

101.101.48/12 – including *Taq* pol., IFU-01  
101.101.48u/12u – without *Taq* pol., IFU-02

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“Instructions for Use” (IFU)

Lot No.: **77V**

Lot-specific information

## **Olerup SSP® DR low resolution**

<b>Product number:</b>	<b>101.101-48/12 – including <i>Taq</i> pol. 101.101-48u/12u – without <i>Taq</i> pol.</b>
<b>Lot number:</b>	<b>77V</b>
<b>Expiry date:</b>	<b>2016-December-01</b>
<b>Number of tests:</b>	<b>48 tests – Product No. 101.101-48/48u 12 tests – Product No. 101.101-12/12u</b>
<b>Number of wells per test:</b>	<b>31 + 1</b>
<b>Storage - pre-aliquoted primers:</b>	<b>dark at -20°C</b>
- PCR Master Mix:	-20°C
- Adhesive PCR seals	RT
- Product Insert	RT

### **This Product Description is only valid for Lot No. 77V.**

Complete product documentation consists of generic Instructions for Use (IFU), lot specific Product Insert, Worksheet and Certificate.

### **CHANGES COMPARED TO THE PREVIOUS OLERUP SSP® DR LOW RESOLUTION LOT (93S)**

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

The DR low resolution specificity and interpretation tables have been updated for the HLA-DRB1 alleles described since the previous *Olerup SSP®* DR low resolution lot was made (**Lot No. 93S**).

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.

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

<b>Well</b>	<b>5'-primer</b>	<b>3'-primer</b>	<b>rationale</b>
3	Added	Added	3'-primer added for the DRB1*15:100 allele, 5'-primer added for the DRB1*15:01:22 allele.
14	Added	-	5'-primer added for the DRB1*12:41 allele.

Change in revision R01 compared to R00:

1. Primer mix 21 does not amplify the DRB1\*08:14 allele. This has been corrected in the Specificity and Interpretation Tables.

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Well **32** 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
<b>5'-primer<sup>1</sup></b>	<b>164</b>	<b>340</b>	<b>440</b>	<b>45</b>	<b>45</b>	<b>43</b>	<b>36</b>
	5'-CAC <sup>3'</sup>	5'-Agg <sup>3'</sup>	5'-TTA <sup>3'</sup>	5'-Tgg <sup>3'</sup>	5'-Tgg <sup>3'</sup>	5'-Tgg <sup>3'</sup>	5'-TAC <sup>3'</sup>
							36
							5'-TAT <sup>3'</sup>
<b>3'-primer<sup>2</sup></b>	<b>231</b>	<b>2<sup>nd</sup> I</b>	<b>507</b>	<b>59</b>	<b>58</b>	<b>57</b>	<b>47</b>
	5'-TgC <sup>3'</sup>	5'-AAA <sup>3'</sup>	5'-TTg <sup>3'</sup>	5'-CTC <sup>3'</sup>	5'-ggC <sup>3'</sup>	5'-CTC <sup>3'</sup>	5'-ACA <sup>3'</sup>
							48
							5'-gCA <sup>3'</sup>
							48
							5'-gCC <sup>3'</sup>
							52
							5'-TgT <sup>3'</sup>
<b>A*</b>	<b>+</b>	<b>+</b>	<b>+</b>				
<b>B*</b>	<b>+</b>	<b>+</b>	<b>+</b>				
<b>C*</b>	<b>+</b>	<b>+</b>	<b>+</b>				
<b>DRB1</b>				<b>+</b>	<b>+</b>		
<b>DRB3</b>				<b>+</b>	<b>+</b>		
<b>DRB5</b>				<b>+</b>			
<b>DQB1</b>					<b>+</b>		
<b>DPB1</b>						<b>+</b>	
<b>DQA1</b>							<b>+</b>

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

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

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Lot-specific information

## PRODUCT DESCRIPTION

### DR low resolution

#### CONTENT

The primer set contains 5'- and 3'-primers for grouping the DRB1\*01:01 to DRB1\*10:07 alleles into the corresponding serological groups DR1 to DR18 as well as primer pairs for recognizing the DRB3, DRB4 and DRB5 groups of alleles.

#### PLATE LAYOUT

Each test consists of 32 PCR reactions in a 32 well cut 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	NC

The 32 well cut PCR plate is marked with ‘DR low’ in silver/gray ink.

Well No. 1 is marked with the Lot No. ‘77V’.

Wells 1 to 31 – DR low resolution primers.

Well 32 – Negative Control.

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.

**Please note:** When removing each 32 well PCR plate, make sure that the remaining plates stay covered. Use a scalpel or a similar instrument to carefully cut the foil between the plates.

#### INTERPRETATION

Only HLA-DRB alleles will be amplified by the 31 wells of the DR low resolution primer set, **wells 1 to 31**. Thus, the interpretation of DR low resolution typings is not influenced by other HLA class II genes.

#### UNIQUELY IDENTIFIED ALLELES

All the HLA-DRB1, -DRB3, -DRB4<sup>1</sup> and -DRB5 alleles, i.e. **DRB1\*01:01 to 10:07, DRB3\*01:01:02:01 to DRB3\*03:03, DRB4\*01:01:01:01 to DRB4\*01:08, DRB5\*01:01:01 to DRB5\*02:06**, recognized by the HLA Nomenclature Committee in January 2014<sup>2,3</sup> will be amplified by the primers in the DR low resolution SSP kit. The HLA-DRB alleles will be grouped into their corresponding serological specificities.

<sup>1</sup>The DRB4\*02:01N and DRB4\*03:01N null alleles will not be amplified by the DR low resolution primer set.

<sup>2</sup>DRB alleles listed on the IMGT/HLA web page 2014-January-17, release 3.15.0, [www.ebi.ac.uk/imgt/hla](http://www.ebi.ac.uk/imgt/hla).

<sup>3</sup>Alleles that have been deleted from or renamed in the official WHO HLA Nomenclature up to and including the last IMGT/HLA database release can be retrieved from web page <http://hla.alleles.org/alleles/deleted.html>.

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Lot-specific information  
**SPECIFICITY TABLE**

**DR low resolution primer set**

**Specificities and sizes of the PCR products of the 31+1 primer mixes of the DR low resolution primer set**

Primer Mix	Size of spec. PCR product <sup>1</sup>	Size of control band <sup>2</sup>	DR serology <sup>3</sup>	Amplified HLA-DRB alleles <sup>4,6</sup>
1 <sup>6,7</sup>	205 bp, 230 bp, 255 bp	515 bp	1	*01:01:01-01:02:09, 01:04-01:38, 01:40N-01:60
2	200 bp	430 bp	1/103	*01:03, 01:39N, 01:42
3 <sup>6,9</sup>	200 bp, 225 bp	430 bp	2, 15	*15:01:01:01-15:104
4 <sup>9</sup>	210 bp	430 bp	16	*16:01:01-16:05:02, 16:07-16:24
5 <sup>5,6,7,12</sup>	120 bp, 220 bp	430 bp	3, 11, 17, 18	*03:01:01:01-03:75, 03:77-03:94, 11:07, 11:53, 11:103, 11:105, 11:107, 11:125, 15:25
6 <sup>5,6,12</sup>	80 bp, 210 bp	430 bp	3, 6, 11, 13, 14, 17	*03:01:01:01-03:01:22, 03:04:01-03:06, 03:08-03:16, 03:18-03:20, 03:22-03:23, 03:25-03:26, 03:28, 03:30-03:31, 03:33-03:34, 03:36-03:37, 03:43-03:48, 03:50-03:52, 03:54-03:68N, 03:70-03:73, 03:75-03:86, 03:89, 03:91-03:93, 08:40, 11:02:01-11:03, 11:11:01-11:11:02, 11:14:01-11:14:02, 11:16, 11:20-11:21, 11:36, 11:40-11:41, 11:48, 11:59, 11:63, 11:65:01-11:65:02, 11:68, 11:70, 11:73, 11:76, 11:79-11:80, 11:83, 11:85-11:87, 11:93, 11:118, 11:122, 11:124, 11:127, 11:131-11:132, 11:135, 11:138-11:139, 11:142, 11:151, 11:153, 13:01:01-13:04, 13:08, 13:10, 13:15-13:17, 13:19-13:20, 13:22-13:24, 13:27-13:29, 13:31-13:41, 13:43, 13:45, 13:48, 13:51-13:54, 13:57, 13:59, 13:61:01-13:61:02, 13:63-13:66:02, 13:68-13:76, 13:78-13:81, 13:83-13:85, 13:87-13:99, 13:101-13:102, 13:104-13:107, 13:109, 13:111-13:117, 13:120-13:131, 13:133, 13:135, 13:137N-13:145, 13:147-13:149, 13:151-13:153, 13:155, 13:159, 13:162, 13:165-13:168, 14:16, 14:19, 14:21, 14:82, 14:95, 14:109, 14:132, 14:137N
7 <sup>5,6</sup>	85 bp, 210 bp	430 bp	3, 6, 11, 13, 14, 1403, 18	*03:02:01-03:03, 03:27, 03:29, 03:38, 03:53, 03:74, 03:88, 03:90, 11:13:01 <sup>w</sup> -11:13:02 <sup>w</sup> , 11:26, 11:34, 13:15, 13:19, 13:26:01-13:26:02, 13:44, 13:53, 13:57, 13:85-13:86, 13:104, 14:02:01-14:03:02, 14:06:01-14:06:03, 14:09, 14:12:01-14:13, 14:17-14:21, 14:24, 14:27, 14:29-14:30, 14:32:01 <sup>w</sup> -14:32:02 <sup>w</sup> , 14:33, 14:40-14:41, 14:47-14:49, 14:51, 14:63, 14:65 <sup>w</sup> , 14:67, 14:77-14:78, 14:80-14:81, 14:83, 14:85, 14:89, 14:94, 14:98, 14:102, 14:106, 14:108-14:109, 14:115, 14:119, 14:121, 14:135, 14:146
8 <sup>5,6,7</sup>	100 bp, 175 bp	430 bp	3, 4	*04:01:01-04:05:11, 04:05:13-04:172
9	235 bp	430 bp	7	*07:01:01:01-07:01:07, 07:03-07:29

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<b>10<sup>6</sup></b>	170 bp, 215 bp, 250 bp	<b>515 bp</b>	8, 11, 12, 14	*08:01:01-08:19, 08:21-08:54, 11:67, 12:04, 12:16:01-12:16:03, 12:22, 12:39, 14:11, 14:15, 14:68, 14:93
<b>11<sup>5,6,7</sup></b>	85 bp, 135 bp, 180 bp	430 bp	3, 9, 11	*03:08, 03:65, 09:01:02-09:22, 11:07, 11:53, 11:103, 11:105, 11:107, 11:125
<b>12</b>	180 bp	430 bp	10	*03:76, 10:01:01-10:07, 11:59, 11:80, 11:83, 11:87, 11:135, 11:142, 13:27, 13:41, 13:71, 13:129
<b>13<sup>5,6,7</sup></b>	100 bp, 170 bp	430 bp	3, 8, 11, 13, 14	*03:08, 03:65, 08:31, 08:41, 11:01:01-11:70, 11:72- 11:153
<b>14<sup>5,6</sup></b>	85 bp, 110 bp	430 bp	12	*08:32, 08:53, 12:01:01-12:44
<b>15<sup>11</sup></b>	215 bp	430 bp	6, 8, 11, 13, 14, 1403	*03:76, 08:20-08:21, 11:01:01-11:04:11, 11:06:01- 11:06:03, 11:08:01-11:12:02, 11:14:01-11:16, 11:18- 11:21, 11:23:01-11:25, 11:27:01-11:33, 11:35-11:51, 11:54:01-11:54:02, 11:56-11:66, 11:68, 11:70, 11:72- 11:81, 11:83-11:88, 11:90-11:97, 11:99-11:102:02, 11:106, 11:108-11:124, 11:126-11:135, 11:137-11:142, 11:144-11:153, 13:01:01-13:02:01, 13:02:03-13:08, 13:10-13:16, 13:18-13:43, 13:45-13:85, 13:87-13:115, 13:117-13:128, 13:130-13:145, 13:147-13:166, 13:168- 13:169, 14:03:01-14:03:02, 14:12:01-14:12:02, 14:16, 14:19, 14:21-14:22, 14:25, 14:27, 14:40, 14:53, 14:63, 14:67, 14:69, 14:74, 14:77-14:78, 14:84-14:85, 14:98, 14:102, 14:105, 14:109, 14:115-14:116, 14:128, 14:135, 14:137N, 14:144, <b>DRB3*02:27</b>
<b>16<sup>6,7</sup></b>	195 bp, 215 bp	430 bp	6, 8, 11, 12, 13, 14	*08:01:01-08:02:04, 08:04:01-08:09, 08:11, 08:16-08:17, 08:20-08:22, 08:24, 08:26, 08:28, 08:31, 08:39, 08:41- 08:44, 08:50, 08:52, 08:54, 11:01:01-11:01:17, 11:01:20- 11:06:03, 11:09-11:12:02, 11:14:01-11:16, 11:20-11:21, 11:23:01-11:25, 11:27:01-11:30, 11:32-11:33, 11:35- 11:41, 11:43-11:44, 11:46:01-11:51, 11:54:01-11:56, 11:58:01-11:63, 11:65:01-11:70, 11:72, 11:74:01-11:78, 11:80-11:88, 11:90-11:97, 11:99-11:102:02, 11:106, 11:108-11:118, 11:120-11:124, 11:126-11:129, 11:133- 11:135, 11:137-11:142, 11:144-11:152, 12:02:01- 12:02:05, 12:13, 12:15-12:16:03, 12:18-12:21, 12:23, 12:26-12:27, 12:31N-12:33, 12:37, 12:42-12:44, 13:01:01-13:02:01, 13:02:03-13:02:09, 13:04-13:05:02, 13:07:01-13:09, 13:11:01-13:11:02, 13:14:01-13:24, 13:26:01-13:29, 13:31-13:32, 13:34-13:36, 13:38-13:43, 13:45-13:55, 13:57, 13:59, 13:61:01-13:65, 13:67-13:76, 13:78-13:80, 13:83-13:84, 13:87, 13:91-13:93, 13:96:01- 13:100, 13:102-13:109, 13:111-13:114, 13:116-13:117, 13:121, 13:123-13:132, 13:135-13:136, 13:138-13:150, 13:153, 13:155, 13:158-13:160, 13:162, 13:164-13:166, 13:168-13:169, 14:15-14:16, 14:22, 14:24-14:25, 14:27, 14:37, 14:53, 14:73, 14:105, 14:128
<b>17<sup>12</sup></b>	175 bp	430 bp	3, 6, 11, 13, 14, 1403, 17, 18	*03:01:01:01-03:07, 03:09, 03:11:01-03:41, 03:43-03:45, 03:47-03:63, 03:66-03:68N, 03:70-03:86, 03:88-03:91, 03:93-03:94, 08:20, 13:01:01-13:16, 13:18-13:42, 13:44, 13:46-13:66:02, 13:68-13:102, 13:104-13:115, 13:117- 13:121, 13:123-13:158, 13:161-13:164, 13:166-13:169, 14:02:01-14:03:02, 14:05:01-14:06:03, 14:09, 14:12:01- 14:14, 14:17-14:21, 14:23:01, 14:23:03-14:24, 14:27,

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<b>18<sup>5,6,7,10</sup></b>	100 bp, 140 bp, 155 bp	430 bp	4, 6, 8, 13, 14, 1404	*04:62, 04:69, 04:73, 04:105:01-04:105:02, 04:122, 04:146, 08:08, 11:69, 11:82, 13:45, 14:01:01-14:01:02, 14:01:04, 14:04, 14:07:01-14:07:02, 14:10, 14:16, 14:22, 14:25-14:26, 14:28, 14:31-14:32:03, 14:35, 14:37-14:39, 14:49-14:50, 14:53-14:54:01, 14:54:03-14:55, 14:57-14:58, 14:60-14:62, 14:68-14:71, 14:73-14:76, 14:79, 14:82, 14:86-14:88, 14:90, 14:93, 14:99, 14:101, 14:104-14:105, 14:107, 14:110-14:114, 14:117-14:120, 14:122, 14:124-14:125, 14:128-14:129, 14:131, 14:137N-14:140, 14:142-14:143, 14:145-14:146, <b>DRB4*01:03:01:02N</b>
<b>19<sup>5,6,8</sup></b>	110 bp, 140 bp, 170 bp	430 bp	3, 4, 6, 9, 11, 13, 14, 1404	*03:10, 09:01:02-09:01:05, 09:01:07-09:02:02, 09:04-09:22, 11:13:01-11:13:02, 11:17, 11:52, 13:43, 13:159, 14:01:01-14:02:01, 14:04-14:11, 14:13-14:14, 14:16-14:18, 14:19 <sup>w</sup> , 14:20, 14:21 <sup>w</sup> , 14:22-14:23:04, 14:26, 14:28-14:36, 14:38-14:39, 14:41, 14:43-14:52, 14:54:01-14:57, 14:59-14:62, 14:64-14:65, 14:68, 14:70-14:76, 14:79-14:83, 14:86-14:88, 14:90-14:97, 14:99-14:101, 14:103-14:108, 14:109 <sup>w</sup> , 14:110-14:114, 14:117-14:127:02, 14:129-14:134, 14:137N-14:140, 14:142-14:143, 14:145-14:146, 15:27, 15:34, 15:66:01
<b>20<sup>5,6</sup></b>	110 bp, 160 bp, 225 bp	430 bp	2 <sup>w</sup> , 3, 6, 8, 11, 13, 14, 1403, 1404, 16 <sup>w</sup>	*03:10, 08:09, 08:20-08:21, 08:32, 08:35, 08:36:02, 08:53, 11:13:01-11:13:02, 11:17, 11:23:01-11:23:02, 11:25, 11:31, 11:45, 11:52, 11:55, 11:64, 11:89, 11:96, 11:119, 11:148, 13:13, 13:18, 13:43, 13:45, 13:47, 13:55, 13:119, 13:144, 13:146, 13:154, 13:156, 13:158-13:159, 13:164, 14:01:01-14:01:04, 14:03:01-14:05:04, 14:07:01-14:08, 14:10-14:12:02, 14:14-14:16, 14:18, 14:22-14:23:04, 14:25-14:28, 14:31-14:32:03, 14:34-14:36, 14:38-14:40, 14:42-14:45, 14:49-14:50, 14:53-14:65, 14:67-14:79, 14:81-14:82, 14:84-14:93, 14:95-14:97, 14:99-14:105, 14:107, 14:110-14:120, 14:122-14:140, 14:142-14:146, 15:21 <sup>w</sup> , 16:04 <sup>w</sup> , 16:18 <sup>w</sup>
<b>21</b>	165 bp	430 bp	8, 12, 13, 14	*03:92, 08:01:01-08:04:05, 08:04:07-08:06, 08:09-08:10, 08:12-08:13, 08:16-08:18, 08:21-08:24, 08:26-08:30:03, 08:32-08:33, 08:35-08:40, 08:42-08:51, 08:53-08:54, 12:09, 13:17, 13:116, 14:15, 14:52, 14:126
<b>22<sup>5,7</sup></b>	75 bp, 175 bp	430 bp	2, 4, 8, 11, 13, 14	*04:12, 04:18, 04:25, 04:58, 08:04:01, 08:04:02 <sup>w</sup> -08:04:03 <sup>w</sup> , 08:04:04-08:04:07, 08:06, 08:10, 08:12, 08:14, 08:20, 08:22, 08:28, 08:54, 11:25, 11:67, 11:119, 13:18, 13:144, 13:156, 13:164, 14:12:01-14:12:02, 14:15, 14:78, 14:84, 15:21
<b>23</b>	135 bp	430 bp	8, 12, 13	*03:92, 08:17, 08:28, 08:37, 08:45, 11:67, 12:01:01-12:20, 12:22-12:37, 12:39-12:41, 12:43-12:44, 13:17, 14:138
<b>24</b>	170 bp, 195 bp	430 bp	3, 6, 11, 13, 14	*03:12, 13:03:01-13:04, 13:12:01-13:13, 13:21:01-13:21:02, 13:30, 13:32-13:33:03, 13:38, 13:48-13:49, 13:55, 13:58, 13:65-13:66:02, 13:75, 13:81, 13:88-13:90, 13:93-13:95, 13:101, 13:108, 13:115, 13:118, 13:120, 13:122, 13:133-13:134, 13:139, 13:151-13:152, 13:154, 13:161, 13:164, 13:167, 13:169, 14:13, 14:63, 14:65,

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101.101.48u/12u – without *Taq* pol., IFU-02

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14:78, 14:85, DRB5*01:08N				
<b>25</b>	150 bp	430 bp	2, 4, 6, 11, 13	*11:16, 11:20, 11:40, 11:59, 11:118, 11:122, 13:01:01-13:02:01, 13:02:03-13:02:09, 13:08, 13:15-13:16, 13:19-13:20, 13:27-13:29, 13:31-13:32, 13:34-13:36, 13:39-13:41, 13:43, 13:51-13:53, 13:57, 13:59, 13:61:01-13:61:02, 13:63-13:65, 13:67-13:69, 13:71-13:74, 13:76, 13:78-13:80, 13:83-13:84, 13:87, 13:91-13:93, 13:96:01-13:97:01, 13:98-13:99, 13:102-13:107, 13:109, 13:111-13:114, 13:117, 13:121, 13:123-13:128, 13:130-13:131, 13:135, 13:138-13:143, 13:145, 13:147-13:148, 13:153, 13:155, 13:159-13:160, 13:165-13:166, 13:168, 14:16, 14:57, 15:10
<b>26</b>	145 bp	430 bp	3, 6, 11, 13, 14, 17	*03:01:01:01-03:01:22, 03:04:01-03:05:03, 03:07-03:16, 03:18-03:25, 03:28-03:30, 03:32-03:34, 03:36-03:37, 03:39-03:40, 03:43-03:52, 03:54-03:59, 03:61-03:68N, 03:70-03:73, 03:76-03:79, 03:81, 03:83-03:84, 03:86, 03:89, 03:91, 03:93-03:94, 11:01:01-11:01:06, 11:01:08-11:04:11, 11:06:01-11:16, 11:18-11:21, 11:23:01-11:29, 11:31-11:36, 11:38-11:40, 11:42-11:47, 11:49:01-11:49:02, 11:51, 11:53-11:55, 11:57-11:66, 11:68-11:70, 11:72-11:82, 11:84:01-11:87, 11:89-11:103, 11:105-11:106, 11:108-11:144, 11:146-11:148, 11:150-11:153, 13:01:01-13:01:08, 13:01:10-13:02:09, 13:04-13:06, 13:09-13:11:02, 13:14:01-13:16, 13:18, 13:20-13:25, 13:27-13:31, 13:34, 13:39, 13:41-13:46, 13:50:01-13:52, 13:54, 13:56-13:57, 13:59, 13:61:01-13:64, 13:66:01-13:66:02, 13:68-13:69, 13:71, 13:73-13:75, 13:77-13:80, 13:82-13:83, 13:86-13:87, 13:91-13:93, 13:96:01-13:100, 13:102, 13:104-13:107, 13:109-13:114, 13:117, 13:119, 13:121, 13:123-13:132, 13:136-13:148, 13:150, 13:153-13:158, 13:162-13:163, 13:165-13:166, 13:168-13:169, 14:17, 14:21, 14:30, 14:33, 14:35, 14:42, 14:53, 14:64-14:65, 14:72, 14:95, 14:128, 14:132, 14:134
<b>27<sup>6,7</sup></b>	145 bp, 215 bp, 240 bp	430 bp	6, 8, 11, 13, 14, 1403, 1404	*08:09, 08:20-08:21, 08:35, 11:13:01-11:13:02, 11:17, 11:23:01-11:23:02, 11:25, 11:45, 11:52, 11:55, 11:64, 11:89, 11:119, 11:149, 13:08, 13:13, 13:18, 13:47, 13:55, 13:119, 13:144, 13:146, 13:154, 13:156, 13:158, 13:164, 14:01:01-14:01:04, 14:03:01-14:05:04, 14:07:01-14:08, 14:09 <sup>?</sup> , 14:10-14:12:02, 14:14-14:15, 14:16 <sup>?</sup> -14:17 <sup>?</sup> , 14:18, 14:19 <sup>?</sup> -14:20 <sup>?</sup> , 14:22 <sup>?</sup> , 14:23:01-14:23:04, 14:24 <sup>?</sup> -14:25 <sup>?</sup> , 14:26-14:28, 14:29 <sup>?</sup> -14:30 <sup>?</sup> , 14:31-14:32:02, 14:33 <sup>?</sup> , 14:34-14:36, 14:37 <sup>?</sup> , 14:38-14:40, 14:41 <sup>?</sup> , 14:42-14:45, 14:47 <sup>?</sup> -14:49 <sup>?</sup> , 14:50, 14:51 <sup>?</sup> -14:53 <sup>?</sup> , 14:54:01-14:65, 14:67-14:68, 14:69 <sup>?</sup> , 14:70-14:72, 14:73 <sup>?</sup> -14:74 <sup>?</sup> , 14:75, 14:76 <sup>?</sup> , 14:77-14:78, 14:79 <sup>?</sup> -14:80 <sup>?</sup> , 14:81-14:82, 14:83 <sup>?</sup> , 14:84-14:93, 14:94 <sup>?</sup> , 14:95-14:97, 14:98 <sup>?</sup> , 14:99-14:103, 14:104 <sup>?</sup> -14:109 <sup>?</sup> , 14:110, 14:111 <sup>?</sup> , 14:112-14:118, 14:119 <sup>?</sup> , 14:120, 14:121 <sup>?</sup> , 14:122-14:127:02, 14:128 <sup>?</sup> , 14:129-14:145, 14:146 <sup>?</sup>
<b>28</b>	140 bp	430 bp	6, 13, 14	*03:76, 13:10, 13:85, 13:120, 14:02:01, 14:06:01-14:06:03, 14:09, 14:13, 14:17, 14:19, 14:21, 14:29-14:30, 14:33, 14:46-14:48, 14:51-14:52, 14:80, 14:83, 14:106, 14:108-14:109, 14:121

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<b>29</b> <sup>6,11,12</sup>	160 bp, 240 bp	430 bp	52	*14:141, <b>DRB3*01:01:02:01-01:15, DRB3*02:01-02:29N, DRB3*03:01:01-03:03</b>
<b>30</b> <sup>7,10</sup>	215 bp	430 bp	53	<b>DRB4*01:01:01:01-01:08</b>
<b>31</b>	175 bp	430 bp	51	<b>DRB5*01:01:01-01:14, DRB5*02:02-02:06</b>
<b>32</b> <sup>13</sup>	-	-	-	<b>Negative control</b>

<sup>1</sup>Alleles are assigned by the presence of specific PCR product(s). However, the sizes of the specific PCR products may be helpful in the interpretation of DR low resolution SSP subtypings.

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, e.g. the primers in wells 3, 18, 19 and 20.

PCR fragments longer than the control bands may sometimes be observed. Such bands should be disregarded and do not influence the interpretation of the SSP typings.

PCR fragments migrating faster than the control bands, but slower than a 400 bp fragment may be seen in some gel read-outs. Such bands can be disregarded and do not influence the interpretation of the SSP typings.

Some primers may give rise to primer oligomer artifacts. Sometimes this phenomenon is an inherent feature of the primer pair(s) of a primer mix. More often it is due to other factors such as too low amount of DNA in the PCR reactions, taking too long time in setting up the PCR reactions, working at elevated room temperature or using thermal cyclers that are not pre-heated.

<sup>2</sup>The internal positive control primer pairs amplify segments of the human growth hormone gene. The internal positive control bands are 430 or 515 base pairs respectively, well distribution as outlined in the table. Well number 1 contains the longer, 515 bp, internal positive control band. The well distribution of the internal controls can help in orientation of the kit on gel photo, as well as allow for kit identification. In the presence of a specific amplification the intensity of the control band often decreases.

<sup>3</sup>The serological reactivity of all DRB alleles is not known. In this table we use the information in the HLA Dictionary 2004 on the [www.ebi.ac.uk/imgt/hla](http://www.ebi.ac.uk/imgt/hla) web site and the expert-assigned serological grouping in Tissue Antigens (2009) 73:95-170.

<sup>4</sup>For several DRB alleles 1<sup>st</sup> and/or 3<sup>rd</sup> exon(s) and beyond, as well as intron nucleotide sequences, are not available. In these instances it is not known whether some of the primers of the SSP sets are completely matched with the target sequences or not. Assumption is made that unknown sequences in these regions are conserved within allelic groups.

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

<sup>6</sup>Individual alleles can give rise to two differently sized specific PCR fragments in primer mix 1, 3, 5 to 8, 10, 11, 13, 14, 16, 18 to 20, 27 and 29.

<sup>7</sup>Primer mixes 1, 5, 8, 11, 13, 16, 18, 22, 27 and 30 have a tendency to giving rise to primer oligomer formation.

<sup>8</sup>Primer mix 19 has a tendency of primer oligomer formation and also has an intense primer cloud due to the high number of primers present in the primer mix.

<sup>9</sup>Primer mixes 3 and 4 may have tendencies of unspecific amplifications.

<sup>10</sup>The DRB4\*01:03:01:02N allele is amplified by the primer pairs in wells 18 and 30, whereas the DRB4\*02:01N and DRB4\*03:01N null alleles are not amplified by these primer pairs.

<sup>11</sup>Due to sharing of sequence motifs, DRB3\*02:27 is amplified by the primer pairs in well 15 in addition to primer mix 29.

<sup>12</sup>Due to sharing of sequence motifs in codon 38, DRB3\*01:14 will also be amplified in primer mixes 5, 6 and 17 in addition to primer mix 29.

<sup>13</sup>Primer mix 32 contains a negative control, which will amplify more than 95% of HLA amplicons as well as the amplicons generated by control primer pairs. PCR product sizes range from 75 to 200 base pairs. The PCR product generated by the control primer pair is 430 base pairs.

'w', might be weakly amplified.

'?', nucleotide sequence information not available for the primer matching sequence.

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101.101.48u/12u – without *Taq* pol., IFU-02

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### PRIMER SPECIFICATION

Well No.	1	2	3	4	5	6	7	8	9	10	11	12
Length of spec.	205	200	200	210	120	80	85	100	235	170	85	180
PCR product	230		225		220	210	210	175		215	135	
	255									250	180	
Length of int. pos. control <sup>1</sup>	515	430	430	430	430	430	430	430	430	515	430	430
5'-primer(s) <sup>2</sup>	12(124) 5'-A.T 3'	14(129) 5'-gAA 3'	13(126) 5'-Agg 3'	13(126) 5'-Agg 3'	13(125) 5'-gTC 3'	13(125) 5'-gTC 3'	13(125) 5'-gTC 3'	13(125) 5'-ACA 3'	13(127) 5'-ATA 3'	15(133) 5'-gTT 3'	26(165) 5'-TAT 3'	26(164) 5'-gTA 3'
	14(129) 5'-gAA 3'		13(126) 5'-AAg 3'	13(126) 5'-AAg 3'	47(227) 5'-gTT 3'	15(133) 5'-gTT 3'		13(125) 5'-ACC 3'	13(127) 5'-ATA 3'	15(133) 5'-gTT 3'	58(261) 5'-gAg 3'	30(178) 5'-gCg 3'
			13(126) 5'-AgA 3'					13(125) 5'-ATA 3'	13(127) 5'-gTA 3'			
								13(125) 5'-gTC 3'				
3'-primer(s) <sup>3</sup>	66(286) 5'-gAg 3'	66(286) 5'-gAT 3'	66(286) 5'-gAT 3'	66(286) 5'-gAA 3'	73(305) 5'-ggC 3'	26(164) 5'-ggT 3'	28(171) 5'-CTC 3'	32(184) 5'-gTg 3'	77(319) 5'-CAC 3'	58(260) 5'-CCT 3'	57(257) 5'-CgA 3'	73(307) 5'-CgC 3'
	66(286) 5'-gAg 3'		69(295) 5'-CTg 3'	66(286) 5'-gAg 3'	73(305) 5'-ggC 3'	71(299) 5'-gCT 3'	69(295) 5'-CTg 3'	58(260) 5'-Cgg 3'	77(319) 5'-gTA 3'	73(307) 5'-CAG 3'	73(305) 5'-ggC 3'	
	66(286) 5'-gAT 3'		69(295) 5'-Tg 3'	70(297) 5'-CTg 3'	74(308) 5'-CCC 3'				77(319) 5'-CAA 3'	86(344) 5'-CAC 3'	77(319) 5'-CAC 3'	
	70(297) 5'-CTg 3'		70(298) 5'-CgC 3'	71(301) 5'-ggC 3'								
	71(299) 5'-gCg 3'		71(299) 5'-gCT 3'									
	77(317) 5'-AgT 3'		73(305) 5'-ggC 3'									
	86(344) 5'-CCA 3'		77(317) 5'-AgT 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.	100	85	215	195	175	100	110	110	165	75	135	170
PCR product	170	110		215		140	140	160		175		195
						155	170	225				
Length of int. pos. control <sup>1</sup>	430	430	430	430	430	430	430	430	430	430	430	430
5'-primer(s) <sup>2</sup>	13(125) 5'-gTC 3'	12(124) 5'-Cgg 3'	10(116) 5'-gCT 3'	10(116) 5'-gCT 3'	13(125) 5'-gTC 3'	1 <sup>st</sup> I 5'-CAA 3'	26(164) 5'-gTA 3'	13(125) 5'-gTC 3'	15(133) 5'-gTT 3'	12(122) 5'-TAG 3'	15(133) 5'-gTT 3'	13(125) 5'-gTC 3'
	15(133) 5'-gTC 3'	15(133) 5'-gTT 3'	12(122) 5'-TAT 3'	12(122) 5'-TAT 3'		37(197) 5'-gTT 3'	34(189) 5'-CAG 3'	34(189) 5'-CAG 3'		74(308) 5'-CCT 3'		107(409) 5'-AgA 3'
	38(200) 5'-CgT 3'		13(125) 5'-gTC 3'	13(125) 5'-gTC 3'		37(197) 5'-gTA 3'		36(196) 5'-AgC 3'				
				15(133) 5'-gTT 3'								
				15(133) 5'-gTC 3'								
3'-primer(s) <sup>3</sup>	58(260) 5'-CCT 3'	29(175) 5'-gTg 3'	69(295) 5'-gTC 3'	66(286) 5'-gAA 3'	58(260) 5'-Cgg 3'	42(213) 5'-TCA 3'	57(257) 5'-CAG 3'	57(257) 5'-CAG 3'	56(256) 5'-gCT 3'	56(256) 5'-gCT 3'	47(227) 5'-ggA 3'	56(256) 5'-gCT 3'
	58(260) 5'-CCT 3'	37(199) 5'-CAG 3'	71(299) 5'-gCT 3'	70(298) 5'-CgC 3'	58(260) 5'-CAG 3'	57(257) 5'-CAG 3'	69(295) 5'-CTg 3'	59(265) 5'-gTg 3'	57(257) 5'-CAT 3'	86(344) 5'-CCA 3'		159(565) 5'-CAT 3'
	58(260) 5'-CCT 3'		71(299) 5'-ACT 3'	70(298) 5'-CTC 3'		70(298) 5'-CgC 3'	70(296) 5'-TCC 3'	70(296) 5'-TCC 3'	57(257) 5'-CAT 3'			
								73(307) 5'-CAG 3'				
Well No.	13	14	15	16	17	18	19	20	21	22	23	24

101.101.48/12 – including *Taq* pol., IFU-01  
101.101.48u/12u – without *Taq* pol., IFU-02

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Lot-specific information

Well No.	25	26	27	28	29	30	31
Length of spec. PCR product	150	145	145	140	160	215	175
			215		240		
			240				
Length of int. pos. control <sup>1</sup>	430	430	430	430	430	430	430
5'-primer(s) <sup>2</sup>	34(189) 5'-CAg 3'	13(125) 5'-gTC 3'	13(125) 5'-gTC 3'	36(196) 5'-AgA 3'	10(116) 5'-gCT 3'	28(170) 5'-gAT 3'	13(125) 5'-gTA 3'
	34(189) 5'-CAg 3'		37(197) 5'-gTT 3'		10(116) 5'-gCT 3'		
			114(429) 5'-CTg 3'		37(199) 5'-TCC 3'		
3'-primer(s) <sup>3</sup>	70(298) 5'-CTC 3'	47(227) 5'-ggA 3'	70(296) 5'-TCC 3'	69(295) 5'-CTg 3'	51(239) 5'-CCC 3'	86(346) 5'-CTC 3'	57(258) 5'-gCg 3'
		47(229) 5'-CCA 3'	73(307) 5'-CAg 3'	70(298) 5'-CTT 3'	77(317) 5'-AAT 3'	86(346) 5'-CTT 3'	58(260) 5'-CCT 3'
			181(630) 5'-CTT 3'				
Well No.	25	26	27	28	29	30	31

<sup>1</sup>The internal positive control primer pairs amplify segments of the human growth hormone gene. The internal positive control bands are 430 or 515 base pairs respectively, well distribution as outlined in the table. Well number 1 contains the longer, 515 bp, internal positive control band. The well distribution of the internal controls can help in orientation of the kit on gel photo, as well as allow for kit identification. In the presence of a specific amplification the intensity of the control band often decreases.

<sup>2</sup>The nucleotide position matching the specificity-determining 3'-end of the primer is given. Nucleotide numbering as on the [www.ebi.ac.uk/imgt/hla](http://www.ebi.ac.uk/imgt/hla) web site. The sequence of the 3 terminal nucleotides of the primer is given.

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

101.101-48/12 – including *Taq* pol., IFU-01  
101.101-48u/12u – without *Taq* pol., IFU-02

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Lot-specific information

CELL LINE VALIDATION SHEET																				
DR low resolution primer set <sup>3</sup>																				
				Well <sup>2</sup>																
				1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	
				Prod. No.:	201326701	201326702	201435503	201435504	201326705	201326706	201326707	201326708	201325409	201326710	201326711	201326712	201326713	201331614	201326715	201326716
IHC cell line <sup>1</sup>		DRB1																		
1	9001 SA	*01:01		+	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
2	9280 LK707	*15:02	*04:05	-	-	+	-	-	-	-	+	-	-	-	-	-	-	-	-	-
3	9011 E4181324	*15:02		-	-	+	-	-	-	-	-	-	-	-	-	-	-	-	-	-
4	9275 GU373	*03:01		-	-	-	-	+	+	-	-	-	-	-	-	-	-	-	-	-
5	9009 KAS011	*16:01		-	-	-	+	-	-	-	-	-	-	-	-	-	-	-	-	-
6	9353 SM	*04:07	*08:03	-	-	-	-	-	-	-	+	-	+	-	-	-	-	-	-	-
7	9020 QBL	*03:01		-	-	-	-	+	+	-	-	-	-	-	-	-	-	-	-	-
8	9025 DEU	*04:01		-	-	-	-	-	-	-	+	-	-	-	-	-	-	-	-	-
9	9026 YAR	*04:02		-	-	-	-	-	-	-	+	-	-	-	-	-	-	-	-	-
10	9107 LKT3	*04:05		-	-	-	-	-	-	-	+	-	-	-	-	-	-	-	-	-
11	9051 PTOU	*07:01		-	-	-	-	-	-	-	-	+	-	-	-	-	-	-	-	-
12	9052 DBB	*07:01		-	-	-	-	-	-	-	-	+	-	-	-	-	-	-	-	-
13	9004 JESTHOM	*01:01		+	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
14	9071 OLGA	*08:02		-	-	-	-	-	-	-	-	-	+	-	-	-	-	-	-	+
15	9075 DKB	*09:01		-	-	-	-	-	-	-	-	-	-	+	-	-	-	-	-	-
16	9037 SWEIG007	*11:01		-	-	-	-	-	-	-	-	-	-	-	-	+	-	+	+	+
17	9282 CTM3953540	*03:01	*13:01	-	-	-	-	+	+	-	-	-	-	-	-	-	-	+	+	+
18	9257 32367	*09:01	*11:01	-	-	-	-	-	-	-	-	-	-	+	-	+	-	+	+	+
19	9038 BM16	*12:01		-	-	-	-	-	-	-	-	-	-	-	-	-	+	-	-	-
20	9059 SLE005	*13:02		-	-	-	-	-	+	-	-	-	-	-	-	-	-	+	+	+
21	9064 AMALA	*14:02		-	-	-	-	-	+	-	-	-	-	-	-	-	-	-	-	-
22	9056 KOSE	*13:02	*14:54	-	-	-	-	-	+	-	-	-	-	-	-	-	-	-	+	+
23	9124 IHL	*08:03	*14:14	-	-	-	-	-	-	-	-	-	+	-	-	-	-	-	-	-
24	9035 JBUSH	*11:01		-	-	-	-	-	-	-	-	-	-	-	-	+	-	+	+	+
25	9049 IBW9	*07:01		-	-	-	-	-	-	-	-	+	-	-	-	-	-	-	-	-
26	9285 WT49	*03:01		-	-	-	-	+	+	-	-	-	-	-	-	-	-	-	-	-
27	9191 CH1007	*04:05	*10:01	-	-	-	-	-	-	-	+	-	-	-	+	-	-	-	-	-
28	9320 BEL5GB	*04:16	*07:01	-	-	-	-	-	-	-	+	+	-	-	-	-	-	-	-	-
29	9050 MOU	*07:01		-	-	-	-	-	-	-	-	+	-	-	-	-	-	-	-	-
30	9021 RSH	*03:02		-	-	-	-	+	-	+	-	-	-	-	-	-	-	-	-	-
31	9019 DUCAF	*03:01		-	-	-	-	+	+	-	-	-	-	-	-	-	-	-	-	-
32	9297 HAG	*13:03		-	-	-	-	-	+	-	-	-	-	-	-	-	-	-	+	-
33	9098 MT14B	*04:04		-	-	-	-	-	-	-	+	-	-	-	-	-	-	-	-	-
34	9104 DHIF	*11:01		-	-	-	-	-	-	-	-	-	-	-	-	+	-	+	+	+
35	9302 SSTO	*04:03		-	-	-	-	-	-	-	+	-	-	-	-	-	-	-	-	-
36	9024 KT17	*04:03	*04:06	-	-	-	-	-	-	-	+	-	-	-	-	-	-	-	-	-
37	9065 HHKB	*13:01		-	-	-	-	-	+	-	-	-	-	-	-	-	-	-	+	+
38	9099 LZL	*14:02		-	-	-	-	-	-	+	-	-	-	-	-	-	-	-	-	-
39	9315 CML	*03:01	*04:01	-	-	-	-	+	+	-	+	-	-	-	-	-	-	-	-	-
40	9134 WHONP199	*07:01	*09:01	-	-	-	-	-	-	-	-	+	-	+	-	-	-	-	-	-
41	9055 H0301	*13:02		-	-	-	-	-	+	-	-	-	-	-	-	-	-	-	+	+
42	9066 TAB089	*08:03		-	-	-	-	-	-	-	-	-	+	-	-	-	-	-	-	-
43	9076 T7526	*09:01		-	-	-	-	-	-	-	-	-	-	+	-	-	-	-	-	-
44	9057 TEM	*14:01		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
45	9239 SHJO	*07:01		-	-	-	-	-	-	-	-	+	-	-	-	-	-	-	-	-
46	9013 SCHU	*15:01		-	-	+	-	-	-	-	-	-	-	-	-	-	-	-	-	-
47	9045 TUBO	*11:04	*12:01	-	-	-	-	-	-	-	-	-	-	-	-	+	+	+	+	+
48	9303 TER-ND	*01:03		-	+	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

101.101-48/12 – including *Taq* pol., IFU-01  
101.101-48u/12u – without *Taq* pol., IFU-02

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Lot No.: **77V**

Lot-specific information

CELL LINE VALIDATION SHEET			DR low resolution primer set <sup>3</sup>															
			Well <sup>2</sup>															
			17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	
Prod. No.:			201435517	201326718	201326719	201326720	201205521	201205522	201205523	201225424	201205525	201205526	201225427	201205528	201326729	201326730	201326731	
IHWC cell line <sup>1</sup>	DRB1																	
1	9001 SA	*01:01	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
2	9280 LK707	*15:02	-	-	-	-	-	-	-	-	-	-	-	-	-	-	+	+
3	9011 E4181324	*15:02	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	+
4	9275 GU373	*03:01	+	-	-	-	-	-	-	-	-	+	-	-	-	-	-	-
5	9009 KAS011	*16:01	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	+
6	9353 SM	*04:07	-	-	-	-	+	-	-	-	-	-	-	-	-	-	+	-
7	9020 QBL	*03:01	+	-	-	-	-	-	-	-	-	+	-	-	-	+	-	-
8	9025 DEU	*04:01	-	-	-	-	-	-	-	-	-	-	-	-	-	-	+	-
9	9026 YAR	*04:02	-	-	-	-	-	-	-	-	-	-	-	-	-	-	+	-
10	9107 LKT3	*04:05	-	-	-	-	-	-	-	-	-	-	-	-	-	-	+	-
11	9051 PITOUT	*07:01	-	-	-	-	-	-	-	-	-	-	-	-	-	-	+	-
12	9052 DBB	*07:01	-	+	-	-	-	-	-	-	-	-	-	-	-	-	+	-
13	9004 JESTHOM	*01:01	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
14	9071 OLGA	*08:02	-	-	-	-	+	-	-	-	-	-	-	-	-	-	-	-
15	9075 DKB	*09:01	-	-	+	-	-	-	-	-	-	-	-	-	-	-	+	-
16	9037 SWEIG007	*11:01	-	-	-	-	-	-	-	-	-	+	-	-	-	+	-	-
17	9282 CTM3953540	*03:01	+	-	-	-	-	-	-	-	+	+	-	-	+	-	-	-
18	9257 32367	*09:01	-	-	+	-	-	-	-	-	-	+	-	-	+	+	-	-
19	9038 BM16	*12:01	-	-	-	-	-	-	+	-	-	-	-	-	+	-	-	-
20	9059 SLE005	*13:02	+	-	-	-	-	-	-	-	+	+	-	-	+	-	-	-
21	9064 AMALA	*14:02	+	-	+	-	-	-	-	-	-	-	-	+	+	-	-	-
22	9056 KOSE	*13:02	+	+	+	+	-	-	-	-	+	+	+	-	+	-	-	-
23	9124 IHL	*08:03	+	-	+	+	+	-	-	-	-	-	+	-	+	-	-	-
24	9035 JBUSH	*11:01	-	-	-	-	-	-	-	-	-	+	-	-	+	-	-	-
25	9049 IBW9	*07:01	-	-	-	-	-	-	-	-	-	-	-	-	-	-	+	-
26	9285 WT49	*03:01	+	-	-	-	-	-	-	-	-	+	-	-	+	-	-	-
27	9191 CH1007	*04:05	-	-	-	-	-	-	-	-	-	-	-	-	-	-	+	-
28	9320 BEL5GB	*04:16	-	-	-	-	-	-	-	-	-	-	-	-	-	-	+	-
29	9050 MOU	*07:01	-	-	-	-	-	-	-	-	-	-	-	-	-	-	+	-
30	9021 RSH	*03:02	+	-	-	-	-	-	-	-	-	-	-	-	-	+	-	-
31	9019 DUCAF	*03:01	+	-	-	-	-	-	-	-	-	+	-	-	+	-	-	-
32	9297 HAG	*13:03	+	-	-	-	-	-	-	+	-	-	-	-	+	-	-	-
33	9098 MT14B	*04:04	-	-	-	-	-	-	-	-	-	-	-	-	-	-	+	-
34	9104 DHIF	*11:01	-	-	-	-	-	-	-	-	-	+	-	-	+	-	-	-
35	9302 SSTO	*04:03	-	-	-	-	-	-	-	-	-	-	-	-	-	-	+	-
36	9024 KT17	*04:03	-	-	-	-	-	-	-	-	-	-	-	-	-	-	+	-
37	9065 HHKB	*13:01	+	-	-	-	-	-	-	-	+	+	-	-	+	-	-	-
38	9099 LZL	*14:02	+	-	+	-	-	-	-	-	-	-	-	+	+	-	-	-
39	9315 CML	*03:01	+	-	-	-	-	-	-	-	-	+	-	-	+	+	-	-
40	9134 WHONP199	*07:01	-	-	+	-	-	-	-	-	-	-	-	-	-	-	+	-
41	9055 H0301	*13:02	+	-	-	-	-	-	-	-	+	+	-	-	+	-	-	-
42	9066 TAB089	*08:03	-	-	-	-	+	-	-	-	-	-	-	-	-	-	-	-
43	9076 T7526	*09:01	-	-	+	-	-	-	-	-	-	-	-	-	-	-	+	-
44	9057 TEM	*14:01	-	+	+	+	-	-	-	-	-	-	+	-	+	-	-	-
45	9239 SHJO	*07:01	-	-	-	-	-	-	-	-	-	-	-	-	-	-	+	-
46	9013 SCHU	*15:01	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	+
47	9045 TUBO	*11:04	-	-	-	-	-	-	+	-	-	-	-	-	+	-	-	-
48	9303 TER-ND	*01:03	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

<sup>1</sup>The provided cell line HLA specificities are retrieved from the <http://www.ihwg.org/hla> web site. The specificity of an individual cell line may thus be subject to change.

101.101-48/12 – including *Taq* pol., IFU-01  
101.101-48u/12u – without *Taq* pol., IFU-02

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**Lot No.: 77V**

**Lot-specific information**

<sup>2</sup>The DRB4\*01:03:01:02N allele is amplified by primer mix 18 in the 9052 (DBB) cell line.

<sup>3</sup>The specificity of each primer solution in the kit has been tested against 48 well characterized cell line DNAs and where applicable, additional cell line DNAs.

Additional 5'- and 3'-primers in primer solutions 11, 18 and 27 were tested by separately adding one 3'-primer, respectively one 5'-primer.

Additional 5'-primers in primer solutions 6, 12, 15 and 16 were tested by separately adding one 3'-primer. Additional 3'-primers in primer solutions 1, 3, 4, 9, 10, 20 and 22 were tested by separately adding one 5'-primer.

One, two or three of the 5'-primers in primer solution 1, 3, 4, 8 to 10, 13 to 16, 20, 22 and 27 were not possible to test. One or two of the 3'-primers in primer solution 1, 3, 4, 9, 13, 15, 21, 26 and 30 were not possible to test.

101.101-48/12 – including *Taq* pol., IFU-01  
101.101-48u/12u – without *Taq* pol., IFU-02

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Lot No.: **77V**

Lot-specific information

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