:106 <sup>W</sup> , 15:108-15:111N, 15:112 <sup>W</sup> , 15:113-15:115, 15:117-15:120, 15:121 <sup>W</sup> , 15:122-15:127, 15:128 <sup>W</sup> , 15:129, 15:131-15:132, 15:134-15:136, 15:138, 15:139 <sup>W</sup> , 15:140, 15:142-15:143, 15:144 <sup>W</sup> , 15:145-15:149N, 15:151-15:155, 15:156 <sup>W</sup> , 15:157-15:161, 15:163-15:167, 15:169, 15:170 <sup>W</sup> , 15:171-15:176, 15:178-15:187, 15:189-15:195, 15:197-15:203, 15:204 <sup>W</sup> , 15:205-15:207, 15:209N, 18:01:01-18:01:03, 18:01:05-18:15, 18:17N-18:19, 18:20 <sup>W</sup> , 18:22-18:25, 18:27-18:39, 18:42-18:52, 27:41, 35:01:01:01-35:01:22, 35:05:01-35:05:02, 35:07-35:08:04, 35:10-35:11:02, 35:14:01-35:17, 35:19-35:21, 35:23-35:30, 35:32, 35:35, 35:37, 35:40N-35:43:02, 35:45-35:52, 35:54, 35:57-35:58, 35:61-35:63, 35:66-35:69, 35:71-35:72, 35:76-35:80, 35:82, 35:86, 35:89-35:94, 35:97, 35:99-35:105, 35:107-35:108:02, 35:110-35:113, 35:115-35:117, 35:119-35:126, 35:130N-35:135, 35:137-35:148, 39:07, 39:43, 40:158, 44:17, 44:43:01-44:43:02, 45:09, 46:01:01-46:05, 46:07N-46:10, 46:12-46:17, 46:19-46:26, 48:02:01-48:02:02, 48:14, 49:04, 49:05 <sup>W</sup> , 51:37, 51:45, 51:63,

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<b>12<sup>5</sup></b>	105 bp	1070 bp		*07:78, 13:02:01-13:03, 13:08Q-13:09, 13:14-13:16, 13:18-13:19, 13:27, 13:30-13:34, 13:37-13:38, 13:40, 15:42, 35:60, 44:15, 44:18, 45:01, 45:03-45:08, 45:10-45:13, 46:11, 46:18, 49:01:01-49:03, 49:06-49:15, 50:01:01-50:02, 50:04-50:08, 50:10-50:11, 51:15, 54:01-54:03, 54:05N, 54:07-54:08N, 54:10, 54:12-54:13, 54:16-54:23, 55:01:01-55:01:03, 55:01:05-55:03, 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, 56:01:01-56:01:04, 56:07-56:08, 56:13-56:14, 56:16-56:17, 56:19N-56:20, 56:23-56:30, 59:01, 59:04-59:05
<b>13<sup>5</sup></b>	90 bp	1070 bp		*58:01:01-58:02, 58:04-58:31N
<b>14<sup>5,7,11</sup></b>	95 bp, 130bp	1070 bp	*53:10, 53:14	*07:09, 07:11, 07:17, 07:115, 08:28, 08:35, 08:37, 14:05, 15:07:01-15:07:02, 15:55, 15:68, 18:14, 35:51, 35:58, 35:66, 35:72, 39:24, 39:37, 40:03, 42:09, 46:12, <b>C*08:08</b>
<b>15<sup>5,7,8,12</sup></b>	105 bp, 205 bp	<b>800 bp</b>	*53:09, 53:17, 53:19	*15:202, 18:01:01-18:06, 18:08-18:15, 18:17N-18:28, 18:30-18:32, 18:34-18:36, 18:38-18:47, 18:49-18:52, 35:02:01-35:02:04, 35:20:01-35:20:02, 35:28, 35:72, 35:81, 35:83, 35:95, 35:129N, 37:01:01-37:01:05, 37:01:07-37:05, 37:07-37:20, 37:22-37:25, 44:83, 45:12, 49:03, 52:01:01-52:01:06, 52:03-52:05, 52:07-52:15, 52:17-52:22
<b>16</b>	160 bp	1070 bp	*53:01:01-53:10, 53:12-53:15, 53:17-53:21, 53:23	*07:26, 07:34, 07:43, 07:48, 07:80, 08:13, 08:25, 08:55, 13:01:01-13:04, 13:06-13:17, 13:19-13:23, 13:25-13:30, 13:32-13:40,

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14:01:01-14:02:06, 14:04-14:19,  
15:02:01-15:03:03, 15:05:01-15:06,  
15:09-15:10:02, 15:13, 15:16-  
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35:19-35:37, 35:39-35:42:02, 35:46-  
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39:01:01:01-39:01:01:02L,  
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				46:08, 46:11, 46:13:01-46:13:03, 46:18-46:19, 46:21:01-46:21:02, 46:26, 47:01:01:01-47:07, 48:01:01-48:04, 48:06-48:07, 48:09-48:18, 48:20-48:23, 49:01:01, 49:01:02 <sup>w</sup> , 49:02-49:15, 50:01:01-50:02, 50:04-50:12, 51:01:01-51:04, 51:06-51:07:02, 51:09:01-51:19, 51:21-51:24:04, 51:26-51:28, 51:30-51:35, 51:37-51:43, 51:45-51:46, 51:48-51:52, 51:53 <sup>w</sup> , 51:56-51:60, 51:62-51:71, 51:72 <sup>w</sup> , 51:73-51:81, 51:83-51:86, 51:87 <sup>w</sup> , 51:88-51:90, 51:91 <sup>w</sup> , 51:92-51:96, 51:98N-51:106, 52:01:01-52:18, 52:20, 52:22, 54:01-54:05N, 54:07-54:09, 54:11-54:19, 54:21-54:23, 55:01:01-55:05, 55:07-55:08, 55:10-55:19, 55:22-55:36, 55:38-55:48, 56:01:01-56:02, 56:04-56:12, 56:14-56:30, 57:01:01-57:01:10, 57:03:01-57:03:02, 57:06-57:08, 57:10-57:11, 57:14-57:18, 57:20-57:23, 57:25-57:26, 57:29, 57:31-57:37, 58:01:01-58:02, 58:04-58:21, 58:23-58:31N, 59:01-59:05, 67:01:01-67:03, 78:01-78:07, 81:01-81:05
<b>17</b>	275 bp	1070 bp	*53:20	
<b>18<sup>7</sup></b>	140 bp	1070 bp	*53:21	*18:01:01-18:03, 18:05-18:15, 18:17N-18:24, 18:26-18:36, 18:38-18:47, 18:49-18:52, 27:52, 35:50, 35:84, 37:01:01-37:05, 37:07-37:25, 38:06-38:07, 39:19:01-39:19:02, 51:57, 51:103
<b>19<sup>5</sup></b>	125 bp	1070 bp	*53:23	*07:65, 08:32, 18:03, 35:29, 35:69, 35:76, 35:136, 39:19:01-39:19:02, 51:20, 56:06, 78:01, 78:03, 78:07
<b>20<sup>5</sup></b>	60 bp	1070 bp	*53:11, 53:16, 53:24	*07:20, 07:24, 07:60, 15:65, 15:84, 15:99, 35:08:01-35:08:04, 35:18, 35:45, 35:61, 35:80, 35:99-35:100, 35:105, 35:142, 39:33, 44:28:01-44:28:02, 44:76, 51:05, 51:29, 51:54, 57:02:01-57:02:02, 57:04-57:05, 57:12, 57:19, 57:28N, 57:30, 58:22, <b>C*03:49, C*03:28, C*04:08, C*05:39, C*14:20</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\*53 SSP typings.

When the primers in a primer mix can give rise to specific PCR products of more than one length this is indicated if the size difference is 20 base pairs or more. Size differences shorter than 20 base pairs are not given. For high resolution SSP kits the respective lengths of the specific PCR product(s) of the alleles amplified by these primer mixes are given.

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 two different control primer pairs give rise to either an internal positive control band of 1070 base pairs, for most wells, or a band of 800 base pairs, for some wells.

Well number 1 contains the primer pair giving rise to the shorter, 800 bp, internal positive control band in order to help in the correct orientation of the HLA-B\*53 subtyping.

In addition, wells number 3 to 7, 11 and 15 contain the primer pair giving rise to the shorter, 800 bp, internal positive control band in order to allow kit identification.

In the presence of a specific amplification the intensity of the control band often decreases.

<sup>3</sup> The B\*53:19, B\*52:03 and B\*52:10 give rise to identical amplification patterns with the HLA-B\*53 subtyping kit. These three alleles can be distinguished by the HLA-B low resolution kit and/or the HLA-B\*52 subtyping kit.

<sup>4</sup> Due to the sharing of sequence motifs between HLA-B alleles non-HLA-B\*53 alleles will be amplified by all B\*53 primer mixes except primer mix 17. In addition, the A\*02:188 allele will be weakly amplified by primer mix 10, the C\*03:12, C\*03:19, C\*03:26 and C\*03:102 alleles will be weakly amplified by primer mix 4, the C\*03:28, C\*03:49 and C\*14:20 alleles will be amplified by primer mix 20, the C\*03:36 and C\*03:77 alleles will be amplified by mix 9, the C\*04:08 and C\*05:39 alleles will be amplified by primer mixes 4 and 20, the C\*04:34 allele will be amplified by primer mixes 4 and 9, the C\*05:27, C\*08:41, C\*15:15 and C\*17:07 alleles will be amplified by primer mix 4, the C\*06:20 and C\*07:81 alleles will be weakly amplified by primer mix 11, the C\*07:68, C\*07:140 and 07:151 alleles will be amplified by primer mix 5, the C\*08:08 allele will be amplified by primer mix 14 and the C\*15:39 allele will be amplified by primer mix 2.

<sup>5</sup> Short specific PCR fragments are less intense and not as sharp as longer specific bands.

<sup>6</sup> Primer mix 4, 7 and 8 have a tendency of giving rise to nonspecific amplifications..

<sup>7</sup> Primer mixes 9, 11, 14, 15 and 18 may give a lower yield of specific PCR product than the other HLA-B\*53 primer mixes.

<sup>8</sup> Primer mix 15 may have tendencies of primer dimer formation.

<sup>9</sup> Primer mix 3: Specific PCR fragment of 135 bp in the B\*53:03, \*53:05 and 53:16 and in the B\*27:52, 37:01:01-37:01:05, 37:01:07-37:05, 37:07-37:09, 37:12-37:13, 37:15-37:25 and 52:09 alleles. Specific PCR fragment of 290 bp in the B\*53:15, 08:49, 08:60, 37:07, 42:13 alleles.

<sup>10</sup> Primer mix 6: Specific PCR fragment of 205 bp in the B\*53:02 and 53:06 and in the B\*15:38:01-15:38:02, 15:185, 18:01:01-18:09, 18:12-18:15, 18:17N-18:20, 18:22-18:25, 18:27-18:34, 18:36-18:40, 18:42-18:52, 35:21, 35:24:01-35:24:02, 39:43, 51:37, 51:45, 51:63, 51:97, 57:14 and 58:09 alleles. Specific PCR fragment of 235 bp in the the B\*53:05, 53:12 and 53:16 and in the B\*13:25, 15:115, 44:15 and 44:109 alleles.

<sup>11</sup> Primer mix 14: Specific PCR fragment of 95 bp in the B\*53:14 and in the B\*07:09, 07:11, 07:17, 07:115, 08:28, 08:35, 08:37, 14:05, 15:07:01-15:07:02, 15:55, 15:68, 18:14, 35:51, 35:58, 35:66, 35:72, 39:24, 39:37, 40:03, 42:09 and 46:12 and the C\*08:08 alleles. Specific PCR fragment of 130 bp in the B\*53:10 allele.

<sup>12</sup> Primer mix 15: Specific PCR fragment of 105 bp in the B\*53:09 and 53:17 and in the B\*15:202, 18:01:01-18:06, 18:08-18:15, 18:17N-18:28, 18:30-18:32, 18:34-18:36, 18:38-18:47, 18:49-18:52, 35:20:01-35:20:02, 35:28, 35:72, 37:01:01-37:01:05, 37:01:07-37:05, 37:07-37:20, 37:22-37:25, 44:83, 49:03, 52:01:01-52:01:06, 52:03-52:05, 52:07-52:15 and 52:17-52:21 alleles. Specific PCR fragment of 205 bp in the B\*53:19 and in the B\*35:02:01-35:02:04, 35:81, 35:83 and 45:12 alleles. Specific PCR fragments of 105 and 205 bp in the B\*35:95 allele.

‘w’, might be weakly amplified.

## INTERPRETATION TABLE

### HLA-B\*53 SSP subtyping

Amplification patterns of the B\*53:01 to B\*53:24 alleles

	Well <sup>5</sup>											
	1	2	3	4	5	6	7	8	9	10	11	12
Length of spec. PCR product(s)	145	270	135	190	155	205	130	170	75	150	85	105
Length of int. pos. control <sup>1</sup>	800	1070	800	800	800	800	800	1070	1070	1070	800	1070
5'-primer(s) <sup>2</sup>	206	355	206	49	206	106	106	527	527	419	419	357
	5'-gAC 3'	5'-TCA 3'	5'-gAC 3'	5'-CAG 3'	5'-gAC 3'	5'-CCA 3'	5'-CCA 3'	5'-TgA 3'	5'-TgT 3'	5'-gTC 3'	5'-gTC 3'	5'-Tgg 3'
			355	419	419	419	368					
			5'-TCA 3'	5'-gTT 3'	5'-gTC 3'	5'-gTC 3'	5'-gTC 3'					
				419			368					
				5'-gTT 3'			5'-gTC 3'					
				419								
				5'-gTT 3'								
3'-primer(s) <sup>3</sup>	309	583	301	79	309	302	197	3 <sup>rd</sup> I	559	527	463	420
	5'-ATC 3'	5'-gTg 3'	5'-gTC 3'	5'-gTA 3'	5'-gTg 3'	5'-ggC 3'	5'-gAA 3'	5'-TAT 3'	5'-CAG 3'	5'-CCA 3'	5'-gCT 3'	5'-gCT 3'
			302	559	538	583	463			527		
			5'-ggC 3'	5'-CAG 3'	5'-gTC 3'	5'-gTg 3'	5'-gCT 3'			5'-CCA 3'		
			603									
			5'-gTg 3'									
Well No.	1	2	3	4	5	6	7	8	9	10	11	12
HLA-B allele												
*53:01:01-53:01:05	1								9	10	11	
*53:02	1	2				6			9	10	11	
*53:03			3						9	10	11	
*53:04	1			4					9			
Well No.	1	2	3	4	5	6	7	8	9	10	11	12



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Length of spec.	145	270	135	190	155	205	130	170	75	150	85	105
PCR product(s)			290			235						
Well No.	1	2	3	4	5	6	7	8	9	10	11	12
*53:05	1		3			6			9	10	11	
*53:06	1	2				6		8			11	
*53:07	1			4			7		9			
*53:08:01-53:08:02	1							8			11	
*53:09					5				9	10	11	
*53:10	1						7		9	10	11	
*53:11					5				9	w	11	
*53:12					5	6			9	10	11	
*53:13					5				9	10	11	
*53:14	1								9	10	11	
*53:15	1		3						9	10	11	
*53:16	1		3			6			9	w	11	
*53:17	1								9	10	11	
*53:18	1			4					9	10	11	
*53:19, 52:03, 52:10 <sup>4</sup>	1								9			
*53:20	1								9	10	11	
*53:21	1								9	10	11	
*53:22	1				5				9		11	
*53:23	1								9	10	11	
*53:24	1								9	w	11	
Well No.	1	2	3	4	5	6	7	8	9	10	11	12



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90	95	105	160	275	140	125	60	Length of spec. PCR product(s)
13	14	15	16	17	18	19	20	Well No.
	130	205						
			16					*53:05
			16					*53:06
			16					*53:07
			16					*53:08:01-53:08:02
		15	16					*53:09
	14		16					*53:10
							20	*53:11
			16					*53:12
			16					*53:13
	14		16					*53:14
			16					*53:15
							20	*53:16
		15	16					*53:17
			16					*53:18
		15	16					*53:19, 52:03, 52:10 <sup>4</sup>
			16	17				*53:20
			16		18			*53:21
								*53:22
			16			19		*53:23
							20	*53:24
13	14	15	16	17	18	19	20	Well No.

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Length of spec.	145	270	135	190	155	205	130	170	75	150	85	105
PCR product(s)			290			235						
Well No.	1	2	3	4	5	6	7	8	9	10	11	12
*07:02:01-07:08, 07:10, 07:12-07:16, 07:18:01-07:19, 07:21-07:23, 07:27-07:33, 07:35-07:42, 07:44-07:47, 07:49N-07:50, 07:52-07:59, 07:61-07:64, 07:66-07:77, 07:79, 07:81-07:114, 07:116-07:117, 08:20, 08:53, 14:03, 15:30, 15:33, 15:45, 15:63, 15:77-15:78:02, 15:116, 15:141, 15:150, 15:168, 27:25, 35:44, 35:118, 39:18, 39:36, 40:15-40:16, 40:23, 40:32, 40:98, 48:05, 48:08, 57:09, 57:13								8				
*07:09, 07:11, 07:17, 07:115								8				
*07:20, 07:24, 07:60, 15:99, 44:76								8				
*07:26, 07:34, 07:43, 07:80, 13:20, 14:01:01-14:02:06, 14:04, 14:06:01-14:09, 14:11-14:18, 15:09-15:10:02, 15:17:01:01-15:17:02, 15:37, 15:72, 15:90, 15:177, 15:196, 15:208, 27:04:01-27:04:03, 27:06, 27:10, 27:15, 27:18, 27:20-27:21, 27:24, 27:40, 27:54, 27:63, 27:66N, 27:68-27:69, 38:10, 39:35, 40:05, 40:26, 40:51, 40:95, 40:148, 44:79, 48:15, 51:104, 52:02, 52:16, 55:01:04, 55:17, 55:28, 55:44, 56:05:01-56:05:02, 56:21, 78:02:01-78:02:02, 78:05-78:06								8				
Well No.	1	2	3	4	5	6	7	8	9	10	11	12

Lot No.: **15L**

Lot-specific Information

www.olerup-ssp.com

90	95	105	160	275	140	125	60	Length of spec. PCR product(s)
13	14	15	16	17	18	19	20	Well No.
								*07:02:01-07:08, 07:10, 07:12-07:16, 07:18:01-07:19, 07:21-07:23, 07:27-07:33, 07:35-07:42, 07:44-07:47, 07:49N-07:50, 07:52-07:59, 07:61-07:64, 07:66-07:77, 07:79, 07:81-07:114, 07:116-07:117, 08:20, 08:53, 14:03, 15:30, 15:33, 15:45, 15:63, 15:77-15:78:02, 15:116, 15:141, 15:150, 15:168, 27:25, 35:44, 35:118, 39:18, 39:36, 40:15-40:16, 40:23, 40:32, 40:98, 48:05, 48:08, 57:09, 57:13
	14							*07:09, 07:11, 07:17, 07:115
							20	*07:20, 07:24, 07:60, 15:99, 44:76
			16					*07:26, 07:34, 07:43, 07:80, 13:20, 14:01:01-14:02:06, 14:04, 14:06:01-14:09, 14:11-14:18, 15:09-15:10:02, 15:17:01:01-15:17:02, 15:37, 15:72, 15:90, 15:177, 15:196, 15:208, 27:04:01-27:04:03, 27:06, 27:10, 27:15, 27:18, 27:20-27:21, 27:24, 27:40, 27:54, 27:63, 27:66N, 27:68-27:69, 38:10, 39:35, 40:05, 40:26, 40:51, 40:95, 40:148, 44:79, 48:15, 51:104, 52:02, 52:16, 55:01:04, 55:17, 55:28, 55:44, 56:05:01-56:05:02, 56:21, 78:02:01-78:02:02, 78:05-78:06
13	14	15	16	17	18	19	20	Well No.

Lot No.: **15L**

Lot-specific Information

www.olerup-ssp.com

Length of spec.	145	270	135	190	155	205	130	170	75	150	85	105
PCR product(s)			290			235						
Well No.	1	2	3	4	5	6	7	8	9	10	11	12
*07:48, 08:13, 08:55, 13:01:01-13:01:05, 13:06-13:07N, 13:11-13:13, 13:17, 13:21-13:23, 13:28-13:29, 13:35-13:36, 13:39, 15:86, 15:162, 15:188, 27:01-27:03, 27:05:02-27:05:15, 27:07-27:09, 27:11-27:14, 27:16-27:17, 27:19, 27:23, 27:26-27:37, 27:39, 27:42-27:44, 27:46, 27:48-27:51, 27:53, 27:55-27:62, 27:64N-27:65N, 27:67, 27:70-27:73, 35:03:06, 35:31, 35:33, 35:65Q, 35:88, 38:01:01-38:05, 38:08-38:09, 38:11-38:23, 38:25-38:26, 39:01:01:01-39:01:01:02L, 39:01:03-39:06:02, 39:10, 39:12-39:17, 39:20, 39:22-39:23, 39:25N-39:31, 39:34, 39:38Q-39:42, 39:44-39:62 40:01:01-40:02:11, 40:04, 40:06:01:01-40:14:03, 40:18-40:19, 40:21-40:22N, 40:24-40:25, 40:27, 40:29-40:31, 40:33-40:37, 40:39-40:40, 40:42-40:50, 40:53-40:58, 40:61-40:62, 40:64-40:70, 40:72:01-40:91, 40:93-40:94, 40:96-40:97, 40:99-40:104, 40:106-40:127, 40:129-40:135, 40:137-40:147, 40:149-40:157, 44:30-44:31, 44:64:01-44:64:02, 44:92, 47:01:01:01-47:07, 48:01:01-48:01:03, 48:03:01-48:04, 48:06-48:07, 48:09-48:13, 48:16-48:18, 48:20-48:22, 54:04, 54:11, 54:15, 55:04, 55:13, 55:27, 55:39, 55:42, 56:10, 56:12, 59:02-59:03, 67:01:01-67:03, 81:01-81:05												
*07:65								8				
*07:78, 13:31, 54:20, 55:09, 55:21								8				12
Well No.	1	2	3	4	5	6	7	8	9	10	11	12

Lot No.: **15L**

Lot-specific Information

www.olerup-ssp.com

90	95	105	160	275	140	125	60	Length of spec. PCR product(s)
13	14	15	16	17	18	19	20	Well No.
			16					*07:48, 08:13, 08:55, 13:01:01- 13:01:05, 13:06-13:07N, 13:11- 13:13, 13:17, 13:21-13:23, 13:28- 13:29, 13:35-13:36, 13:39, 15:86, 15:162, 15:188, 27:01-27:03, 27:05:02-27:05:15, 27:07-27:09, 27:11-27:14, 27:16-27:17, 27:19, 27:23, 27:26-27:37, 27:39, 27:42- 27:44, 27:46, 27:48-27:51, 27:53, 27:55-27:62, 27:64N-27:65N, 27:67, 27:70-27:73, 35:03:06, 35:31, 35:33, 35:65Q, 35:88, 38:01:01-38:05, 38:08-38:09, 38:11-38:23, 38:25-38:26, 39:01:01:01-39:01:01:02L, 39:01:03-39:06:02, 39:10, 39:12- 39:17, 39:20, 39:22-39:23, 39:25N- 39:31, 39:34, 39:38Q-39:42, 39:44- 39:62 40:01:01-40:02:11, 40:04, 40:06:01:01-40:14:03, 40:18- 40:19, 40:21-40:22N, 40:24-40:25, 40:27, 40:29-40:31, 40:33-40:37, 40:39-40:40, 40:42-40:50, 40:53- 40:58, 40:61-40:62, 40:64-40:70, 40:72:01-40:91, 40:93-40:94, 40:96-40:97, 40:99-40:104, 40:106- 40:127, 40:129-40:135, 40:137- 40:147, 40:149-40:157, 44:30- 44:31, 44:64:01-44:64:02, 44:92, 47:01:01:01-47:07, 48:01:01- 48:01:03, 48:03:01-48:04, 48:06- 48:07, 48:09-48:13, 48:16-48:18, 48:20-48:22, 54:04, 54:11, 54:15, 55:04, 55:13, 55:27, 55:39, 55:42, 56:10, 56:12, 59:02-59:03, 67:01:01-67:03, 81:01-81:05
						19		*07:65
								*07:78, 13:31, 54:20, 55:09, 55:21
13	14	15	16	17	18	19	20	Well No.

Lot No.: **15L**

Lot-specific Information

[www.olerup-ssp.com](http://www.olerup-ssp.com)

Length of spec.	145	270	135	190	155	205	130	170	75	150	85	105
PCR product(s)			290			235						
Well No.	1	2	3	4	5	6	7	8	9	10	11	12
*08:21, 27:47, 44:02:01:01-44:02:07, 44:02:09-44:02:14, 44:05:01, 44:08-44:09, 44:11-44:12, 44:14, 44:19N-44:20, 44:22-44:25, 44:27, 44:33-44:35, 44:41-44:42, 44:44, 44:48-44:49, 44:51-44:53, 44:55, 44:58N-44:59, 44:62-44:63, 44:66-44:68, 44:70-44:75, 44:78, 44:80, 44:84, 44:86-44:91, 44:93, 44:95, 44:97, 44:99-44:100, 44:104, 44:106, 44:113, 83:01, C*03:36, C*03:77									9			
*08:25, 15:48, 27:38, 35:04:01-35:04:03, 35:09:01-35:09:02, 35:12:01-35:12:02, 35:22, 35:34, 35:39, 35:149, 40:63, 40:92, 44:03:01-44:03:12, 44:07, 44:13, 44:26, 44:29, 44:32, 44:36-44:40, 44:45-44:47, 44:50, 44:54, 44:57, 44:60-44:61N, 44:65, 44:69, 44:77, 44:81-44:82, 44:85, 44:94, 44:96, 44:98, 44:103, 44:105, 44:107-44:108N, 44:110-44:111, 44:114-44:115, 55:08, 56:15, 57:03:01-57:03:02, 57:07, 57:17, 57:32, 78:04									9			
*08:28, 08:35, 08:37, 42:09					5							
*08:32												
*08:49, 08:60, 42:13			3									
Well No.	1	2	3	4	5	6	7	8	9	10	11	12

Lot No.: **15L**

Lot-specific Information

www.olerup-ssp.com

90	95	105	160	275	140	125	60	Length of spec.
	130	205						PCR product(s)
13	14	15	16	17	18	19	20	Well No.
								*08:21, 27:47, 44:02:01:01-44:02:07, 44:02:09-44:02:14, 44:05:01, 44:08-44:09, 44:11-44:12, 44:14, 44:19N-44:20, 44:22-44:25, 44:27, 44:33-44:35, 44:41-44:42, 44:44, 44:48-44:49, 44:51-44:53, 44:55, 44:58N-44:59, 44:62-44:63, 44:66-44:68, 44:70-44:75, 44:78, 44:80, 44:84, 44:86-44:91, 44:93, 44:95, 44:97, 44:99-44:100, 44:104, 44:106, 44:113, 83:01, C*03:36, C*03:77
			16					*08:25, 15:48, 27:38, 35:04:01-35:04:03, 35:09:01-35:09:02, 35:12:01-35:12:02, 35:22, 35:34, 35:39, 35:149, 40:63, 40:92, 44:03:01-44:03:12, 44:07, 44:13, 44:26, 44:29, 44:32, 44:36-44:40, 44:45-44:47, 44:50, 44:54, 44:57, 44:60-44:61N, 44:65, 44:69, 44:77, 44:81-44:82, 44:85, 44:94, 44:96, 44:98, 44:103, 44:105, 44:107-44:108N, 44:110-44:111, 44:114-44:115, 55:08, 56:15, 57:03:01-57:03:02, 57:07, 57:17, 57:32, 78:04
	14							*08:28, 08:35, 08:37, 42:09
						19		*08:32
								*08:49, 08:60, 42:13
13	14	15	16	17	18	19	20	Well No.

Lot No.: **15L**

Lot-specific Information

www.olerup-ssp.com

Well No.	1	2	3	4	5	6	7	8	9	10	11	12
Length of spec.	145	270	135	190	155	205	130	170	75	150	85	105
PCR product(s)			290			235						
Well No.	1	2	3	4	5	6	7	8	9	10	11	12
*13:02:01-13:02:09, 13:08Q-13:09, 13:14-13:15, 13:19, 13:27, 13:30, 13:32-13:34, 13:37-13:38, 13:40, 35:60, 46:18, 54:01-54:02, 54:05N, 54:07-54:08N, 54:12-54:13, 54:16-54:19, 54:21-54:23, 55:02:01-55:02:06, 55:07, 55:10, 55:12, 55:16, 55:18-55:19, 55:22, 55:26, 55:30, 55:34-55:35, 55:41, 55:43, 55:46-55:48, 56:19N, 56:23, 59:01, 59:05												12
*13:03, 46:11, 49:11, 54:03, 56:01:01-56:01:04, 56:07-56:08, 56:14, 56:16-56:17, 56:20, 56:24, 56:26-56:30, 59:04				4					9			12
*13:04, 15:05:01-15:05:02, 15:20, 15:91, 15:123, 15:136, 15:151, 15:155, 35:01:01:01-35:01:21, 35:05:01-35:05:02, 35:07, 35:10, 35:16-35:17, 35:19, 35:23, 35:25-35:27, 35:30, 35:32, 35:37, 35:40N-35:42:02, 35:46-35:49, 35:52, 35:54, 35:57, 35:63, 35:68:01-35:68:02, 35:71, 35:77-35:78, 35:82, 35:89-35:92, 35:94, 35:97, 35:101:01-35:101:02, 35:103-35:104, 35:107-35:108:02, 35:110-35:113, 35:116, 35:119-35:126, 35:130N-35:134N, 35:137-35:139, 35:143-35:148, 44:43:01-44:43:02, 46:13:01-46:13:03, 46:19, 46:26, 48:02:01-48:02:02, 56:09, 57:01:01-57:01:02, 57:01:04, 57:01:06-57:01:10, 57:06, 57:08, 57:10-57:11, 57:15-57:16, 57:18, 57:20-57:21, 57:23, 57:29, 57:33-57:37									9	10	11	
Well No.	1	2	3	4	5	6	7	8	9	10	11	12



Lot No.: **15L**

Lot-specific Information

www.olerup-ssp.com

13	14	15	16	17	18	19	20	Well No.
90	95	105	160	275	140	125	60	Length of spec.
	130	205						PCR product(s)
13	14	15	16	17	18	19	20	Well No.
			16					*13:02:01-13:02:09, 13:08Q-13:09, 13:14-13:15, 13:19, 13:27, 13:30, 13:32-13:34, 13:37-13:38, 13:40, 35:60, 46:18, 54:01-54:02, 54:05N, 54:07-54:08N, 54:12-54:13, 54:16-54:19, 54:21-54:23, 55:02:01-55:02:06, 55:07, 55:10, 55:12, 55:16, 55:18-55:19, 55:22, 55:26, 55:30, 55:34-55:35, 55:41, 55:43, 55:46-55:48, 56:19N, 56:23, 59:01, 59:05
			16					*13:03, 46:11, 49:11, 54:03, 56:01:01-56:01:04, 56:07-56:08, 56:14, 56:16-56:17, 56:20, 56:24, 56:26-56:30, 59:04
			16					*13:04, 15:05:01-15:05:02, 15:20, 15:91, 15:123, 15:136, 15:151, 15:155, 35:01:01:01-35:01:21, 35:05:01-35:05:02, 35:07, 35:10, 35:16-35:17, 35:19, 35:23, 35:25-35:27, 35:30, 35:32, 35:37, 35:40N-35:42:02, 35:46-35:49, 35:52, 35:54, 35:57, 35:63, 35:68:01-35:68:02, 35:71, 35:77-35:78, 35:82, 35:89-35:92, 35:94, 35:97, 35:101:01-35:101:02, 35:103-35:104, 35:107-35:108:02, 35:110-35:113, 35:116, 35:119-35:126, 35:130N-35:134N, 35:137-35:139, 35:143-35:148, 44:43:01-44:43:02, 46:13:01-46:13:03, 46:19, 46:26, 48:02:01-48:02:02, 56:09, 57:01:01-57:01:02, 57:01:04, 57:01:06-57:01:10, 57:06, 57:08, 57:10-57:11, 57:15-57:16, 57:18, 57:20-57:21, 57:23, 57:29, 57:33-57:37
13	14	15	16	17	18	19	20	Well No.

Lot No.: **15L**

Lot-specific Information

[www.olerup-ssp.com](http://www.olerup-ssp.com)

Length of spec.	145	270	135	190	155	205	130	170	75	150	85	105
PCR product(s)			290			235						
Well No.	1	2	3	4	5	6	7	8	9	10	11	12
*13:10										10	w	
*13:16, 15:42, 49:07, 55:01:01-55:01:03, 55:01:05-55:01:06, 55:03, 55:05, 55:11, 55:15, 55:24-55:25, 55:29, 55:31, 55:33, 55:36, 55:38, 55:40, 55:45								8				12
*13:18, 45:08, 45:10, 54:10, 55:37												12
*13:25						6						
*13:26, 15:52, 15:114, 15:124, 15:186, 27:41, 35:01:22, 35:15, 35:35, 35:93, 35:140, 39:07, 46:21:01-46:21:02, 48:14, 54:09, 54:14, 55:23, 55:32, 56:18, 57:01:03, 57:25-57:26										10	11	
*14:05								8				
*14:10, 35:96, 40:28		2						8				
*14:19, 15:133, 50:09, 50:12				4				8				
Well No.	1	2	3	4	5	6	7	8	9	10	11	12

Lot No.: **15L**

Lot-specific Information

www.olerup-ssp.com

90	95	105	160	275	140	125	60	Length of spec. PCR product(s)
13	14	15	16	17	18	19	20	Well No.
	130	205						
			16					*13:10
			16					*13:16, 15:42, 49:07, 55:01:01-55:01:03, 55:01:05-55:01:06, 55:03, 55:05, 55:11, 55:15, 55:24-55:25, 55:29, 55:31, 55:33, 55:36, 55:38, 55:40, 55:45
			16					*13:18, 45:08, 45:10, 54:10, 55:37
			16					*13:25
			16					*13:26, 15:52, 15:114, 15:124, 15:186, 27:41, 35:01:22, 35:15, 35:35, 35:93, 35:140, 39:07, 46:21:01-46:21:02, 48:14, 54:09, 54:14, 55:23, 55:32, 56:18, 57:01:03, 57:25-57:26
	14		16					*14:05
			16					*14:10, 35:96, 40:28
			16					*14:19, 15:133, 50:09, 50:12
13	14	15	16	17	18	19	20	Well No.

Lot No.: **15L**

Lot-specific Information

www.olerup-ssp.com

Length of spec.	145	270	135	190	155	205	130	170	75	150	85	105
PCR product(s)			290			235						
Well No.	1	2	3	4	5	6	7	8	9	10	11	12
*15:01:01:01-15:01:04, 15:01:06-15:01:20, 15:04, 15:08, 15:11:01-15:12, 15:14-15:15, 15:19, 15:24, 15:26N-15:28, 15:34-15:35, 15:43, 15:46-15:47, 15:49-15:50, 15:53-15:54, 15:56-15:57, 15:60, 15:66, 15:70-15:71, 15:76, 15:79N, 15:81-15:82, 15:85, 15:87, 15:92, 15:94N, 15:96-15:97, 15:101-15:102, 15:104, 15:109-15:110, 15:113, 15:117-15:118, 15:120, 15:122, 15:125-15:126, 15:129, 15:135, 15:140, 15:142-15:143, 15:146-15:149N, 15:152, 15:154, 15:157, 15:159-15:160, 15:163-15:167, 15:169, 15:171-15:172, 15:174-15:175, 15:178, 15:180-15:184, 15:187, 15:189-15:193, 15:201, 15:203, 15:205-15:207, 15:209N, 35:14:01-35:14:02, 35:43:01-35:43:02, 35:67, 35:79, 35:86, 35:102, 35:117, 35:135, 46:01:01-46:05, 46:07N, 46:10, 46:14-46:17, 46:20, 46:22-46:24, 54:06, 56:03								8			11	
*15:02:01-15:02:05, 15:06, 15:13, 15:21, 15:25:01-15:25:02, 15:36, 15:44, 15:89, 15:106, 15:112, 15:121, 15:139, 15:156, 15:170, 15:204, 49:05								8			w	
Well No.	1	2	3	4	5	6	7	8	9	10	11	12

Lot No.: **15L**

Lot-specific Information

www.olerup-ssp.com

90	95	105	160	275	140	125	60	Length of spec. PCR product(s)
13	14	15	16	17	18	19	20	Well No.
	130	205						*15:01:01-15:01:04, 15:01:06-15:01:20, 15:04, 15:08, 15:11:01-15:12, 15:14-15:15, 15:19, 15:24, 15:26N-15:28, 15:34-15:35, 15:43, 15:46-15:47, 15:49-15:50, 15:53-15:54, 15:56-15:57, 15:60, 15:66, 15:70-15:71, 15:76, 15:79N, 15:81-15:82, 15:85, 15:87, 15:92, 15:94N, 15:96-15:97, 15:101-15:102, 15:104, 15:109-15:110, 15:113, 15:117-15:118, 15:120, 15:122, 15:125-15:126, 15:129, 15:135, 15:140, 15:142-15:143, 15:146-15:149N, 15:152, 15:154, 15:157, 15:159-15:160, 15:163-15:167, 15:169, 15:171-15:172, 15:174-15:175, 15:178, 15:180-15:184, 15:187, 15:189-15:193, 15:201, 15:203, 15:205-15:207, 15:209N, 35:14:01-35:14:02, 35:43:01-35:43:02, 35:67, 35:79, 35:86, 35:102, 35:117, 35:135, 46:01:01-46:05, 46:07N, 46:10, 46:14-46:17, 46:20, 46:22-46:24, 54:06, 56:03
			16					*15:02:01-15:02:05, 15:06, 15:13, 15:21, 15:25:01-15:25:02, 15:36, 15:44, 15:89, 15:106, 15:112, 15:121, 15:139, 15:156, 15:170, 15:204, 49:05
13	14	15	16	17	18	19	20	Well No.

Lot No.: **15L**

Lot-specific Information

www.olerup-ssp.com

Length of spec.	145	270	135	190	155	205	130	170	75	150	85	105
PCR product(s)			290			235						
Well No.	1	2	3	4	5	6	7	8	9	10	11	12
*15:03:01-15:03:03, 15:16, 15:18:01-15:18:04, 15:23, 15:25:03, 15:29, 15:39:01-15:40, 15:61-15:62, 15:64, 15:67, 15:69, 15:74, 15:80, 15:93, 15:95, 15:98, 15:103, 15:108, 15:119, 15:127, 15:131-15:132, 15:134, 15:138, 15:153, 15:158, 15:161, 15:173, 15:194-15:195, 15:197-15:198, 35:11:01-35:11:02, 40:158, 46:08, 49:04, 55:14, 57:22								8			11	
*15:07:01-15:07:02, 15:68, 46:12								8			11	
*15:31									9	10	w	
*15:32							7	8			11	
*15:38:01-15:38:02						6		8			11	
*15:51, 15:179, 35:115, 44:17, 45:09, 57:24					5				9		11	
*15:55									9	10	w	
*15:58, 15:73, 15:137				4				8				
*15:65, 35:99								8			11	
*15:75, 15:105, 15:111N, 15:145											11	
*15:84, 35:08:01-35:08:04, 35:45, 35:61, 35:80, 35:100, 35:105, 35:142, 57:19									9	w	11	
*15:88											w	
*15:107, 35:53N, 35:64, 35:114, 57:01:05, 57:31									9	10		
*15:115						6		8			11	
*15:128, 15:144								8			w	
*15:176, 15:200											11	
*15:185						6			9	10	11	
*15:199					5			8			11	
*15:202								8			11	
Well No.	1	2	3	4	5	6	7	8	9	10	11	12

Lot No.: **15L**

Lot-specific Information

www.olerup-ssp.com

90	95	105	160	275	140	125	60	Length of spec. PCR product(s)
13	14	15	16	17	18	19	20	Well No.
			16					*15:03:01-15:03:03, 15:16, 15:18:01-15:18:04, 15:23, 15:25:03, 15:29, 15:39:01-15:40, 15:61-15:62, 15:64, 15:67, 15:69, 15:74, 15:80, 15:93, 15:95, 15:98, 15:103, 15:108, 15:119, 15:127, 15:131-15:132, 15:134, 15:138, 15:153, 15:158, 15:161, 15:173, 15:194-15:195, 15:197-15:198, 35:11:01-35:11:02, 40:158, 46:08, 49:04, 55:14, 57:22
	14							*15:07:01-15:07:02, 15:68, 46:12
			16					*15:31
								*15:32
								*15:38:01-15:38:02
								*15:51, 15:179, 35:115, 44:17, 45:09, 57:24
	14		16					*15:55
								*15:58, 15:73, 15:137
							20	*15:65, 35:99
								*15:75, 15:105, 15:111N, 15:145
							20	*15:84, 35:08:01-35:08:04, 35:45, 35:61, 35:80, 35:100, 35:105, 35:142, 57:19
			w					*15:88
			16					*15:107, 35:53N, 35:64, 35:114, 57:01:05, 57:31
			16					*15:115
								*15:128, 15:144
			w					*15:176, 15:200
			16					*15:185
								*15:199
		15						*15:202
13	14	15	16	17	18	19	20	Well No.

Lot No.: **15L**

Lot-specific Information

www.olerup-ssp.com

Length of spec.	145	270	135	190	155	205	130	170	75	150	85	105
PCR product(s)			290			235						
Well No.	1	2	3	4	5	6	7	8	9	10	11	12
*18:01:01-18:01:03, 18:01:05-18:02, 18:05-18:06, 18:08, 18:12, 18:17N, 18:23N-18:24, 18:27-18:28, 18:31-18:32, 18:34, 18:38-18:39, 18:42-18:47, 18:49-18:52						6				10	11	
*18:01:04, 18:40						6				10		
*18:03						6				10	11	
*18:04, 18:25						6				10	11	
*18:07:01-18:07:02, 18:29, 18:33						6				10	11	
*18:09					5	6				10	11	
*18:10-18:11, 18:35										10	11	
*18:13						6				w	11	
*18:14						6				10	11	
*18:15						6		8			11	
*18:18						6	7			10	11	
*18:19, 18:30						6		8			11	
*18:20						6				10	w	
*18:21								8				
*18:22		2				6				10	11	
*18:26, 18:41												
*18:36						6			9	10	11	
*18:37, 18:48, 39:43						6				10	11	
*27:52			3									
*35:02:01-35:02:04, 35:83, 35:95									9			
*35:03:01-35:03:05, 35:03:07, 35:06, 35:13, 35:36, 35:55-35:56, 35:59, 35:70, 35:74-35:75, 35:85, 35:98, 35:106, 35:127-35:128, 35:150-35:151, 39:32, 40:71, 44:10, 56:02, 56:04, 56:11, 56:22				4						9		
*35:18, 44:28:01-44:28:02, 57:02:01-57:02:02, 57:04-57:05, 57:12, 57:28N										9		
*35:20:01-35:20:02, 35:28									9	10	11	
*35:21		2				6		8			11	
*35:24:01-35:24:02, 57:14		2				6			9	10	11	
*35:29, 35:69, 35:76									9	10	11	
*35:38, 45:02, 82:01-82:03, C*04:34				4					9			
*35:50									9	10	11	
Well No.	1	2	3	4	5	6	7	8	9	10	11	12



Lot No.: **15L**

Lot-specific Information

www.olerup-ssp.com

90	95	105	160	275	140	125	60	Length of spec. PCR product(s)
13	14	15	16	17	18	19	20	Well No.
		15	16		18			*18:01:01-18:01:03, 18:01:05-18:02, 18:05-18:06, 18:08, 18:12, 18:17N, 18:23N-18:24, 18:27-18:28, 18:31-18:32, 18:34, 18:38-18:39, 18:42-18:47, 18:49-18:52
		15	16		18			*18:01:04, 18:40
		15	16		18	19		*18:03
		15	16					*18:04, 18:25
			16		18			*18:07:01-18:07:02, 18:29, 18:33
		15	16		18			*18:09
		15	16		18			*18:10-18:11, 18:35
		15			18			*18:13
	14	15	16		18			*18:14
		15	16		18			*18:15
		15	16		18			*18:18
		15			18			*18:19, 18:30
		15	16		18			*18:20
		15			18			*18:21
		15	16		18			*18:22
		15	16		18			*18:26, 18:41
		15	16		18			*18:36
			16					*18:37, 18:48, 39:43
			16		18			*27:52
		15	16					*35:02:01-35:02:04, 35:83, 35:95
			16					*35:03:01-35:03:05, 35:03:07, 35:06, 35:13, 35:36, 35:55-35:56, 35:59, 35:70, 35:74-35:75, 35:85, 35:98, 35:106, 35:127-35:128, 35:150-35:151, 39:32, 40:71, 44:10, 56:02, 56:04, 56:11, 56:22
							20	*35:18, 44:28:01-44:28:02, 57:02:01-57:02:02, 57:04-57:05, 57:12, 57:28N
		15	16					*35:20:01-35:20:02, 35:28
			16					*35:21
			16					*35:24:01-35:24:02, 57:14
			16			19		*35:29, 35:69, 35:76
								*35:38, 45:02, 82:01-82:03, C*04:34
			16		18			*35:50
13	14	15	16	17	18	19	20	Well No.

Lot No.: **15L**

Lot-specific Information

www.olerup-ssp.com

Length of spec.	145	270	135	190	155	205	130	170	75	150	85	105
PCR product(s)			290			235						
Well No.	1	2	3	4	5	6	7	8	9	10	11	12
*35:51									9	10	11	
*35:58								8			11	
*35:62, 57:27									9	w	11	
*35:66										w	11	
*35:72									9	10	11	
*35:81		2							9			
*35:84				4					9			
*35:109		2		4					9			
*35:136				4					9			
*35:141									9		11	
*37:01:01-37:01:05, 37:01:07, 37:03N, 37:05, 37:08, 37:15-37:18, 37:20, 37:22-37:25			3				7					
*37:01:06							7					
*37:02			3									
*37:04:01-37:04:02		2	3				7					
*37:06							7					
*37:07			3					8				
*37:09, 37:12, 37:19			3									
*37:10					5		7					
*37:11, 37:14							7					
*37:13			3				7	8				
*37:21			3				7					
*38:06-38:07	1											
*39:09							7					
*39:19:01-39:19:02												
*39:24, 39:37												
*39:33				4					9			
*40:03										10		
*40:20, 40:38, 40:52, 40:59-40:60, 40:105, 46:06, 48:23										10		
*44:02:08, 44:101									w			
*44:06, 51:08, 51:44N	1								9			
*44:15				4		6			9			12
Well No.	1	2	3	4	5	6	7	8	9	10	11	12

Lot No.: **15L**

Lot-specific Information

www.olerup-ssp.com

90	95	105	160	275	140	125	60	Length of spec. PCR product(s)
13	14	15	16	17	18	19	20	Well No.
	130	205						
	14		16					*35:51
	14		16					*35:58
								*35:62, 57:27
	14							*35:66
	14	15	16					*35:72
		15	16					*35:81
			16		18			*35:84
			16					*35:109
			16			19		*35:136
			16					*35:141
		15			18			*37:01:01-37:01:05, 37:01:07, 37:03N, 37:05, 37:08, 37:15-37:18, 37:20, 37:22-37:25
					18			*37:01:06
		15	16		18			*37:02
		15			18			*37:04:01-37:04:02
								*37:06
		15			18			*37:07
		15			18			*37:09, 37:12, 37:19
		15			18			*37:10
		15			18			*37:11, 37:14
		15			18			*37:13
					18			*37:21
			16		18			*38:06-38:07
			16					*39:09
			16		18	19		*39:19:01-39:19:02
	14		16					*39:24, 39:37
							20	*39:33
	14		16					*40:03
			16					*40:20, 40:38, 40:52, 40:59-40:60, 40:105, 46:06, 48:23
								*44:02:08, 44:101
								*44:06, 51:08, 51:44N
								*44:15
13	14	15	16	17	18	19	20	Well No.

Lot No.: **15L**

Lot-specific Information

www.olerup-ssp.com

Length of spec.	145	270	135	190	155	205	130	170	75	150	85	105
PCR product(s)			290			235						
Well No.	1	2	3	4	5	6	7	8	9	10	11	12
*44:18, 45:01, 45:04-45:07, 45:13, 56:13				4					9			12
*44:83					5				9			
*44:109						6			9			
*45:03									9			12
*45:11				4								12
*45:12				4					9			12
*46:09, 46:25									9		11	
*49:01:01, 49:02, 49:06, 49:08-49:10, 49:12-49:15, 50:01:01-50:02, 50:04-50:08, 50:10-50:11, 56:25				4				8				12
*49:01:02				4				8				12
*49:03	1			4				8				12
*51:01:01-51:03, 51:06-51:07:02, 51:11N-51:12, 51:14, 51:16-51:18, 51:21-51:24:04, 51:26-51:28, 51:30, 51:32-51:35, 51:38-51:39, 51:41N, 51:43, 51:48-51:52, 51:58-51:60, 51:64-51:71, 51:74-51:77, 51:79-51:80, 51:83-51:86, 51:88-51:90, 51:94-51:96, 51:98N-51:102, 51:105, 52:06:01-52:06:02	1							8				
*51:04, 51:46, 51:56	1	2						8				
*51:05	1								9			
*51:09:01-51:09:02, 51:19, 51:40, 51:42, 51:73	1								9			
*51:10, 51:31, 51:81, 51:93	1											
*51:13:01-51:13:02, 51:62, 51:92, 51:106	1			4				8				
*51:15	1			4					9			12
*51:20	1								9			
*51:29	1							8				
*51:36, 51:55, 51:61, 51:82	1							8				
*51:37, 51:45, 51:63	1							6			11	
*51:53	1											
*51:54					5				9			
Well No.	1	2	3	4	5	6	7	8	9	10	11	12

Lot No.: **15L**

Lot-specific Information

www.olerup-ssp.com

90	95	105	160	275	140	125	60	Length of spec. PCR product(s)
13	14	15	16	17	18	19	20	Well No.
								*44:18, 45:01, 45:04-45:07, 45:13, 56:13
		15						*44:83
			16					*44:109
								*45:03
								*45:11
		15						*45:12
								*46:09, 46:25
			16					*49:01:01, 49:02, 49:06, 49:08- 49:10, 49:12-49:15, 50:01:01- 50:02, 50:04-50:08, 50:10-50:11, 56:25
			w					*49:01:02
		15	16					*49:03
			16					*51:01:01-51:03, 51:06-51:07:02, 51:11N-51:12, 51:14, 51:16-51:18, 51:21-51:24:04, 51:26-51:28, 51:30, 51:32-51:35, 51:38-51:39, 51:41N, 51:43, 51:48-51:52, 51:58- 51:60, 51:64-51:71, 51:74-51:77, 51:79-51:80, 51:83-51:86, 51:88- 51:90, 51:94-51:96, 51:98N- 51:102, 51:105, 52:06:01-52:06:02
			16					*51:04, 51:46, 51:56
							20	*51:05
			16					*51:09:01-51:09:02, 51:19, 51:40, 51:42, 51:73
			16					*51:10, 51:31, 51:81, 51:93
			16					*51:13:01-51:13:02, 51:62, 51:92, 51:106
			16					*51:15
						19		*51:20
							20	*51:29
								*51:36, 51:55, 51:61, 51:82
			16					*51:37, 51:45, 51:63
			w					*51:53
							20	*51:54
13	14	15	16	17	18	19	20	Well No.

Lot No.: **15L**

Lot-specific Information

www.olerup-ssp.com

Length of spec.	145	270	135	190	155	205	130	170	75	150	85	105
PCR product(s)			290			235						
Well No.	1	2	3	4	5	6	7	8	9	10	11	12
*51:57, 51:103	1							8				
*51:72, 51:87, 51:91	1							8				
*51:78					5			8				
*51:97	1				5	6			9		11	
*52:01:01-52:01:06, 52:04-52:05, 52:07-52:08, 52:11-52:13, 52:15, 52:17-52:18, 52:22	1							8				
*52:09	1		3					8				
*52:14	1			4				8				
*52:19	1								9			
*52:20					5			8				
*52:21	1							8				
*56:06, 78:01, 78:03, 78:07								8				
*57:30											11	
*58:01:01-58:01:02, 58:01:04- 58:02, 58:04, 58:07, 58:10N-58:16, 58:18, 58:21, 58:23-58:26, 58:29- 58:31N	1								9	10	11	
*58:01:03	1								9	10		
*58:05	1										11	
*58:06, 58:19	1							8			11	
*58:08	1							8				
*58:09	1	2				6			9	10	11	
*58:17N									9	10	11	
*58:20, 58:27	1											
*58:22	1								9	w	11	
*58:28	1								9			
A*02:188										w		
C*03:12, C*03:19, C*03:26, C*03:102				w								
C*03:28, C*03:49, C*14:20												
C*04:08, C*05:39				4								
C*05:27, C*08:41, C*15:15, C*17:07				4								
C*06:20, C*07:81											w	
C*07:68, C*07:140, C*07:151					5							
C*08:08												
C*15:39		2										
Well No.	1	2	3	4	5	6	7	8	9	10	11	12

Lot No.: **15L**

Lot-specific Information

www.olerup-ssp.com

90	95	105	160	275	140	125	60	Length of spec. PCR product(s)
13	14	15	16	17	18	19	20	Well No.
	130	205						
			16		18			*51:57, 51:103
			w					*51:72, 51:87, 51:91
			16					*51:78
								*51:97
		15	16					*52:01:01-52:01:06, 52:04-52:05, 52:07-52:08, 52:11-52:13, 52:15, 52:17-52:18, 52:22
		15	16					*52:09
		15	16					*52:14
		15						*52:19
		15	16					*52:20
		15						*52:21
			16			19		*56:06, 78:01, 78:03, 78:07
							20	*57:30
13			16					*58:01:01-58:01:02, 58:01:04- 58:02, 58:04, 58:07, 58:10N-58:16, 58:18, 58:21, 58:23-58:26, 58:29- 58:31N
13			16					*58:01:03
13			16					*58:05
13			16					*58:06, 58:19
13			16					*58:08
13			16					*58:09
13			16					*58:17N
13			16					*58:20, 58:27
13							20	*58:22
13			16					*58:28
								A*02:188
								C*03:12, C*03:19, C*03:26, C*03:102
							20	C*03:28, C*03:49, C*14:20
							20	C*04:08, C*05:39
								C*05:27, C*08:41, C*15:15, C*17:07
								C*06:20, C*07:81
								C*07:68, C*07:140, C*07:151
	14							C*08:08
								C*15:39
13	14	15	16	17	18	19	20	Well No.

Lot No.: **15L**

Lot-specific Information

[www.olerup-ssp.com](http://www.olerup-ssp.com)

<sup>1</sup>The internal positive control primer pairs amplify segments of the human growth hormone gene. The two different control primer pairs give rise to either an internal positive control band of 1070 base pairs, for most wells, or a band of 800 base pairs, for some wells.

Well number 1 contains the primer pair giving rise to the shorter, 800 bp, internal positive control band in order to help in the correct orientation of the HLA- B\*53 subtyping. In addition, wells number 3 to 7, 11 and 15 contain the primer pair giving rise to the shorter, 800 bp, internal positive control band in order to allow kit identification. In the presence of a specific amplification the intensity of the control band often decreases.

<sup>2</sup>The nucleotide position, in the 1<sup>st</sup>, 2<sup>nd</sup> or 3<sup>rd</sup> exon, 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, in the 1<sup>st</sup>, 2<sup>nd</sup> or 3<sup>rd</sup> exon or the 3<sup>rd</sup> intron 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.

<sup>4</sup>The B\*53:19, B\*52:03 and B\*52:10 give rise to identical amplification patterns with the HLA-B\*53 subtyping kit. These three alleles can be distinguished by the HLA-B low resolution kit and/or the HLA-B\*52 subtyping kit.

<sup>5</sup>Primer mix 3: Specific PCR fragment of 135 bp in the B\*53:03, \*53:05 and 53:16 and in the B\*27:52, 37:01:01-37:01:05, 37:01:07-37:05, 37:07-37:09, 37:12-37:13, 37:15-37:25 and 52:09 alleles. Specific PCR fragment of 290 bp in the B\*53:15, 08:49, 08:60, 37:07, 42:13 alleles.

Primer mix 6: Specific PCR fragment of 205 bp in the B\*53:02 and 53:06 and in the B\*15:38:01-15:38:02, 15:185, 18:01:01-18:09, 18:12-18:15, 18:17N-18:20, 18:22-18:25, 18:27-18:34, 18:36-18:40, 18:42-18:52, 35:21, 35:24:01-35:24:02, 39:43, 51:37, 51:45, 51:63, 51:97, 57:14 and 58:09 alleles. Specific PCR fragment of 235 bp in the the B\*53:05, 53:12 and 53:16 and in the B\*13:25, 15:115, 44:15 and 44:109 alleles.

Primer mix 14: Specific PCR fragment of 95 bp in the B\*53:14 and in the B\*07:09, 07:11, 07:17, 07:115, 08:28, 08:35, 08:37, 14:05, 15:07:01-15:07:02, 15:55, 15:68, 18:14, 35:51, 35:58, 35:66, 35:72, 39:24, 39:37, 40:03, 42:09 and 46:12 and the C\*08:08 alleles. Specific PCR fragment of 130 bp in the B\*53:10 allele.

Primer mix 15: Specific PCR fragment of 105 bp in the B\*53:09 and 53:17 and in the B\*15:202, 18:01:01-18:06, 18:08-18:15, 18:17N-18:28, 18:30-18:32, 18:34-18:36, 18:38-18:47, 18:49-18:52, 35:20:01-35:20:02, 35:28, 35:72, 37:01:01-37:01:05, 37:01:07-37:05, 37:07-37:20, 37:22-37:25, 44:83, 49:03, 52:01:01-52:01:06, 52:03-52:05, 52:07-52:15 and 52:17-52:21 alleles. Specific PCR fragment of 205 bp in the B\*53:19 and in the B\*35:02:01-35:02:04, 35:81, 35:83 and 45:12 alleles. Specific PCR fragments of 105 and 205 bp in the B\*35:95 allele.

'w', might be weakly amplified.



CELL LINE VALIDATION SHEET																			
HLA-B*53 SSP subtyping kit																			
	IHC cell line	B*	Prod. No.:	Well															
				1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
			200966401																
			200966402																
			200966403																
			200966404																
			201183205																
			200966406																
			200966407																
			200966408																
			200966409																
			200966410																
			200966411																
			200966412																
			200966413																
			200966414																
			200966415																
			200966416																
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	9025 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	-	-	-	-	-	-	-	-	+	+	+	-	-	-	+	

CELL LINE VALIDATION SHEET									
HLA-B*53 SSP subtyping kit									
					Well				
					17	18	19	20	
					Prod. No.:	201183217	201183218	201183219	201183220
	IHC cell line		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	9025	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	-	-	-	-	

## CERTIFICATE OF ANALYSIS

### Olerup SSP® HLA-B\*53 SSP

Product number: 101.549-06u – without *Taq* polymerase  
Lot number: 15L  
Expiry date: 2013-September-01  
Number of tests: 6  
Number of wells per test: 20

#### Well specifications:

Well No.	Production No.	Well No.	Production No.	Well No.	Production No.
1	2009-664-01	9	2009-664-09	17	2011-832-17
2	2009-664-02	10	2009-664-10	18	2011-832-18
3	2009-664-03	11	2009-664-11	19	2011-832-19
4	2009-664-04	12	2009-664-12	20	2011-832-20
5	2011-832-05	13	2009-664-13		
6	2009-664-06	14	2009-664-14		
7	2009-664-07	15	2009-664-15		
8	2009-664-08	16	2009-664-16		

The specificity of each primer solution of the HLA-B\*53 primer set has been tested against 48 well characterized IHWC cell line DNAs.

No DNAs carrying the alleles to be amplified by primer solutions 2, 5 and 17 were available. The specificities of the primers in primer solutions 2 and 5 were tested by separately adding one additional 3'-primer, respectively one additional 5'-primer. In primer solution 17 it was only possible to test the 3'-primer, the 5'-primer was not possible to test.

In primer solutions 4, 6 and 13 one of the 3'-primers was not possible to test.

Additional primers in primer solutions 3, 6, 14 and 19 were tested by separately adding one additional 3'-primer and/or one additional 5'-primer.

**Results:** No false positive or false negative amplifications were obtained.

**Date of approval:** 2013-March-18

**Approved by:**

#### Production Quality Control

## Declaration of Conformity

**Product name:** *Olerup* SSP® HLA-B\*53  
**Product number:** 101.549-06u  
**Lot number:** 15L

**Intended use:** HLA-B\*53 high resolution histocompatibility testing

**Manufacturer:** *Olerup* SSP AB  
Franzengatan 5  
SE-112 51 Stockholm, Sweden  
**Phone:** +46-8-717 88 27  
**Fax:** +46-8-717 88 18

We, *Olerup* SSP AB, hereby declare that this product, to which this Declaration of Conformity relates is in conformity with the following Standard(s) and other normative document(s) ISO 9001:2008 and ISO 13485:2003, following the provisions of the 98/79/EC Directive on *in vitro* diagnostic medical devices, Annex II List B, conformity assessed using Annex IV, as transposed into the national laws of the Member States of the European Union.

The Technical Documentation File is maintained at *Olerup* SSP AB, Franzengatan 5, SE-112 51 Stockholm, Sweden.

Notified Body: Lloyd's Register Quality Assurance Limited, Hiramford, Middlemarch Office Village, Siskin Drive, Coventry CV3 4FJ, United Kingdom. (Notified Body number: 0088.)

Stockholm, Sweden  
2013-March-18

Ann-Cathrin Jareman  
Head of QA and Regulatory Affairs







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