

101.411-24/06 – including *Taq* polymerase, IFU-01  
101.411-24u/06u – without *Taq* polymerase, IFU-02

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“Instructions for Use” (IFU)

Lot No.: **1E6**

Lot-specific information  
**Olerup SSP<sup>®</sup> HLA-A\*01**

<b>Product number:</b>	101.411-24/06 – including <i>Taq</i> pol. 101.411-24u/06u – without <i>Taq</i> pol.
<b>Lot number:</b>	1E6
<b>Expiry date:</b>	2019-01-01
<b>Number of tests:</b>	24 tests – Product No. 101.411-24/24u 6 tests – Product No. 101.411-06/06u
<b>Number of wells per test:</b>	55+1
<b>Storage - pre-aliquoted primers:</b>	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. 1E6.**

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

**CHANGES COMPARED TO THE PREVIOUS OLERUP SSP<sup>®</sup>  
HLA-A\*01 Lot (0E8)**

The HLA-A\*01 kit is updated for new alleles to enable separation of:

- Confirmed<sup>1</sup> alleles as listed in the IMGT/HLA database
- Polymorphisms in exons outside of the region encoding the peptide binding domain
- Null and Alternatively expressed alleles

One well has been added to HLA-A\*01, well **56**.

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

The HLA-A\*01 specificity and interpretation tables have been updated for the HLA-A alleles described since the previous *Olerup SSP<sup>®</sup>* HLA-A\*01 lot was made (**Lot No. 0E8**). The kit design is based on IMGT/HLA database 3.24.0.

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

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

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<b>Well</b>	<b>5'-primer</b>	<b>3'-primer</b>	<b>rationale</b>
55	New	New	Negative control moved to well 56. New primer pair for the A*01:52:02N allele.
56	-	-	Negative control added from well 55.

Change in revision R01 compared to R00:

1. Primer mix 30 does not amplify the A\*01:37 and the A\*11:172 alleles. This has been corrected in the Specificity and Interpretation Tables. Thus, this lot of the HLA-A\*01 subtyping kit cannot distinguish the A\*01:01:01:01, 01:01:01:03-01:01:22, 01:01:24-01:01:37, 01:01:39-01:01:47 and 01:01:49-01:01:75 alleles and the A\*01:37 allele.

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Well **56** contains Negative Control primer pairs, that will amplify more than 95% of the *Olerup SSP*<sup>®</sup> HLA Class I, DRB, DQB1, DPB1 and DQA1 amplicons as well as all the amplicons generated by the control primer pairs matching the human growth hormone gene.

HLA-specific PCR product sizes range from 75 to 200 base pairs.  
The PCR product generated by the positive control primer pair is 430 base pairs.

Length of PCR product	105	200	105	80	75	80	85
<b>5'-primer<sup>1</sup></b>	<b>164</b>	<b>340</b>	<b>440</b>	<b>45</b>	<b>45</b>	<b>43</b>	<b>36</b>
	5'-CAC <sup>3'</sup>	5'-Agg <sup>3'</sup>	5'-TTA <sup>3'</sup>	5'-Tgg <sup>3'</sup>	5'-Tgg <sup>3'</sup>	5'-Tgg <sup>3'</sup>	5'-TAC <sup>3'</sup>
							<b>36</b>
							5'-TAT <sup>3'</sup>
<b>3'-primer<sup>2</sup></b>	<b>231</b>	<b>2<sup>nd</sup> I</b>	<b>507</b>	<b>59</b>	<b>58</b>	<b>57</b>	<b>47</b>
	5'-TgC <sup>3'</sup>	5'-AAA <sup>3'</sup>	5'-TTg <sup>3'</sup>	5'-CTC <sup>3'</sup>	5'-ggC <sup>3'</sup>	5'-CTC <sup>3'</sup>	5'-ACA <sup>3'</sup>
							<b>48</b>
							5'-gCA <sup>3'</sup>
							<b>48</b>
							5'-gCC <sup>3'</sup>
							<b>52</b>
							5'-TgT <sup>3'</sup>
<b>A*</b>	<b>+</b>	<b>+</b>	<b>+</b>				
<b>B*</b>	<b>+</b>	<b>+</b>	<b>+</b>				
<b>C*</b>	<b>+</b>	<b>+</b>	<b>+</b>				
<b>DRB1</b>				<b>+</b>	<b>+</b>		
<b>DRB3</b>				<b>+</b>	<b>+</b>		
<b>DRB5</b>				<b>+</b>			
<b>DQB1</b>					<b>+</b>		
<b>DPB1</b>						<b>+</b>	
<b>DQA1</b>							<b>+</b>

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

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

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## PRODUCT DESCRIPTION

### HLA-A\*01 SSP subtyping

#### CONTENT

The primer set contains 5'- and 3'-primers for identifying the A\*01:01 to A\*01:201 alleles.

#### PLATE LAYOUT

Each test consists of 56 PCR reactions in a 64 well cut PCR plate. Wells 57 to 64 are empty.

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

The 64 well cut PCR plate is marked with ‘HLA-A\*01’ in silver/gray ink.

Well No. 1 is marked with the Lot No. ‘1E6’.

Wells 1 to 55 – HLA-A\*01 high resolution primers.

Well 56 – Negative Control (NC).

A faint row of numbers is seen between wells 1 and 2 or wells 7 and 8 of the PCR trays. These stem from the manufacture of the trays, and should be disregarded. The PCR plates are heat-sealed with a PCR-compatible foil.

#### INTERPRETATION

Due to the sharing of sequence motifs between HLA-A alleles non-HLA-A\*01 alleles will be amplified by primer mixes 1, 2, 4 to 8, 10 to 13, 15, 17 to 21, 23 to 30, 32, 34, 35, 38 to 47 and 51. In addition, a few HLA-B and HLA-C alleles will be amplified by primer mixes 4, 6, 12, 20, 32 to 34, 44 and 45.

For further details see Specificity Table.

#### UNIQUELY IDENTIFIED ALLELES

All the HLA-A\*01 alleles, i.e. **A\*01:01 to A\*01:201**, recognized by the HLA Nomenclature Committee in May 2016<sup>1,2</sup> will be amplified by the primers in the HLA-A\*01 SSP kit<sup>3</sup>.

The HLA-A\*01 kit enables separation of the confirmed HLA-A\*01 alleles as listed in the IMGT/HLA database. An HLA allele is listed as confirmed by IMGT/HLA if it has been sequenced by more than a single laboratory or from multiple sources. Current allele confirmation status for HLA-A\*01 alleles is listed below.

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The HLA- A\*01 kit also enables identification of polymorphisms in exons outside of the region encoding the peptide binding domain and of null and alternatively expressed alleles.

The following HLA-A\*01 alleles can be distinguished by the different sizes of the HLA-specific PCR product:

<b>Alleles</b>	<b>Primer mix</b>	<b>Alleles</b>	<b>Primer mix</b>
A*01:31N, 01:173	25	A*01:53N-01:54	36
A*01:32, 01:104	26	A*01:65, 01:92	37
A*01:47, 01:49	35	A*01:87N, 01:141	27, 42
A*01:48, 01:123N	36	A*01:137, 01:150	10, 35
A*01:50, 01:62	38		

The HLA-A\*01 subtyping kit cannot distinguish the silent mutations in the A\*01:01:01:01, 01:01:01:03-01:01:22, 01:01:24-01:01:37, 01:01:39-01:01:47, 01:01:49-01:01:75 and 01:67:01-01:67:02 alleles, the A\*01:69:01-01:69:01 or the A\*01:83:01-01:83:02 alleles.

<sup>1</sup>HLA-A alleles listed on the IMGT/HLA web page 2016-May-04, release 3.24.0, [www.ebi.ac.uk/imgt/hla](http://www.ebi.ac.uk/imgt/hla).

<sup>2</sup>Alleles that have been deleted from or renamed in the official WHO HLA Nomenclature up to and including the last IMGT/HLA database release can be retrieved from web page <http://hla.alleles.org/alleles/deleted.html>.

<sup>3</sup>This lot of the HLA-A\*01 subtyping kit cannot distinguish the A\*01:01:01:01, 01:01:01:03-01:01:22, 01:01:24-01:01:37, 01:01:39-01:01:47 and 01:01:49-01:01:75 alleles and the A\*01:37 allele.

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**ALLELE CONFIRMATION STATUS**

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

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Allele	Status <sup>1</sup>	Allele	Status <sup>1</sup>	Allele	Status <sup>1</sup>	Allele	Status <sup>1</sup>
A*01:123N	Unconfirmed	<b>A*01:143</b>	<b>Confirmed</b>	A*01:163	Unconfirmed	A*01:183	Unconfirmed
A*01:124	Unconfirmed	<b>A*01:144</b>	<b>Confirmed</b>	<b>A*01:164</b>	<b>Confirmed</b>	A*01:184	Unconfirmed
A*01:125	Unconfirmed	A*01:145	Unconfirmed	A*01:165	Unconfirmed	A*01:185	Unconfirmed
A*01:126	Unconfirmed	A*01:146	Unconfirmed	A*01:166	Unconfirmed	A*01:186N	Unconfirmed
A*01:127	Unconfirmed	A*01:147Q	Unconfirmed	A*01:167	Unconfirmed	A*01:187	Unconfirmed
A*01:128	Unconfirmed	A*01:148	Unconfirmed	A*01:168	Unconfirmed	A*01:188	Unconfirmed
A*01:129	Unconfirmed	A*01:149	Unconfirmed	A*01:169	Unconfirmed	A*01:189	Unconfirmed
A*01:130	Unconfirmed	<b>A*01:150</b>	<b>Confirmed</b>	A*01:170	Unconfirmed	<b>A*01:190</b>	<b>Confirmed</b>
A*01:131	Unconfirmed	A*01:151	Unconfirmed	A*01:171	Unconfirmed	A*01:191	Unconfirmed
<b>A*01:132</b>	<b>Confirmed</b>	A*01:152	Unconfirmed	A*01:172	Unconfirmed	A*01:192	Unconfirmed
A*01:133	Unconfirmed	A*01:153	Unconfirmed	A*01:173	Unconfirmed	A*01:193	Unconfirmed
<b>A*01:134</b>	<b>Confirmed</b>	A*01:154	Unconfirmed	A*01:174	Unconfirmed	A*01:194	Unconfirmed
A*01:135	Unconfirmed	A*01:155	Unconfirmed	A*01:175	Unconfirmed	A*01:195	Unconfirmed
A*01:136	Unconfirmed	A*01:156	Unconfirmed	A*01:176	Unconfirmed	A*01:196	Unconfirmed
<b>A*01:137</b>	<b>Confirmed</b>	A*01:157	Unconfirmed	A*01:177	Unconfirmed	A*01:197	Unconfirmed
A*01:138	Unconfirmed	A*01:158	Unconfirmed	A*01:178N	Unconfirmed	A*01:198	Unconfirmed
A*01:139	Unconfirmed	A*01:159	Unconfirmed	A*01:179N	Unconfirmed	A*01:199	Unconfirmed
A*01:140	Unconfirmed	A*01:160N	Unconfirmed	A*01:180	Unconfirmed	A*01:200	Unconfirmed
A*01:141	Unconfirmed	A*01:161	Unconfirmed	A*01:181	Unconfirmed	A*01:201	Unconfirmed
A*01:142	Unconfirmed	A*01:162N	Unconfirmed	A*01:182	Unconfirmed		

<sup>1</sup>Allele status “confirmed” or “unconfirmed” as listed on the IMGT/HLA web page 2016-May-04, release 3.24.0, [www.ebi.ac.uk/imgt/hla](http://www.ebi.ac.uk/imgt/hla).

**RESOLUTION IN HOMO- AND HETEROZYGOTES**

Results file with resolution in HLA-A\*01 homo- and heterozygotes is available upon request.

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Lot-specific information  
**SPECIFICITY TABLE**

**HLA-A\*01 SSP subtyping**

**Specificities and sizes of the PCR products of the 55+1 primer mixes used for HLA-A\*01 SSP subtyping**

Primer Mix	Size of spec. PCR product <sup>1</sup>	Size of control band <sup>2</sup>	Amplified HLA-A*01 alleles <sup>3</sup>	Other amplified HLA-A alleles <sup>4</sup>
<b>1</b>	235 bp	<b>800 bp</b>	*01:01:01:01-01:01:22, 01:01:24-01:02, 01:04N, 01:06-01:07, 01:09-01:11N, 01:13, 01:16N-01:18N, 01:21-01:33, 01:35-01:40, 01:42-01:62, 01:64-01:65, 01:67:01-01:72, 01:74-01:88, 01:90-01:129, 01:131-01:146, 01:148, 01:150-01:158, 01:160N-01:177, 01:179N-01:191, 01:193-01:199, 01:201	*03:18, 03:105, 03:135, 11:01:01:01-11:01:20, 11:01:22-11:01:61, 11:01:63-11:03, 11:05-11:25:02, 11:29-11:34, 11:36-11:47, 11:49, 11:51-11:52Q, 11:54-11:89, 11:91:01-11:100, 11:102-11:117, 11:119:01-11:129, 11:131-11:138, 11:140-11:142, 11:144-11:156, 11:157 <sup>w</sup> , 11:158-11:169, 11:171-11:181, 11:183-11:208N, 11:210N-11:238N, 36:04
<b>2<sup>8</sup></b>	145 bp	1070 bp	*01:01:01:01-01:01:75, 01:03-01:04N, 01:06-01:17, 01:18N <sup>w</sup> , 01:19, 01:21-01:23, 01:24 <sup>w</sup> , 01:25-01:33, 01:35-01:42, 01:44-01:68, 01:70-01:142, 01:144-01:170, 01:172-01:187, 01:189, 01:191-01:201	*36:01-36:05
<b>3<sup>5,8</sup></b>	120 bp	<b>800 bp</b>	*01:02, 01:20, 01:190	
<b>4</b>	305 bp	1070 bp	*01:03, 01:192	*11:26, 11:118, 26:32, 26:70, 29:66, 32:62, 33:13, 36:03, 74:10, <b>C*06:72</b>
<b>5<sup>7</sup></b>	460 bp	1070 bp	*01:04N	*03:21N, 11:21N, 23:07N, 24:11N
<b>6<sup>5</sup></b>	125 bp 210 bp	1070 bp	*01:60 *01:09	*26:31, <b>C*06:71</b> <b>C*07:274</b>
<b>7<sup>5</sup></b>	60 bp 115 bp	<b>800 bp</b>	*01:06 *01:86	*02:576, 31:62
<b>8<sup>5,6,7</sup></b>	110 bp  180 bp	1070 bp	*01:07, 01:23, 01:51, 01:83:01-01:83:02, 01:191 *01:01:01:02N	*24:243, 26:120, 31:35
<b>9<sup>7</sup></b>	235 bp	<b>800 bp</b>	*01:08, 01:27N	
<b>10<sup>5,6</sup></b>	120 bp 155 bp  240 bp 270 bp	<b>800 bp</b>	*01:150 *01:10  *01:137 *01:29	*03:231 <sup>w</sup> , 11:14 <sup>w</sup> , 11:50Q, 30:26, 80:01:01:01 <sup>w</sup> -80:03 <sup>w</sup>
<b>11</b>	135 bp  180 bp 275 bp	<b>800 bp</b>	*01:13, 01:28, 01:176, 01:194 *01:106 *01:11N	*31:35



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<b>12<sup>5,6,8</sup></b>	90 bp	<b>800 bp</b>		*02:576, 03:187, 11:155, 11:226, 31:62, 36:01-36:05, 68:41, <b>B*57:65, C*04:31, C*06:137</b>
	125 bp		*01:86, 01:115	
<b>13</b>	205 bp	1070 bp	*01:12, 01:19, 01:21, 01:126, 01:200	*02:156 <sup>w</sup> , 02:338 <sup>w</sup> , 03:02:01-03:02:04, 03:07 <sup>w</sup> , 03:10, 03:31-03:32, 03:42 <sup>w</sup> , 03:73, 03:76, 03:82, 03:90, 03:106, 03:113, 03:133 <sup>w</sup> , 03:160, 03:171 <sup>w</sup> , 03:198, 03:218, 03:223, 03:236-03:237, 03:242, 03:244, 11:31 <sup>w</sup> , 11:35 <sup>w</sup> , 11:60, 11:158 <sup>w</sup> , 11:183 <sup>w</sup> , 11:209, 24:92, 30:04:01 <sup>w</sup> -30:04:02 <sup>w</sup> , 30:06 <sup>w</sup> , 30:09 <sup>w</sup> , 30:17 <sup>w</sup> , 30:29 <sup>w</sup> , 30:46 <sup>w</sup> , 30:77 <sup>w</sup> , 30:90 <sup>w</sup> , 31:03 <sup>w</sup> -31:04 <sup>w</sup> , 33:49 <sup>w</sup> , 68:103:01 <sup>w</sup> -68:103:02 <sup>w</sup> , 74:23
<b>14<sup>5</sup></b>	75 bp 120 bp	1070 bp	*01:59 *01:13, 01:17, 01:176, 01:194	
<b>15</b>	235 bp	<b>800 bp</b>	*01:01:48, 01:12, 01:14, 01:19, 01:200	*02:156, 02:338, 03:01:01:01-03:01:05, 03:01:07-03:01:29, 03:01:31-03:01:48, 03:01:51-03:17:02, 03:19-03:39, 03:41-03:74, 03:76-03:94, 03:96-03:97, 03:99-03:104, 03:106-03:134, 03:136-03:176, 03:178N-03:193, 03:195-03:203, 03:205-03:207, 03:209-03:214, 03:216-03:246, 11:04, 11:27, 11:35, 11:130, 11:209, 24:92, 30:01:01-30:02:08, 30:02:10-30:04:02, 30:06-30:13, 30:15-30:20, 30:22-30:27N, 30:29-30:42, 30:44-30:46, 30:48-30:51, 30:53-30:71, 30:73N-30:79, 30:81-30:97, 31:03-31:04, 32:04, 33:49, 34:02:01-34:04, 34:07-34:10N, 34:13, 36:01-36:02, 36:05, 68:103:01-68:103:02, 74:23, 80:03
<b>16<sup>7</sup></b>	180 bp 235 bp	1070 bp	*01:01:01:02N *01:15N	
<b>17</b>	180 bp 210 bp 285 bp	1070 bp	*01:106 *01:16N *01:101	*03:87, 11:30, 30:92
<b>18</b>	140 bp	1070 bp	*01:01:01:01-01:04N, 01:06, 01:08-01:12, 01:14-01:27N, 01:29-01:33, 01:35-01:68, 01:70-01:94, 01:96-01:133, 01:135-01:175, 01:177-01:182, 01:184-01:193, 01:195-01:201	*26:120, 36:01-36:05
<b>19<sup>7</sup></b>	170 bp	1070 bp	*01:18N, 01:30, 01:145	*02:262, 02:547, 24:22, 24:160, 24:299
<b>20<sup>5</sup></b>	65 bp	<b>800 bp</b>	*01:10, 01:21, 01:26, 01:192	*03:135, 11:94, 11:112, 11:211, <b>B*15:90, B*45:05</b>

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<b>21<sup>5</sup></b>	125 bp 220 bp 255 bp	1070 bp	*01:44 *01:155 *01:20, 01:66, 01:130	*02:19, 02:36-02:37, 02:54, 02:255, 02:417, 24:14, 24:93, 24:324
<b>22<sup>7</sup></b>	590 bp	1070 bp	*01:22N, 01:107	
<b>23<sup>7</sup></b>	165 bp	1070 bp	*01:24, 01:30, 01:145	*02:262, 02:547, 24:22, 24:160, 24:299
<b>24</b>	215 bp	1070 bp	*01:12, 01:19, 01:25, 01:127, 01:136	*03:02:01-03:02:04, 03:10, 03:31- 03:32, 03:65, 03:69N, 03:73, 03:76, 03:82, 03:90, 03:106, 03:113, 03:160, 03:167, 03:198, 03:218, 03:223, 03:236-03:237, 03:242, 03:244, 11:01:01:01-11:01:03, 11:01:05-11:01:56, 11:01:58- 11:01:71, 11:02:01-11:07, 11:09- 11:22, 11:27, 11:29-11:30, 11:32:01-11:34, 11:36-11:43, 11:45-11:47, 11:49, 11:51-11:52Q, 11:54-11:93, 11:95-11:100, 11:102- 11:117, 11:119:01-11:138, 11:140- 11:142, 11:144-11:157, 11:159- 11:182Q, 11:184-11:190, 11:192- 11:210N, 11:212-11:225, 11:227- 11:238N, 24:92
<b>25<sup>5</sup></b>	80 bp 425 bp	1070 bp	*01:31N, 01:51, 01:59 *01:19, 01:173	*26:120
<b>26<sup>5</sup></b>	90 bp  460 bp 545 bp	1070 bp	*01:104, 01:134  *01:32 *01:45	*02:346, 02:427, 11:06, 25:11, 26:03:01, 26:06, 26:21, 26:36, 26:78, 26:92, 26:111, 80:01:01:01 <sup>w</sup>  *02:453, 02:557, 03:78, 11:108, 24:271, 66:17
<b>27<sup>5</sup></b>	110 bp 170 bp 195 bp	1070 bp	*01:87N *01:33, 01:141 *01:109	*03:193 *03:182, 11:100, 11:175
<b>28<sup>5</sup></b>	95 bp 135 bp 195 bp	1070 bp	*01:01:38L *01:132 *01:109	*24:02:03Q  *03:182, 11:100, 11:175
<b>29<sup>5</sup></b>	110 bp  155 bp 230 bp 285 bp	<b>800 bp</b>	*01:69:01-01:69:02  *01:35 *01:68 *01:101	*02:609, 03:107, 11:17, 23:09, 24:129, 26:62, 26:72, 32:24 *03:77, 11:144  *03:87, 11:30, 30:92
<b>30<sup>7</sup></b>	135 bp 175 bp  220 bp 280 bp	1070 bp	*01:95 *01:07, 01:100, 01:190, 01:194 *01:155 *01:142	*24:243 *24:243, 31:35  *24:150
<b>31<sup>6</sup></b>	240 bp	1070 bp	*01:38, 01:63	
<b>32<sup>5</sup></b>	110 bp  140 bp	1070 bp	*01:57N  *01:43	<b>B*40:291N, C*06:152N, C*07:191N</b> *26:120
<b>33<sup>5</sup></b>	85 bp	1070 bp	*01:61	<b>B*15:90, B*45:05</b>

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<b>34</b>	130 bp 215 bp	<b>800 bp</b>	*01:60, 01:71, 01:115 *01:58	*26:31, <b>C*06:71</b>
<b>35<sup>5</sup></b>	110 bp 180 bp 240 bp	<b>800 bp</b>	*01:47, 01:150 *01:07, 01:49, 01:100, 01:190, 01:194 *01:137	*11:229, 24:243, 31:35
<b>36<sup>5</sup></b>	90 bp 140 bp 175 bp 235 bp	1070 bp	*01:54 *01:48 *01:53N *01:123N	
<b>37<sup>5</sup></b>	65 bp 120 bp 155 bp	1070 bp	*01:65 *01:71 *01:77, 01:92	
<b>38<sup>5</sup></b>	100 bp 180 bp 240 bp	1070 bp	*01:50 *01:62 *01:68, 01:72	*02:315, 03:85 *11:236, 30:45
<b>39</b>	160 bp 205 bp	<b>800 bp</b>	*01:77, 01:113 *01:39	*24:26, 24:314
<b>40</b>	155 bp	1070 bp	*01:36, 01:113, 01:143	*31:35
<b>41<sup>5</sup></b>	95 bp	1070 bp	*01:55, 01:81	*03:26, 11:77, 11:126
<b>42<sup>5</sup></b>	110 bp 185 bp 255 bp	1070 bp	*01:87N *01:64, 01:141 *01:142	*03:232 *24:150
<b>43</b>	550 bp 590 bp	1070 bp	*01:45, 01:56N *01:107	*02:453, 02:557, 03:78, 11:69N, 11:108, 24:271, 66:17
<b>44<sup>5</sup></b>	65 bp 245 bp	1070 bp	*01:98 *01:46	*24:87, 24:285, <b>B*07:64</b>
<b>45<sup>5,7</sup></b>	65 bp 140 bp	1070 bp	*01:98 *01:52:01N	*24:87, 24:285, <b>B*07:64</b>
<b>46<sup>5</sup></b>	85 bp 155 bp 245 bp	1070 bp	*01:81 *01:40 *01:72, 01:147Q	*03:26, 11:77, 11:126 *11:160 *11:236, 30:45
<b>47<sup>7</sup></b>	295 bp 325 bp 450 bp 550 bp	1070 bp	*01:41 *01:42 *01:48 *01:123N	*11:48
<b>48</b>	180 bp	1070 bp	*01:144	
<b>49</b>	215 bp	1070 bp	*01:160N	
<b>50</b>	230 bp	1070 bp	*01:162N	
<b>51</b>	210 bp	1070 bp	*01:164	*24:193
<b>52</b>	250 bp	1070 bp	*01:178N-01:179N	
<b>53</b>	215 bp	1070 bp	*01:186N	
<b>54<sup>5</sup></b>	70 bp 155 bp	1070 bp	*01:103 *01:132	
<b>55</b>	150 bp	1070 bp	*01:52:02N	
<b>56<sup>9</sup></b>	-	-	<b>Negative Control</b>	

<sup>1</sup>Alleles are assigned by the presence of specific PCR product(s). However, the sizes of the specific PCR products may be helpful in the interpretation of HLA-A\*01 SSP typings. When the primers in a primer mix can give rise to HLA-specific PCR products of more than one length this is indicated if the size difference is more than 20 base pairs. Size differences of 20

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base pairs or less are not given. For high resolution SSP kits, the alleles listed are specified according to amplicon length.

Nonspecific amplifications, i.e. a ladder or a smear of bands, may sometimes be seen. GC-rich primers have a higher tendency of giving rise to nonspecific amplifications than other primers.

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

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

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

<sup>2</sup>The internal positive control primer pairs amplify segments of the human growth hormone gene. The internal positive control bands are 1070 or 800 base pairs respectively, well distribution as outlined in the table. Well number 1 contains the shorter, 800 bp, internal positive control band. The well distribution of the internal controls can help in orientation of the kit on gel photo, as well as allow for kit identification. In the presence of a specific amplification the intensity of the control band often decreases.

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

<sup>4</sup>Due to the sharing of sequence motifs between HLA-A alleles non-HLA-A\*01 alleles will be amplified by primer mixes 1, 2, 4 to 8, 10 to 13, 15, 17 to 21, 23 to 30, 32, 34, 35, 38 to 47 and 51. In addition, a few HLA-B and HLA-C alleles will be amplified by primer mixes 4, 6, 12, 20, 32 to 34, 44 and 45.

<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>Primer mixes 8, 10, 12 and 31 have a tendency of giving rise to primer oligomer formation.

<sup>7</sup>Primer mixes 5, 8, 9, 16, 19, 22, 23, 30, 45 and 47 may have tendencies of unspecific amplifications.

<sup>8</sup>Primer mixes 2, 3 and 12 may give rise to a lower yield of HLA-specific PCR product than the other A\*01 primer mixes.

<sup>9</sup>Primer mix 56 contains a negative control, which will amplify more than 95% of HLA amplicons as well as the amplicons generated by the control primer pairs matching the human growth hormone gene. HLA-specific PCR product sizes range from 75 to 200 base pairs and the PCR product generated by the HGH positive control primer pair is 430 base pairs.

‘w’, might be weakly amplified.

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### PRIMER SPECIFICATION

Well No.	1	2	3	4	5	6	7	8	9	10	11	12
Length of spec. PCR product	235	145	120	305	460	125	60	110	235	120	135	90
						210	115	180		155	180	125
										240	275	
										270		
Length of int. pos. control <sup>1</sup>	800	1070	800	1070	1070	1070	800	1070	800	800	800	800
5'-primer(s) <sup>2</sup>	363	98	123	341	3 <sup>rd</sup> I	171	521	203	363	113	203	521
	5'-ATA <sup>3'</sup>	5'-CTT <sup>3'</sup>	5'-AgT <sup>3'</sup>	5'-ggA <sup>3'</sup>	5'-ATA <sup>3'</sup>	5'-TTA <sup>3'</sup>	5'-ggT <sup>3'</sup>	5'-gAA <sup>3'</sup>	5'-ATA <sup>3'</sup>	5'-CCC <sup>3'</sup>	5'-gAA <sup>3'</sup>	5'-ggT <sup>3'</sup>
	363	98				257				413	363	
	5'-ATA <sup>3'</sup>	5'-CTT <sup>3'</sup>				5'-CCC <sup>3'</sup>				5'-CCg <sup>3'</sup>	5'-ATA <sup>3'</sup>	
3'-primer(s) <sup>3</sup>	559	203	203	362	621	341	538	271	553	341	299	570
	5'-CCg <sup>3'</sup>	5'-TCT <sup>3'</sup>	5'-TCT <sup>3'</sup>	5'-TCA <sup>3'</sup>	5'-ggg <sup>3'</sup>	5'-CgT <sup>3'</sup>	5'-CAA <sup>3'</sup>	5'-CAC <sup>3'</sup>	5'-CTA <sup>3'</sup>	5'-CgT <sup>3'</sup>	5'-CCA <sup>3'</sup>	5'-CAC <sup>3'</sup>
	559	203					595	341	559	490	500	595
	5'-CCg <sup>3'</sup>	5'-TCT <sup>3'</sup>					5'-CCg <sup>3'</sup>	5'-CgT <sup>3'</sup>	5'-CCA <sup>3'</sup>	5'-AgA <sup>3'</sup>	5'-TgC <sup>3'</sup>	5'-CCg <sup>3'</sup>
	559									527	597	616
	5'-CCT <sup>3'</sup>									5'-CCC <sup>3'</sup>	5'-TTA <sup>3'</sup>	5'-CgC <sup>3'</sup>
										613		
										5'-gCC <sup>3'</sup>		
Well No.	1	2	3	4	5	6	7	8	9	10	11	12

Well No.	13	14	15	16	17	18	19	20	21	22	23	24
Length of spec. PCR product	205	75	235	180	180	140	170	65	125	590	165	215
		120		235	210				220			
					285				255			
Length of int. pos. control <sup>1</sup>	1070	1070	800	1070	1070	1070	1070	800	1070	1070	1070	1070
5'-primer(s) <sup>2</sup>	363	203	363	203	363	203	215	521	355	3 <sup>rd</sup> I	89	363
	5'-ATA <sup>3'</sup>	5'-gAA <sup>3'</sup>	5'-ATA <sup>3'</sup>	5'-gAA <sup>3'</sup>	5'-ATA <sup>3'</sup>	5'-gAA <sup>3'</sup>	5'-gCC <sup>3'</sup>	5'-ggC <sup>3'</sup>	5'-CCg <sup>3'</sup>	5'-ATA <sup>3'</sup>	5'-gAA <sup>3'</sup>	5'-ATA <sup>3'</sup>
				363			413		484		413	
				5'-ATA <sup>3'</sup>			5'-CCA <sup>3'</sup>		5'-ACT <sup>3'</sup>		5'-CCA <sup>3'</sup>	
									627			
									5'-CCC <sup>3'</sup>			
3'-primer(s) <sup>3</sup>	527	237	559	341	500	299	341	545	570	750	203	539
	5'-CCA <sup>3'</sup>	5'-CCg <sup>3'</sup>	5'-CgT <sup>3'</sup>	5'-CgT <sup>3'</sup>	5'-TgC <sup>3'</sup>	5'-TCg <sup>3'</sup>	5'-CgT <sup>3'</sup>	5'-AgA <sup>3'</sup>	5'-CCg <sup>3'</sup>	5'-T.g <sup>3'</sup>	5'-TCT <sup>3'</sup>	5'-TCT <sup>3'</sup>
		282	559	557	531	300	545		805	750	545	
		5'-gAC <sup>3'</sup>	5'-CgT <sup>3'</sup>	5'-gC <sup>3'</sup>	5'-TCC <sup>3'</sup>	5'-TTT <sup>3'</sup>	5'-AgA <sup>3'</sup>		5'-CgT <sup>3'</sup>	5'-TCg <sup>3'</sup>	5'-AgA <sup>3'</sup>	
		282			605		545				545	
		5'-gAC <sup>3'</sup>			5'-gCA <sup>3'</sup>		5'-AgA <sup>3'</sup>				5'-AgA <sup>3'</sup>	
Well No.	13	14	15	16	17	18	19	20	21	22	23	24

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Well No.	25	26	27	28	29	30	31	32	33	34	35	36
Length of spec.	80	90	110	95	110	135	240	110	85	130	110	90
PCR product	425	460	170	135	155	175		140		215	180	140
		545	195	195	230	220					240	175
					285	280						235
Length of int.	1070	1070	1070	1070	800	1070	1070	1070	1070	800	800	1070
pos. control <sup>1</sup>												
5'-primer(s) <sup>2</sup>	203	292	98	650	203	203	360	102	502	168	203	413
	5'-gAA 3'	5'-CTC 3'	5'-CTT 3'	5'-CCC 3'	5'-gAg 3'	5'-gAA 3'	5'-CAC 3'	5'-ACC 3'	5'-CCC 3'	5'-CAT 3'	5'-gAA 3'	5'-CCg 3'
		3 <sup>rd</sup> I	650		363	627	383	385		257	413	
		5'-ATA 3'	5'-CCC 3'		5'-ATA 3'	5'-CCC 3'	5'-ggA 3'	5'-ggC 3'		5'-CCC 3'	5'-CCg 3'	
										261		
										5'-gAC 3'		
										521		
										5'-ggT 3'		
3'-primer(s) <sup>3</sup>	237	341	218	705	271	299	570	203	545	341	265	461
	5'-CCg 3'	5'-CgT 3'	5'-gCT 3'	5'-TCT 3'	5'-CAT 3'	5'-TCT 3'	5'-CCg 3'	5'-TCT 3'	5'-AgA 3'	5'-CgT 3'	5'-CCA 3'	5'-gCC 3'
	251	622	721	742	476	341		454		616	341	510
	5'-CCT 3'	5'-ggT 3'	5'-CA 3'	5'-CTT 3'	5'-CCA 3'	5'-Cgg 3'		5'-CTA 3'		5'-CgC 3'	5'-Cgg 3'	5'-CAg 3'
	259	704	791	806	554	755					490	549
	5'-gTT 3'	5'-CCA 3'	5'-AgT 3'	5'-CCA 3'	5'-CCg 3'	5'-CCA 3'					5'-AgA 3'	5'-AgT 3'
	346		806		605	805					556	608
	5'-AgC 3'		5'-CCA 3'		5'-gCA 3'	5'-CgT 3'					5'-gCT 3'	5'-CA 3'
						866					613	
						5'-gAA 3'					5'-gCC 3'	
Well No.	25	26	27	28	29	30	31	32	33	34	35	36

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Well No.	37	38	39	40	41	42	43	44	45	46	47	48
Length of spec.	65	100	160	155	95	110	550	65	65	85	295	180
PCR product	120	180	205			185	590	245	140	155	325	
		155	240			255				245	450	
											550	
Length of int.	1070	1070	800	1070	1070	1070	1070	1070	1070	1070	1070	1070
pos. control <sup>1</sup>												
5'-primer(s) <sup>2</sup>	230	102	82	82	349	102	3 <sup>rd</sup> I	364	470	363	341	203
	5'-Agg 3'	5'-ACA 3'	5'-ACC 3'	5'-ACC 3'	5'-CTg 3'	5'-ACA 3'	5'-ATA 3'	5'-TAg 3'	5'-TTA 3'	5'-ATA 3'	5'-ggA 3'	5'-gAA 3'
	261	363	404	97	831	650		545	545	831		
	5'-gAC 3'	5'-ATA 3'	5'-CCA 3'	5'-TCA 3'	5'-gAg 3'	5'-CCC 3'		5'-AgC 3'	5'-AgC 3'	5'-gAg 3'		
	454		454	428								
	5'-ACA 3'		5'-ACA 3'	5'-Cgg 3'								
	548											
	5'-CTg 3'											
3'-primer(s) <sup>3</sup>	341	241	203	203	413	250	704	570	570	479	353	343
	5'-CgT 3'	5'-CgA 3'	5'-TCT 3'	5'-TCT 3'	5'-gCC 3'	5'-CCg 3'	5'-CCA 3'	5'-CCg 3'	5'-CCg 3'	5'-CCA 3'	5'-TgA 3'	5'-T 3'
	570	420	570	545	874	721	723			564	382	
	5'-CCg 3'	5'-gCT 3'	5'-CCg 3'	5'-AgA 3'	5'-CTC 3'	5'-CA 3'	5'-TgT 3'			5'-ACC 3'	5'-CCA 3'	
		554				791	750			570	510	
		5'-CCg 3'				5'-AgT 3'	5'-TCg 3'			5'-CAg 3'	5'-CAg 3'	
		570				866				874	608	
		5'-CAg 3'				5'-gAA 3'				5'-CTC 3'	5'-CA 3'	
Well No.	37	38	39	40	41	42	43	44	45	46	47	48

Well No.	49	50	51	52	53	54	55
Length of spec.	215	230	210	250	215	70	150
PCR product						155	
Length of int.	1070	1070	1070	1070	1070	1070	1070
pos. control <sup>1</sup>							
5'-primer(s) <sup>2</sup>	363	98	401	363	166	627	363
	5'-ATA 3'	5'-CTT 3'	5'-CCC 3'	5'-ATA 3'	5'-CgT 3'	5'-CCC 3'	5'-ATA 3'
3'-primer(s) <sup>3</sup>	535	286	570	564	341	658	471
	5'-CTA 3'	5'-CTA 3'	5'-CCg 3'	5'-ACT 3'	5'-CgT 3'	5'-gTg 3'	5'-gTT 3'
				580		742	
				5'-TCA 3'		5'-CTT 3'	
Well No.	49	50	51	52	53	54	55

<sup>1</sup>The internal positive control primer pairs amplify segments of the human growth hormone gene. The internal positive control bands are 1070 or 800 base pairs respectively, well distribution as outlined in the table. Well number 1 contains the shorter, 800 bp, internal positive control band. The well distribution of the internal controls can help in orientation of the kit on gel photo, as well as allow for kit identification. In the presence of a specific amplification the intensity of the control band often decreases.

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

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

101.411-24/06 – including *Taq* polymerase, IFU-01  
101.411-24u/06u – without *Taq* polymerase, IFU-02

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“Instructions for Use” (IFU)

Lot No.: **1E6**

Lot-specific information

CELL LINE VALIDATION SHEET																				
HLA-A*01 SSP subtyping kit <sup>2</sup>																				
				Well																
				1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	
				Prod. No.:	201442001	201442002	201442003	201442004	201670105	201442006	201442007	201442008	201668909	201668910	201442011	201442012	201442013	201442014	201442015	201442016
IHCW cell line <sup>1</sup>		A*																		
1	9001	SA	*24:02	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
2	9280	LK707	*02:01	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
3	9011	E4181324	*01:01	+	+	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
4	9275	GU373	*30:01	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	+	-
5	9009	KAS011	*01:01	+	+	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
6	9353	SM	*02:01	*26:03	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
7	9020	QBL	*26:01	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
8	9025	DEU	*31:01	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
9	9026	YAR	*26:01	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
10	9107	LKT3	*24:02	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
11	9051	PITOUT	*29:02	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
12	9052	DBB	*02:01	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
13	9004	JESTHOM	*02:01	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
14	9071	OLGA	*31:01	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
15	9075	DKB	*24:02	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
16	9037	SWEIG007	*29:02	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
17	9282	CTM3953540	*03:01	*80:01	-	-	-	-	-	-	-	-	W	-	-	-	-	+	-	-
18	9257	32367	*33:03	*74:01	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
19	9038	BM16	*02:01	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
20	9059	SLE005	*02:01	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
21	9064	AMALA	*02:17	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
22	9056	KOSE	*02:01	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
23	9124	IHL	*02:01	*34:01	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
24	9035	JBUSH	*32:01	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
25	9049	IBW9	*33:01	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
26	9285	WT49	*02:05	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
27	9191	CH1007	*24:10	*29:01	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
28	9320	BEL5GB	*02:01	*29:02	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
29	9050	MOU	*29:02	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
30	9021	RSH	*30:01	*68:02	-	-	-	-	-	-	-	-	-	-	-	-	-	-	+	-
31	9019	DUCAF	*30:02	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	+	-
32	9297	HAG	*02:01	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
33	9098	MT14B	*31:01	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
34	9104	DHIF	*31:01	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
35	9302	SSTO	*32:01	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
36	9024	KT17	*02:06	*11:01	+	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
37	9065	HHKB	*03:01	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	+	-
38	9099	LZL	*02:17	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
39	9315	CML	*01:01	*03:01	+	+	-	-	-	-	-	-	-	-	-	-	-	-	+	-
40	9134	WHONP199	*02:07	*30:01	-	-	-	-	-	-	-	-	-	-	-	-	-	-	+	-
41	9055	H0301	*03:01	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	+	-
42	9066	TAB089	*02:07	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
43	9076	T7526	*02:06	*02:07	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
44	9057	TEM	*66:01	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
45	9239	SHJO	*23:01	*24:02	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
46	9013	SCHU	*03:01	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	+	-
47	9045	TUBO	*02:16	*03:01	-	-	-	-	-	-	-	-	-	-	-	-	-	-	+	-
48	9303	TER-ND	*02:01	*11:01	+	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



101.411-24/06 – including *Taq* polymerase, IFU-01  
101.411-24u/06u – without *Taq* polymerase, IFU-02

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Lot No.: **1E6**

Lot-specific information

CELL LINE VALIDATION SHEET				Well															
HLA-A*01 SSP subtyping kit <sup>2</sup>																			
			Prod. No.:	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32
	IHC cell line <sup>1</sup>	A*		201442017	201442018	201442019	201442020	201442021	201442022	201442023	201442024	201442025	201442026	201442027	201556828	201442029	201442030	201442031	201442032
1	9001 SA	*24:02		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
2	9280 LK707	*02:01		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
3	9011 E4181324	*01:01		-	+	-	-	-	-	-	-	-	-	-	-	-	-	-	-
4	9275 GU373	*30:01		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
5	9009 KAS011	*01:01		-	+	-	-	-	-	-	-	-	-	-	-	-	-	-	-
6	9353 SM	*02:01	*26:03	-	-	-	-	-	-	-	-	-	-	+	-	-	-	-	-
7	9020 QBL	*26:01		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
8	9025 DEU	*31:01		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
9	9026 YAR	*26:01		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
10	9107 LKT3	*24:02		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
11	9051 PITOUT	*29:02		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
12	9052 DBB	*02:01		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
13	9004 JESTHOM	*02:01		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
14	9071 OLGA	*31:01		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
15	9075 DKB	*24:02		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
16	9037 SWEIG007	*29:02		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
17	9282 CTM3953540	*03:01	*80:01	-	-	-	-	-	-	-	-	-	-	W	-	-	-	-	-
18	9257 32367	*33:03	*74:01	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
19	9038 BM16	*02:01		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
20	9059 SLE005	*02:01		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
21	9064 AMALA	*02:17		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
22	9056 KOSE	*02:01		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
23	9124 IHL	*02:01	*34:01	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
24	9035 JBUSH	*32:01		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
25	9049 IBW9	*33:01		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
26	9285 WT49	*02:05		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
27	9191 CH1007	*24:10	*29:01	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
28	9320 BEL5GB	*02:01	*29:02	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
29	9050 MOU	*29:02		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
30	9021 RSH	*30:01	*68:02	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
31	9019 DUCAF	*30:02		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
32	9297 HAG	*02:01		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
33	9098 MT14B	*31:01		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
34	9104 DHIF	*31:01		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
35	9302 SSTO	*32:01		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
36	9024 KT17	*02:06	*11:01	-	-	-	-	-	-	-	+	-	-	-	-	-	-	-	-
37	9065 HHKB	*03:01		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
38	9099 LZL	*02:17		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
39	9315 CML	*01:01	*03:01	-	+	-	-	-	-	-	-	-	-	-	-	-	-	-	-
40	9134 WHONP199	*02:07	*30:01	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
41	9055 H0301	*03:01		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
42	9066 TAB089	*02:07		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
43	9076 T7526	*02:06	*02:07	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
44	9057 TEM	*66:01		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
45	9239 SHJO	*23:01	*24:02	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
46	9013 SCHU	*03:01		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
47	9045 TUBO	*02:16	*03:01	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
48	9303 TER-ND	*02:01	*11:01	-	-	-	-	-	-	-	+	-	-	-	-	-	-	-	-

101.411-24/06 – including *Taq* polymerase, IFU-01  
101.411-24u/06u – without *Taq* polymerase, IFU-02

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Lot No.: **1E6**

Lot-specific information

<b>CELL LINE VALIDATION SHEET</b>																			
<b>HLA-A*01 SSP subtyping kit<sup>2</sup></b>																			
			Prod. No.:	Well															
				33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48
				201442033	201442034	201442035	201442036	201442037	201442038	201442039	201442040	201442041	201670142	201442043	201442044	201442045	201442046	201442047	201556848
	<b>IHWC cell line<sup>1</sup></b>	<b>A*</b>																	
1	9001 SA	*24:02		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
2	9280 LK707	*02:01		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
3	9011 E4181324	*01:01		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
4	9275 GU373	*30:01		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
5	9009 KAS011	*01:01		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
6	9353 SM	*02:01	*26:03	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
7	9020 QBL	*26:01		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
8	9025 DEU	*31:01		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
9	9026 YAR	*26:01		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
10	9107 LKT3	*24:02		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
11	9051 PITOUT	*29:02		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
12	9052 DBB	*02:01		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
13	9004 JESTHOM	*02:01		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
14	9071 OLGA	*31:01		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
15	9075 DKB	*24:02		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
16	9037 SWEIG007	*29:02		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
17	9282 CTM3953540	*03:01	*80:01	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
18	9257 32367	*33:03	*74:01	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
19	9038 BM16	*02:01		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
20	9059 SLE005	*02:01		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
21	9064 AMALA	*02:17		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
22	9056 KOSE	*02:01		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
23	9124 IHL	*02:01	*34:01	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
24	9035 JBUSH	*32:01		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
25	9049 IBW9	*33:01		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
26	9285 WT49	*02:05		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
27	9191 CH1007	*24:10	*29:01	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
28	9320 BEL5GB	*02:01	*29:02	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
29	9050 MOU	*29:02		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
30	9021 RSH	*30:01	*68:02	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
31	9019 DUCAF	*30:02		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
32	9297 HAG	*02:01		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
33	9098 MT14B	*31:01		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
34	9104 DHIF	*31:01		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
35	9302 SSTO	*32:01		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
36	9024 KT17	*02:06	*11:01	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
37	9065 HHKB	*03:01		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
38	9099 LZL	*02:17		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
39	9315 CML	*01:01	*03:01	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
40	9134 WHONP199	*02:07	*30:01	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
41	9055 H0301	*03:01		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
42	9066 TAB089	*02:07		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
43	9076 T7526	*02:06	*02:07	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
44	9057 TEM	*66:01		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
45	9239 SHJO	*23:01	*24:02	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
46	9013 SCHU	*03:01		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
47	9045 TUBO	*02:16	*03:01	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
48	9303 TER-ND	*02:01	*11:01	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

101.411-24/06 – including *Taq* polymerase, IFU-01  
101.411-24u/06u – without *Taq* polymerase, IFU-02

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Lot No.: **1E6**

Lot-specific information

CELL LINE VALIDATION SHEET											
HLA-A*01 SSP subtyping kit <sup>2</sup>											
				Well							
				49	50	51	52	53	54	55	
				Prod. No.:	201556849	201556850	201556851	201556852	201556853	201668954	201670155
	IHWC cell line <sup>1</sup>	A*									
1	9001 SA	*24:02			-	-	-	-	-	-	-
2	9280 LK707	*02:01			-	-	-	-	-	-	-
3	9011 E4181324	*01:01			-	-	-	-	-	-	-
4	9275 GU373	*30:01			-	-	-	-	-	-	-
5	9009 KAS011	*01:01			-	-	-	-	-	-	-
6	9353 SM	*02:01	*26:03		-	-	-	-	-	-	-
7	9020 QBL	*26:01			-	-	-	-	-	-	-
8	9025 DEU	*31:01			-	-	-	-	-	-	-
9	9026 YAR	*26:01			-	-	-	-	-	-	-
10	9107 LKT3	*24:02			-	-	-	-	-	-	-
11	9051 PITOUT	*29:02			-	-	-	-	-	-	-
12	9052 DBB	*02:01			-	-	-	-	-	-	-
13	9004 JESTHOM	*02:01			-	-	-	-	-	-	-
14	9071 OLGA	*31:01			-	-	-	-	-	-	-
15	9075 DKB	*24:02			-	-	-	-	-	-	-
16	9037 SWEIG007	*29:02			-	-	-	-	-	-	-
17	9282 CTM3953540	*03:01	*80:01		-	-	-	-	-	-	-
18	9257 32367	*33:03	*74:01		-	-	-	-	-	-	-
19	9038 BM16	*02:01			-	-	-	-	-	-	-
20	9059 SLE005	*02:01			-	-	-	-	-	-	-
21	9064 AMALA	*02:17			-	-	-	-	-	-	-
22	9056 KOSE	*02:01			-	-	-	-	-	-	-
23	9124 IHL	*02:01	*34:01		-	-	-	-	-	-	-
24	9035 JBUSH	*32:01			-	-	-	-	-	-	-
25	9049 IBW9	*33:01			-	-	-	-	-	-	-
26	9285 WT49	*02:05			-	-	-	-	-	-	-
27	9191 CH1007	*24:10	*29:01		-	-	-	-	-	-	-
28	9320 BEL5GB	*02:01	*29:02		-	-	-	-	-	-	-
29	9050 MOU	*29:02			-	-	-	-	-	-	-
30	9021 RSH	*30:01	*68:02		-	-	-	-	-	-	-
31	9019 DUCAF	*30:02			-	-	-	-	-	-	-
32	9297 HAG	*02:01			-	-	-	-	-	-	-
33	9098 MT14B	*31:01			-	-	-	-	-	-	-
34	9104 DHIF	*31:01			-	-	-	-	-	-	-
35	9302 SSTO	*32:01			-	-	-	-	-	-	-
36	9024 KT17	*02:06	*11:01		-	-	-	-	-	-	-
37	9065 HHKB	*03:01			-	-	-	-	-	-	-
38	9099 LZL	*02:17			-	-	-	-	-	-	-
39	9315 CML	*01:01	*03:01		-	-	-	-	-	-	-
40	9134 WHONP199	*02:07	*30:01		-	-	-	-	-	-	-
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45	9239 SHJO	*23:01	*24:02		-	-	-	-	-	-	-
46	9013 SCHU	*03:01			-	-	-	-	-	-	-
47	9045 TUBO	*02:16	*03:01		-	-	-	-	-	-	-
48	9303 TER-ND	*02:01	*11:01		-	-	-	-	-	-	-

101.411-24/06 – including *Taq* polymerase, IFU-01  
101.411-24u/06u – without *Taq* polymerase, IFU-02

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**Lot No.: 1E6**

**Lot-specific information**

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

<sup>2</sup>The specificity of each primer solution in the kit has been tested against 48 well characterized cell line DNAs and where applicable, additional cell line DNAs.

No DNAs carrying the alleles to be amplified by primer solutions 6 to 11, 14, 16, 19 to 23, 25 and 27 to 55 were available. The specificities of primers in primer solutions 7, 8, 10, 11, 14, 19 to 21, 23, 25, 27 to 30, 32 to 35, 38, 40, 41, 44 to 46 and 48 were tested by separately adding additional 5'-primers, respectively additional 3'-primers. In primer solution 6, 31, 37, 39, 51 and 53 it was only possible to test the 3'-primer, the 5'-primers were not possible to test. In primer solutions 9, 16, 22, 36, 42, 43, 47, 49, 50, 52, 54 and 55 it was only possible to test the 5'-primers, the 3'-primers were not possible to test. In primer solutions 1, 7, 8, 10 to 12, 14, 17, 18, 21, 25 to 30, 32, 34, 35, 38 and 46 one, two or three of the 3'-primers were not possible to test, and in primer solutions 2, 10, 19, 21, 34, 40, 41, 44 and 45 one, two or three of the 5'-primers were not possible to test. Additional primers in primer solutions 15 and 26 were tested by separately adding one 5'-primer or one 3'-primer.

101.411-24/06 – including *Taq* polymerase, IFU-01  
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Lot No.: **1E6**

Lot-specific information

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