

101.611-12 – including *Taq* polymerase, IFU-01
101.611-12u – without *Taq* polymerase, IFU-02

Visit www.olerup-ssp.com for
“Instructions for Use” (IFU)

Lot No.: **64V**

Lot-specific information
Olerup SSP® HLA-C*03

Product number:	101.611-12 – including <i>Taq</i> polymerase 101.611-12u – without <i>Taq</i> polymerase
Lot number:	64V
Expiry date:	2016-October-01
Number of tests:	12
Number of wells per test:	47+1
Storage - pre-aliquoted primers:	dark at -20°C
- PCR Master Mix:	-20°C
- Adhesive PCR seals	RT
- Product Insert	RT

This Product Description is only valid for Lot No. 64V.

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

**CHANGES COMPARED TO THE PREVIOUS OLERUP SSP®
HLA-C*03 LOT (94R).**

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

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

A well containing Negative Control primer pairs has been added.

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

¹As described in section Uniquely Identified Alleles.

The HLA-C*03 specificity and interpretation tables have been updated for the HLA-C alleles described since the previous *Olerup SSP®* HLA-C*03 lot was made (Lot No. 94R).

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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, modified or added compared to the previous lot.

Well	5'-primer	3'-primer	rationale
16	Added	Added	Primer pair added for the C*03:218 and C*02:226 alleles.
17	Added	Added, modified	Primer pair added for the C*03:167 allele, 3'-primer modified for improved HLA-specific amplification.
18	Modified	-	5'-primer modified for improved HLA-specific amplification.
19	Added	Added	Primer pair added for the C*03:236 allele.
20	Added	Added	Primer pair added for the C*03:227 allele.
22	Added	Added	Primer pair added for the C*03:213 allele.
24	Added	Added	5'-primer added for the C*03:121N allele, 3'-primer added for the C*03:229N allele.
25	Added	-	5'-primers added for the C*03:207 and C*03:211:02 alleles.
27	-	Added	3'-primers added for the C*03:208N allele.
31	Added	Added	Primer pair added from well 48.
32	-	Added	3'-primer added for the C*03:189N allele.
33	-	Added	3'-primer added for the C*03:224N allele.
35	-	Added	3'-primer added for the C*03:229N allele.
36	Added	Added	Primer pair added for the C*03:219 allele.
38	-	Added	3'-primer added for the C*03:145 allele.
39	-	Added	3'-primer added for the C*03:145 allele.
41	-	Added	3'-primer added for the C*03:205 allele.
42	-	Added	3'-primer added for the C*03:201N allele.
44	-	Added	3'-primer added for the C*03:229N allele.
45	Added	Added	Primer pair added for the C*03:206 allele.
48	Moved	Moved	Primer pair moved to well 31, Negative Control.

Changes in revision R01 compared to R00:

1. Primer mix 25 does not amplify the C*07:10 allele. This primer mix may also give rise to a lower yield of HLA-specific PCR product than the other HLA-C*03 high resolution primer mixes. This has been corrected in the Specificity and Interpretation Tables.

Changes in revision R02 compared to R01:

1. The C*07:10 allele is amplified by primer mix 25. This has been corrected in the Specificity and Interpretation Tables.

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Lot-specific information

Well **48** contains Negative Control primer pairs, that will amplify more than 95% of the *Olerup SSP®* HLA Class I, DRB, DQB1 and DPB1 amplicons as well as amplicons generated by a control primer pair.

PCR product sizes range from 75 to 430 base pairs.
The PCR product generated by the control primer pair is 430 base pairs.

Length of PCR product	105	200	105	80	75	80
5'-primer¹	164	340	440	45	45	43
	5'-CAC ^{3'}	5'-Agg ^{3'}	5'-TTA ^{3'}	5'-Tgg ^{3'}	5'-Tgg ^{3'}	5'-Tgg ^{3'}
3'-primer²	231	2nd I	507	59	58	57
	5'-TgC ^{3'}	5'-AAA ^{3'}	5'-TTg ^{3'}	5'-CTC ^{3'}	5'-ggC ^{3'}	5'-CTC ^{3'}
A*	+	+	+			
B*	+	+	+			
C*	+	+	+			
DRB1				+	+	
DRB3				+	+	
DRB5				+		
DQB1					+	
DPB1						+

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

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

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Lot No.: **64V**

Lot-specific information

PRODUCT DESCRIPTION

HLA-C*03 SSP subtyping

CONTENT

The primer set contains 5'- and 3'-primers for identifying the HLA-C*03:02 to C*03:236 alleles.

PLATE LAYOUT

Each test consists of 48 PCR reactions in a 48 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	32
33	34	35	36	37	38	39	40
41	42	43	44	45	46	47	NC

The 48 well cut PCR plate is marked with ‘HLA-C*03’ in silver/gray ink.

Well No. 1 is marked with the Lot Number ‘64V’.

Wells 1 to 47 – HLA-C*03 high resolution primers.

Well 48 – Negative Control (NC).

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

The PCR plates are heat-sealed with a PCR-compatible foil.

Please note: When removing each 48 well PCR plate, make sure that the remaining plates stay sealed. Use a scalpel or a similar instrument to carefully cut the foil between the plates.

INTERPRETATION

Due to the sharing of sequence motifs between HLA-C alleles, non-HLA-C*03 alleles will be amplified by primer mixes 1 to 3, 5, 7 to 16, 19, 20, 22, 23, 25 to 35, 37 to 39, 41 and 45 to 47. In addition, a few HLA-B alleles will be amplified by primer mixes 1, 2, 5 to 8, 12 to 14, 16, 18, 25, 26, 28, 29, 33, 40, 42 and 43.

For further details see Specificity Table.

UNIQUELY IDENTIFIED ALLELES

All the HLA-C*03 alleles, i.e. **C*03:02 to C*03:236**, recognized by the HLA Nomenclature Committee in January 2014^{1,2} will be amplified by the primers in the HLA-C*03 subtyping kit³.

The HLA-C*03 kit enables separation of the confirmed HLA- C*03 alleles as listed in the IMGT/HLA database. An HLA allele is listed as confirmed by IMGT/HLA if it has been sequenced by more than a single laboratory or from multiple sources. Current allele confirmation status for HLA- C*03 alleles is listed below.

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

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

Alleles	Primer mix	Alleles	Primer mix
C*03:24, 03:236	19	C*03:56, 03:85	35
C*03:28, 03:90	23	C*03:64:01, 03:82	35
C*03:37:01-03:37:02, 03:208N	27	C*03:68, 03:205	41
C*03:44, 03:123, 03:209	31	C*03:70, 03:78, 03:179	42
C*03:49, 03:103	23	C*03:76, 03:206	45
C*03:50, 03:122	36	C*03:171, 03:207	25

The HLA-C*03 subtyping kit cannot distinguish the following silent mutations: the C*03:02:01-03:02:09 and 03:02:11-03:02:12, the C*03:03:01-03:03:11, 03:03:13-03:03:14, 03:03:16-03:03:20 and 03:03:22-03:03:24, the C*03:03:12 and 03:03:15, the C03:04:01:01-03:04:18, 03:04:20-03:04:24 and 03:04:27-03:04:44, the C*03:13:01-03:13:02, the 03:37:01-03:37:02, the C*03:38:01-03:38:02, the 03:40:01 and 03:40:03, the 03:116:01-03:116:02 or the C*03:211:01-03:211:02 alleles.

¹HLA-C alleles listed on the IMGT/HLA web page 2014-January-17, release 3.15.0, www.ebi.ac.uk/imgt/hla.

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

³The C*03:135, C*03:154, and C*15:43 give rise to identical amplification patterns with the HLA-C*03 subtyping kit. These alleles can be distinguished by the HLA-C low resolution kit and/or the HLA-C*15 subtyping kits.

RESOLUTION IN HOMO- AND HETEROZYGOTES

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

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Allele Confirmation Status

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

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Allele	Status ¹	Allele	Status ¹	Allele	Status ¹
C*03:114	Unconfirmed	C*03:163	Unconfirmed	C*03:212	Unconfirmed
C*03:115	Unconfirmed	C*03:164	Unconfirmed	C*03:213	Unconfirmed
C*03:116:01	Confirmed	C*03:165	Unconfirmed	C*03:214	Unconfirmed
C*03:116:02	Unconfirmed	C*03:166	Unconfirmed	C*03:215	Unconfirmed
C*03:117	Unconfirmed	C*03:167	Confirmed	C*03:216	Unconfirmed
C*03:118	Unconfirmed	C*03:168	Unconfirmed	C*03:217	Unconfirmed
C*03:119	Unconfirmed	C*03:169Q	Unconfirmed	C*03:218	Unconfirmed
C*03:120	Confirmed	C*03:170	Unconfirmed	C*03:219	Unconfirmed
C*03:121N	Unconfirmed	C*03:171	Unconfirmed	C*03:220	Unconfirmed
C*03:122	Confirmed	C*03:172	Unconfirmed	C*03:221	Unconfirmed
C*03:123	Confirmed	C*03:173	Unconfirmed	C*03:222	Unconfirmed
C*03:124	Unconfirmed	C*03:174	Unconfirmed	C*03:223	Unconfirmed
C*03:125	Unconfirmed	C*03:175	Unconfirmed	C*03:224N	Unconfirmed
C*03:126	Unconfirmed	C*03:176	Unconfirmed	C*03:225	Unconfirmed
C*03:127	Unconfirmed	C*03:177	Unconfirmed	C*03:226	Unconfirmed
C*03:128	Unconfirmed	C*03:178	Unconfirmed	C*03:227	Unconfirmed
C*03:129	Unconfirmed	C*03:179	Unconfirmed	C*03:228	Unconfirmed
C*03:130	Unconfirmed	C*03:180	Unconfirmed	C*03:229N	Unconfirmed
C*03:131	Unconfirmed	C*03:181	Unconfirmed	C*03:230	Unconfirmed
C*03:132	Unconfirmed	C*03:182	Unconfirmed	C*03:231	Unconfirmed
C*03:133	Unconfirmed	C*03:183	Unconfirmed	C*03:232	Unconfirmed
C*03:134	Unconfirmed	C*03:184	Unconfirmed	C*03:233	Unconfirmed
C*03:135	Unconfirmed	C*03:185	Unconfirmed	C*03:234	Unconfirmed
C*03:136	Confirmed	C*03:186	Unconfirmed	C*03:235	Unconfirmed
C*03:137	Unconfirmed	C*03:187	Unconfirmed	C*03:236	Unconfirmed
C*03:138	Unconfirmed	C*03:188	Unconfirmed		
C*03:139	Confirmed	C*03:189N	Unconfirmed		
C*03:140	Confirmed	C*03:190	Unconfirmed		
C*03:141	Unconfirmed	C*03:191	Unconfirmed		
C*03:142	Unconfirmed	C*03:192	Unconfirmed		
C*03:143	Unconfirmed	C*03:193	Unconfirmed		
C*03:144	Unconfirmed	C*03:194	Unconfirmed		
C*03:145	Confirmed	C*03:195	Unconfirmed		
C*03:146	Unconfirmed	C*03:196	Unconfirmed		
C*03:147	Unconfirmed	C*03:197	Unconfirmed		
C*03:148	Unconfirmed	C*03:198	Unconfirmed		
C*03:149	Unconfirmed	C*03:199	Unconfirmed		
C*03:150	Unconfirmed	C*03:200	Unconfirmed		
C*03:151	Unconfirmed	C*03:201N	Unconfirmed		
C*03:152	Unconfirmed	C*03:202	Unconfirmed		
C*03:153	Unconfirmed	C*03:203	Unconfirmed		
C*03:154	Unconfirmed	C*03:204	Unconfirmed		
C*03:155	Confirmed	C*03:205	Unconfirmed		
C*03:156	Unconfirmed	C*03:206	Unconfirmed		
C*03:157	Unconfirmed	C*03:207	Unconfirmed		
C*03:158	Unconfirmed	C*03:208N	Unconfirmed		
C*03:159	Unconfirmed	C*03:209	Unconfirmed		
C*03:160	Unconfirmed	C*03:210	Unconfirmed		
C*03:161	Unconfirmed	C*03:211:01	Unconfirmed		
C*03:162	Unconfirmed	C*03:211:02	Unconfirmed		

¹Allele status “confirmed” or “unconfirmed” as listed on the IMGT/HLA web page 2014-January-17, release 3.15.0, www.ebi.ac.uk/imgt/hla.

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Lot-specific information
SPECIFICITY TABLE

HLA-C*03 SSP subtyping

Specificities and sizes of the PCR products of the 47+1 primer mixes used for HLA-C*03 SSP subtyping

Primer Mix	Size of spec. PCR product ¹	Size of control band ²	Amplified HLA-C*03 alleles ³	Other amplified HLA Class I alleles ⁴
1	280 bp	800 bp	*03:02:01-03:02:09, 03:02:11-03:02:12, 03:04:01-01-03:04:25, 03:04:27-03:10, 03:14-03:17, 03:19, 03:23-03:29, 03:32-03:38:02, 03:40:01-03:42, 03:44-03:48, 03:51, 03:54, 03:57, 03:60, 03:63-03:64:01, 03:65, 03:70-03:74, 03:77-03:78, 03:80, 03:82, 03:84, 03:87, 03:89-03:95, 03:98, 03:100-03:101, 03:104-03:111, 03:113-03:115, 03:117-03:118, 03:121N, 03:123, 03:125, 03:128-03:131, 03:134-03:136, 03:138-03:140, 03:143, 03:145-03:149, 03:153-03:155, 03:157, 03:159, 03:162-03:164, 03:169Q, 03:172-03:174, 03:178-03:181, 03:183-03:184, 03:186, 03:190-03:191, 03:193-03:194, 03:197-03:201N, 03:208N-03:213, 03:215-03:216, 03:218-03:219, 03:221-03:222, 03:224N-03:226, 03:232-03:236	*02:02:01-02:02:03, 02:02:05-02:03, 02:04 ^w , 02:05:01-02:13, 02:14 ^w , 02:15-02:25Q, 02:26:02-02:32, 02:34-02:40, 02:42-02:74, 04:03:01-04:03:02, 04:06, 04:16, 04:80, 04:107, 04:147, 04:160, 05:58:01, 06:03:01, 07:02:10 ^w , 07:96:01-07:96:02, 07:127 ^w , 12:03:23, 15:02:01-15:05:08, 15:05:10-15:09, 15:10:02-15:11, 15:13, 15:15-15:19, 15:21-15:22, 15:24-15:35, 15:37-15:60, 15:62, 15:64-15:84Q, 16:34, B*40:164
2	210 bp	1070 bp	*03:02:01-03:02:12, 03:14-03:15, 03:33, 03:36, 03:40:01-03:40:03, 03:42-03:43:02, 03:60, 03:71, 03:84, 03:89, 03:95, 03:108, 03:110, 03:119, 03:121N, 03:132, 03:139, 03:146, 03:169Q, 03:175, 03:190, 03:194, 03:197-03:201N, 03:216, 03:221-03:222, 03:224N-03:226	*07:133, 07:242, 07:330, B*15:96
3	280 bp	800 bp	*03:03:01-03:03:20, 03:03:22-03:03:24, 03:11:01-03:11:02, 03:13:01-03:13:02, 03:20N-03:22Q, 03:30-03:31, 03:43:01-03:43:02, 03:49-03:50, 03:52-03:53, 03:55-03:56, 03:58-03:59, 03:61-03:62, 03:66, 03:67 ^w , 03:68-03:69, 03:75-03:76, 03:79, 03:81, 03:83, 03:85-03:86, 03:88, 03:96-03:97, 03:102-03:103, 03:112, 03:116:01-03:116:02, 03:119-03:120, 03:122, 03:124, 03:126-03:127, 03:132-03:133, 03:141-03:142, 03:150-03:152, 03:158, 03:160-03:161, 03:165, 03:167-03:168, 03:171,	*15:12

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Lot-specific information

			03:175-03:177, 03:185, 03:187-03:189N, 03:192, 03:196, 03:202-03:207, 03:214, 03:217, 03:220, 03:223, 03:227-03:230	
4	275 bp	1070 bp	*03:03:01-03:04:44, 03:06-03:11:02, 03:14, 03:18-03:24, 03:26, 03:28-03:32, 03:34, 03:37:01-03:40:03, 03:42-03:57, 03:59, 03:61-03:70, 03:72-03:83, 03:85, 03:87-03:88, 03:90-03:93, 03:96, 03:98, 03:100-03:107, 03:109, 03:111-03:112, 03:114-03:120, 03:122-03:131, 03:133-03:134, 03:136-03:138, 03:140-03:145, 03:147-03:150, 03:152-03:153, 03:155-03:164, 03:166, 03:168, 03:170-03:176, 03:179-03:189N, 03:191-03:193, 03:195-03:196, 03:202-03:215, 03:217-03:220, 03:223, 03:227-03:236	
5	275 bp	1070 bp	*03:05, 03:13:01-03:13:02, 03:17, 03:25, 03:27, 03:35, 03:71, 03:167, 03:178, 03:198	*01:65, 05:86, 07:133, 07:242, 07:330, B*15:96
6⁵	90 bp 215 bp	800 bp	*03:21, 03:142 *03:06	B*15:96
7^{5,6}	110 bp	1070 bp	*03:08, 03:29, 03:31	*06:44, 07:01:01:01-07:01:24, 07:01:26-07:01:39, 07:06-07:07, 07:09, 07:16, 07:18-07:20, 07:22, 07:24, 07:26, 07:28, 07:30, 07:35-07:36, 07:40, 07:44, 07:52-07:53, 07:55N, 07:57-07:60, 07:65, 07:70-07:71, 07:73, 07:77-07:78, 07:81-07:83, 07:86, 07:89, 07:91-07:96:02, 07:98N, 07:103-07:104N, 07:106, 07:108-07:113, 07:115-07:116, 07:118-07:120, 07:122, 07:124, 07:128-07:129, 07:131-07:132, 07:134, 07:140-07:141:02, 07:148, 07:150Q-07:151, 07:153, 07:162, 07:164N-07:166, 07:170, 07:173, 07:176, 07:179-07:180, 07:182, 07:188-07:191N, 07:196-07:197, 07:200-07:201, 07:203-07:207, 07:210, 07:212, 07:214-07:215, 07:219, 07:222-07:224, 07:227N-07:228, 07:230-07:231, 07:235Q-07:237, 07:246-07:250, 07:253-07:257, 07:263, 07:266-07:269, 07:276-07:282, 07:292-07:293, 07:296-07:301, 07:303-07:304, 07:310-07:311, 07:313, 07:317, 07:330-07:332, 07:337, 07:343, 15:02:10, 15:02:17, 18:05

101.611-12 – including *Taq* polymerase, IFU-01
101.611-12u – without *Taq* polymerase, IFU-02

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Lot-specific information

	185 bp		*03:03:01-03:03:24, 03:11:01-03:11:02, 03:13:01-03:13:02, 03:18, 03:20N-03:22Q, 03:30-03:31, 03:39, 03:43:01-03:43:02, 03:49-03:50, 03:52-03:53, 03:55-03:56, 03:58-03:59, 03:61-03:62, 03:66-03:69, 03:75-03:76, 03:79, 03:81, 03:83, 03:85-03:86, 03:88, 03:96-03:97, 03:102-03:103, 03:112, 03:116:01-03:116:02, 03:119-03:120, 03:122, 03:124, 03:126-03:127, 03:132-03:133, 03:141-03:142, 03:144, 03:150-03:152, 03:158, 03:160-03:161, 03:165, 03:167-03:168, 03:171, 03:175-03:177, 03:182, 03:185, 03:187-03:189N, 03:192, 03:195-03:196, 03:202-03:207, 03:214, 03:217, 03:220, 03:223, 03:227-03:231	*01:51, 06:53:01, 07:56:01, 07:60, 07:79, 07:109, B*07:93, B*08:39, B*35:101:02, B*35:195, B*35:211, B*38:27, B*51:76
8	255 bp	1070 bp	*03:09, 03:22Q, 03:42, 03:71, 03:89, 03:116:01-03:116:02, 03:119, 03:139, 03:169Q, 03:199	*05:86, 07:133, 07:242, 07:330, B*56:37
9	240 bp	1070 bp	*03:07, 03:15, 03:45, 03:130, 03:140, 03:163	*02:02:01-02:02:03, 02:02:05-02:02:11, 02:02:13-02:03, 02:04 ^w , 02:05:01-02:11, 02:13, 02:14 ^w , 02:15-02:25Q, 02:26:02-02:26:03, 02:28-02:40, 02:42-02:74, 04:03:01-04:03:02, 04:06, 04:16, 04:80, 04:107, 04:147, 04:160, 05:58:01, 06:03:01, 15:02:01-15:05:08, 15:05:10-15:06:03, 15:08-15:09, 15:10:02-15:13, 15:15-15:19, 15:22, 15:24, 15:26-15:35, 15:37-15:42, 15:44-15:60, 15:62, 15:64-15:84Q
10	250 bp	800 bp	*03:07, 03:10, 03:15, 03:29, 03:45, 03:163	*02:02:01 ^w , 02:02:02:01-02:02:03, 02:02:05-02:03, 02:04 ^w , 02:05:01-02:13, 02:14 ^w , 02:15-02:25Q, 02:26:02-02:26:03, 02:28-02:40, 02:42-02:64, 02:66-02:74, 04:03:01-04:03:02, 04:06, 04:16, 04:80, 04:107, 04:147, 04:160, 05:58:01, 06:03:01, 15:02:01-15:05:08, 15:05:10-15:06:03, 15:08-15:09, 15:10:02-15:13, 15:15-15:19, 15:21-15:22, 15:24, 15:26-15:35, 15:37-15:42, 15:44-15:60, 15:62, 15:64-15:84Q
11	145 bp 415 bp	1070 bp	*03:87 *03:08, 03:29, 03:31	*05:86 *04:112, 05:36, 06:44, 12:08, 12:81

101.611-12 – including *Taq* polymerase, IFU-01
101.611-12u – without *Taq* polymerase, IFU-02

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Lot No.: **64V**

Lot-specific information

Lot No.	Product	Product	Product	Product
12	260 bp	1070 bp	*03:03:12, 03:03:15, 03:11:01, 03:18, 03:39	*01:51, 05:55, 06:53:01, 07:56:01, 07:60, 07:79, 07:109, 12:58, 15:12
	305 bp		*03:04:19, 03:113	*07:10, 07:43, 07:184, 07:196, B*35:01:38, B*35:08:04, B*37:04:02
13 ⁵	80 bp	1070 bp	*03:02:01-03:02:12, 03:15-03:16, 03:33, 03:36, 03:40:01, 03:40:03, 03:42-03:43:01, 03:60, 03:71, 03:84, 03:89, 03:95, 03:108, 03:110, 03:121N, 03:132, 03:139, 03:146, 03:169Q, 03:175, 03:194, 03:197-03:201N, 03:216, 03:221-03:222, 03:224N-03:226	*04:54, 06:02:08, 07:02:32, 07:242, 12:03:20, 14:02:01, 14:02:03-14:16, 14:18-14:24:01, 14:25, 14:27-14:53, 14:56-14:61, 15:77, 16:01:06, B*15:78:03
	140 bp		*03:17, 03:71	*04:37, 06:02:08, 12:03:20, 14:02:01, 14:02:03-14:07N, 14:10-14:16, 14:18-14:27, 14:29-14:53, 14:55-14:61, 16:01:06
14 ⁵	70 bp	1070 bp	*03:02:10, 03:03:21, 03:04:26	*02:26:01, 05:58:02, 06:70, 07:20, 15:23, B*44:85, B*55:30 B*56:37^w
	210 bp		*03:19, 03:102	
15 ⁷	135 bp	1070 bp	*03:02:01-03:02:09, 03:02:11-03:03:20, 03:03:22-03:04:24, 03:04:27-03:11:02, 03:13:01-03:17, 03:19-03:38:02, 03:40:01-03:64:01, 03:65-03:66, 03:67 ^w , 03:68-03:98, 03:100-03:117, 03:119-03:136, 03:138-03:143, 03:146-03:155, 03:157-03:165, 03:167-03:169Q, 03:171, 03:173-03:181, 03:183-03:194, 03:196-03:230, 03:232-03:236	*02:02:13, 06:03:01 ^w , 07:96:01-07:96:02, 15:02:10, 15:02:17, 15:43
16	150 bp	1070 bp	*03:07, 03:10, 03:15, 03:29, 03:45, 03:163, 03:226	*01:14, 02:02:13, 04:01:23, 05:01:12, 05:29:02, 06:02:01:01-06:02:01:03, 06:02:03-06:04, 06:06-06:10, 06:12-06:76:01, 06:77-06:81, 06:83-06:123, 07:07, 07:09, 07:76, 07:315, 07:328, 12:04:01, 14:12, 14:49, 15:02:10, 15:02:17, 17:01:01:01-17:01:03, 17:01:05-17:21, 17:23, 18:01-18:07N, B*15:277, B*35:222
	250 bp		*03:218	
17 ⁵	100 bp	1070 bp	*03:20N, 03:101	
	135 bp		*03:05, 03:25, 03:27, 03:167	
18	165 bp	1070 bp	*03:102	B*15:96, B*56:37
	195 bp		*03:83	
	225 bp		*03:23	
19 ⁵	105 bp	800 bp	*03:24	
	250 bp		*03:33, 03:236	*04:106, 08:78
20	155 bp	1070 bp	*03:25, 03:155	*08:95
	250 bp		*03:47, 03:227	
	455 bp		*03:227	

101.611-12 – including *Taq* polymerase, IFU-01
101.611-12u – without *Taq* polymerase, IFU-02

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Lot No.: **64V**

Lot-specific information

Lot No.	Product	Reference	Alleles	Alleles
21	210 bp 240 bp	1070 bp	*03:26 *03:57, 03:88	
22	195 bp	800 bp	*03:15, 03:27, 03:38:01-03:38:02, 03:69, 03:130, 03:136, 03:163	*02:12, 02:49, 02:55, 04:03:01, 04:06, 04:16, 04:80, 04:107, 04:147, 04:160, 06:70, 07:20, 07:96:01-07:96:02, 07:127, 07:263, 15:03, 15:16, 15:25
23 ⁵	255 bp 90 bp 260 bp	1070 bp	*03:213 *03:28, 03:49, 03:117 *03:22Q, 03:90, 03:103 03:169Q	*01:65, 05:86
24	155 bp 200 bp	1070 bp	*03:120, 03:200, 03:229N *03:30, 03:65, 03:79, 03:121N	
25	260 bp 305 bp	1070 bp	*03:207 *03:32, 03:45, 03:136	*04:80, 04:100, 04:110, 06:14, 07:10, 07:43, 07:196, 15:25, 15:62, B*35:178
	355 bp		*03:38:01-03:38:02, 03:69, 03:130, 03:136, 03:163	*04:80, 04:100, 04:110, 06:14, 07:10, 07:43, 07:196, 12:44, 15:03, 15:16, 15:25
	470 bp		*03:171, 03:211:01-03:211:02	*04:144, 05:03, 05:93, 06:73, 08:20, 08:40, 12:109
26 ⁵	70 bp 105 bp 265 bp	1070 bp	*03:34, 03:142 *03:36, 03:77, 03:187 *03:13:01-03:13:02, 03:35, 03:178, 03:198	*05:86, 07:133, 07:242, 07:330, B*15:96
27 ⁵	80 bp 210 bp 275 bp	1070 bp	*03:11:01-03:11:02, 03:37:01- 03:37:02 *03:208N *03:15, 03:32, 03:45, 03:60, 03:136	*02:42, 06:03:01 *02:49, 04:03:01-04:03:02, 04:06, 04:16, 04:80, 04:147, 04:160, 06:03:01, 07:96:01- 07:96:02, 15:25, 15:62
28	170 bp	1070 bp	*03:16, 03:41, 03:113, 03:151	*04:01:01:01-04:01:04, 04:01:06, 04:01:08, 04:01:10- 04:01:17, 04:01:19-04:01:21, 04:01:23-04:01:25, 04:01:27- 04:01:57, 04:03:01-04:04:01, 04:05-04:20, 04:23-04:49, 04:51-04:63, 04:65-04:76, 04:78-04:94:01, 04:95N- 04:98:02, 04:100-04:119, 04:121-04:155, 04:157-04:159, 04:161-04:165, 06:02:08, 07:02:32, 12:03:20, 14:02:01, 14:02:03-14:02:10, 14:02:12- 14:16, 14:18-14:31, 14:33- 14:43, 14:45-14:61, 15:77, 16:01:06, 18:01-18:07N, B*15:01:17, B*15:78:03
29	140 bp 170 bp 285 bp	1070 bp	*03:98 *03:51, 03:96, 03:161, 03:194 *03:39, 03:67	*04:64:01 *06:53:01, 07:56:01, 07:60, 07:79, 07:109, B*08:39
30	150 bp 170 bp	1070 bp	*03:61 *03:46, 03:96, 03:194	*04:64:01

101.611-12 – including *Taq* polymerase, IFU-01
101.611-12u – without *Taq* polymerase, IFU-02

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Lot-specific information

31⁵	100 bp	800 bp	*03:59, 03:123	
	210 bp		*03:44	
32^{5,8}	555 bp		*03:58, 03:86, 03:94, 03:99, 03:209	*05:85, 15:37, 16:18
	90 bp	1070 bp	*03:58, 03:189N	*01:03, 01:24, 01:78, 04:37, 05:85
	180 bp		*03:48, 03:84	
33⁵	110 bp	1070 bp	*03:62	
	180 bp		*03:224N	
	365 bp		*03:43:01-03:43:02, 03:119, 03:132, 03:175	*07:60, 07:79, 12:58, 14:10, B*35:101:02
34	130 bp	1070 bp	*03:54, 03:98	
	240 bp		*03:53	*12:17
35^{5,7}	70 bp	1070 bp	*03:64:01	*02:08, 12:03:23, 15:10:02-15:10:03
	120 bp		*03:56	
	155 bp		*03:229N	
	210 bp		*03:79, 03:82, 03:85	
36	165 bp	1070 bp	*03:122, 03:219	
	245 bp		*03:50, 03:72	
37	140 bp	1070 bp	*03:16, 03:21, 03:55, 03:80, 03:92, 03:113, 03:117, 03:161	*04:01:01:01-04:01:04, 04:01:08, 04:01:10-04:01:21, 04:01:23-04:01:25, 04:01:27-04:01:57, 04:03:01-04:04:01, 04:05-04:07, 04:09N-04:20, 04:23-04:31, 04:33, 04:35-04:49, 04:51-04:58, 04:60-04:76, 04:78-04:84, 04:86-04:94:01, 04:95N-04:98:02, 04:100-04:146, 04:148-04:159, 04:161-04:165, 06:02:08, 07:02:32, 08:01:07, 08:02:07, 08:33:02, 12:03:20, 14:02:01, 14:02:03-14:02:11, 14:02:13-14:16, 14:18-14:19, 14:21N-14:24:02, 14:26-14:31, 14:33-14:37, 14:39-14:61, 16:01:06, 18:01-18:02, 18:04-18:07N
38^{5,8}	100 bp	1070 bp	*03:52, 03:95	*04:43, 04:143
	155 bp		*03:145	
	265 bp		*03:73	
39⁵	110 bp	1070 bp	*03:36, 03:77, 03:187	*04:34, 04:122, 14:53
	165 bp		*03:63, 03:145	
40⁵	70 bp	1070 bp	*03:80	B*08:115
	260 bp		*03:66	
41^{5,6}	120 bp	1070 bp	*03:68	
	185 bp		*03:100, 03:146	*06:02:03, 06:46N, 08:01:09, 08:24, 17:01:01:01-17:01:01:03, 17:02-17:03, 17:05
42⁵	295 bp		*03:205	*04:161 ^w
	120 bp	1070 bp	*03:78	
	165 bp		*03:201N	
	205 bp		*03:70, 03:127, 03:179	B*55:30

101.611-12 – including *Taq* polymerase, IFU-01
101.611-12u – without *Taq* polymerase, IFU-02

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Lot-specific information

Lot No.: 64V		Lot-specific information		
43⁷	220 bp 275 bp	800 bp	*03:74, 03:81, 03:175, 03:199, 03:223 *03:97	B*15:96, B*56:37
44⁵	70 bp 160 bp	1070 bp	*03:91 *03:75, 03:120, 03:229N	
45	150 bp 295 bp	1070 bp	*03:93, 03:206, 03:212 *03:76	*04:84, 07:167
46	150 bp 210 bp	1070 bp	*03:155 *03:58, 03:86, 03:94, 03:99	*08:95 *01:02:01-01:03, 01:06-01:08, 01:10-01:11, 01:13-01:20, 01:23-01:33, 01:38-01:48, 01:51-01:54, 01:56N-01:76, 01:78, 01:80-01:90, 04:37, 05:85, 14:45
47⁵	70 bp 195 bp 240 bp	1070 bp	*03:14, 03:21, 03:55, 03:92, 03:117, 03:161 *03:109 *03:57	*01:65, 05:86, 07:133, 07:330
48⁹			Negative Control	

¹Alleles are assigned by the presence of specific PCR product(s). However, the sizes of the specific PCR products may be helpful in the interpretation of HLA-C*03 SSP typings.

When the primers in a primer mix can give rise to HLA-specific PCR products of more than one length this is indicated if the size difference is more than 20 base pairs. Size differences of 20 base pairs or less are not given. For high resolution SSP kits, the alleles listed are specified according to amplicon length.

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

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

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

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

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

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

⁴Due to the sharing of sequence motifs between HLA-C alleles, non-HLA-C*03 alleles will be amplified by primer mixes 1 to 3, 5, 7 to 16, 19, 20, 22, 23, 25 to 35, 37 to 39, 41 and 45 to 47. In addition, a few HLA-B alleles will be amplified by primer mixes 1, 2, 5 to 8, 12 to 14, 16, 18, 25, 26, 28, 29, 33, 40, 42 and 43.

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

⁶Primer mix 7 and 41 may give rise to a lower yield of HLA-specific PCR product than the other HLA-C*03 primer mixes.

⁷Primer mixes 15, 35 and 43 have a tendency to giving rise to primer oligomer formation.

101.611-12 – including *Taq* polymerase, IFU-01
101.611-12u – without *Taq* polymerase, IFU-02

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Lot-specific information

⁸Primer mixes 32 and 38 may have tendencies of unspecific amplifications.

⁹Primer mix 48 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.

101.611-12 – including *Taq* polymerase, IFU-01
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Lot-specific information

PRIMER SPECIFICATION

Well No.	1	2	3	4	5	6	7	8	9	10	11	12
Length of spec. PCR product	280	210	280	275	275	90	110	255	240	250	145	260
						215	185				415	305
Length of int. pos. control ¹	800	1070	800	1070	1070	800	1070	1070	1070	800	1070	1070
5'-primer(s) ²	105	419	105	355	355	413	201	374	105	105	28	126
	5'-gCT 3'	5'-gTC 3'	5'-gCT 3'	5'-TCA 3'	5'-CCC 3'	5'-TgT 3'	5'-CCg 3'	5'-CTA 3'	5'-gCT 3'	5'-gCT 3'	5'-TCA 3'	5'-ggA 3'
						539		379			485	355
						5'-TgT 3'		5'-ACC 3'			5'-CAA 3'	5'-TCA 3'
								379				
								5'-ACT 3'				
3'-primer(s) ³	343	589	343	589	589	589	270	589	302	312	270	343
	5'-C 3'	5'-CTT 3'	5'-T 3'	5'-CTT 3'	5'-CTT 3'	5'-CTT 3'	5'-TAg 3'	5'-CTT 3'	5'-ggT 3'	5'-AgT 3'	5'-TAg 3'	5'-T 3'
				589			343				589	618
				5'-CTT 3'			5'-T 3'				5'-CTT 3'	5'-CT 3'
Well No.	1	2	3	4	5	6	7	8	9	10	11	12

Well No.	13	14	15	16	17	18	19	20	21	22	23	24
Length of spec. PCR product	80	70	135	150	100	165	105	155	210	195	90	155
	140	210		250	135	195	250	250	240	255	260	200
						225		455				
Length of int. pos. control ¹	1070	1070	1070	1070	1070	1070	800	1070	1070	800	1070	1070
5'-primer(s) ²	361	105	105	201	19	406	105	19	391	134	368	355
	5'-AgT 3'	5'-gCC 3'	5'-gCT 3'	5'-CCg 3'	5'-CCT 3'	5'-gCA 3'	5'-gCT 3'	5'-CCg 3'	5'-ACA 3'	5'-CCA 3'	5'-gTC 3'	5'-TCA 3'
	419	420		637	363	436	3 rd I	86	395	134	374	355
	5'-gTC 3'	5'-TTA 3'		5'-ACT 3'	5'-AgC 3'	5'-AgA 3'	5'-Cgg 3'	5'-CAA 3'	5'-gCA 3'	5'-CCA 3'	5'-CTA 3'	5'-TCC 3'
				730	3 rd I	463		194	420	3 rd I	539	
				5'-ggA 3'	5'-Cgg 3'	5'-TgA 3'		5'-CgT 3'	5'-TTC 3'	5'-Cgg 3'	5'-gCg 3'	
								467				
								5'-CTT 3'				
3'-primer(s) ³	459	134	201	312	70	589	167	97	589	289	589	470
	5'-AgA 3'	5'-AgT 3'	5'-CTC 3'	5'-AgT 3'	5'-ggC 3'	5'-CTT 3'	5'-ACC 3'	5'-gTA 3'	5'-CTT 3'	5'-AgC 3'	5'-CTT 3'	5'-TCT 3'
		589		846	459		323	302		289		473
		5'-CTT 3'		5'-CAC 3'	5'-AgA 3'		5'-AgC 3'	5'-ggC 3'		5'-AgC 3'		5'-CgA 3'
					662		787	589		806		513
					5'-CAC 3'		5'-TCT 3'	5'-CTT 3'		5'-CTA 3'		5'-TCT 3'
												514
												5'-CTT 3'
												515
												5'-CCC 3'
Well No.	13	14	15	16	17	18	19	20	21	22	23	24

101.611-12 – including *Taq* polymerase, IFU-01
101.611-12u – without *Taq* polymerase, IFU-02

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Lot No.: **64V**

Lot-specific information

Well No.	25	26	27	28	29	30	31	32	33	34	35	36
Length of spec.	260	70	80	170	140	150	100	90	110	130	70	165
PCR product	305	105	210		170	175	210	180	180	240	120	245
	355	265	275		285		555				155	
	470										210	
Length of int. pos. control ¹	1070	1070	1070	1070	1070	1070	800	1070	1070	1070	1070	1070
5'-primer(s) ²	289	363	105	459	97	105	98	105	343	98	105	133
	5'-Agg 3'	5'-Agg 3'	5'-gCT 3'	5'-gAT 3'	5'-TCg 3'	5'-gCT 3'	5'-CTA 3'	5'-gCT 3'	5'-CCA 3'	5'-CTA 3'	5'-gCT 3'	5'-CCT 3'
	341	527			459	459	421	368	3 rd I	459	355	394
	5'-ggA 3'	5'-TgT 3'			5'-gAT 3'	5'-gAT 3'	5'-ACC 3'	5'-gTg 3'	5'-Cgg 3'	5'-gAT 3'	5'-TCA 3'	5'-ggg 3'
	652	560					530					464
	5'-CCA 3'	5'-CgA 3'					5'-ggT 3'					5'-gCC 3'
	652											3 rd I
	5'-CCA 3'											5'-Cgg 3'
	863											
	5'-Cgg 3'											
3'-primer(s) ³	353	589	142	589	343	231	361	153	419	295	134	343
	5'-TgA 3'	5'-CTT 3'	5'-TgA 3'	5'-CTC 3'	5'-T 3'	5'-..C 3'	5'-CCA 3'	5'-ACC 3'	5'-Cgg 3'	5'-TCC 3'	5'-AgC 3'	5'-T 3'
	956		273		559	566	589	242	662	544	276	589
	5'-CAg 3'		5'-TTT 3'		5'-Cgg 3'	5'-CCT 3'	5'-CTT 3'	5'-CCA 3'	5'-CAg 3'	5'-ggg 3'	5'-Cgg 3'	5'-CTT 3'
			341		583	595		242	728	559	282	719
			5'-CgT 3'		5'-gTg 3'	5'-CCT 3'		5'-CCT 3'	5'-CCT 3'	5'-Cgg 3'	5'-gAC 3'	5'-AgA 3'
					595			419			434	
					5'-CCT 3'			5'-CgA 3'			5'-CCA 3'	
											470	
											5'-TCT 3'	
											515	
											5'-CCC 3'	
Well No.	25	26	27	28	29	30	31	32	33	34	35	36

Well No.	37	38	39	40	41	42	43	44	45	46	47
Length of spec.	140	100	110	70	120	120	220	70	150	150	70
PCR product		155	165	260	185	165	275	160	295	210	195
		265			295	205					240
Length of int. pos. control ¹	1070	1070	1070	1070	1070	1070	800	1070	1070	1070	1070
5'-primer(s) ²	459	105	105	28	265	134	116	355	91	194	391
	5'-gAT 3'	5'-gCT 3'	5'-gCT 3'	5'-TCA 3'	5'-CgA 3'	5'-CCA 3'	5'-gCT 3'	5'-TCA 3'	5'-ggC 3'	5'-CgT 3'	5'-ACA 3'
		459	459	560	3 rd I	459	355		490	368	434
		5'-gAT 3'	5'-gAT 3'	5'-CAC 3'	5'-Cgg 3'	5'-gAT 3'	5'-TCT 3'		5'-CgA 3'	5'-gTg 3'	5'-CAg 3'
							409		3 rd I		560
							5'-ggC 3'		5'-Cgg 3'		5'-CAC 3'
3'-primer(s) ³	559	221	221	118	343	299	302	382	343	302	589
	5'-CgT 3'	5'-ACA 3'	5'-ACA 3'	5'-gCA 3'	5'-T 3'	5'-TCT 3'	5'-ggC 3'	5'-CCT 3'	5'-T 3'	5'-ggC 3'	5'-CTT 3'
		328	233	589	727	538	589	470	589	538	
		5'-gTC 3'	5'-CCA 3'	5'-CTT 3'	5'-CCg 3'	5'-CAT 3'	5'-CTT 3'	5'-TCT 3'	5'-CTT 3'	5'-CCg 3'	
		518	527		746	585		473	704		
		5'-CCA 3'	5'-CCA 3'		5'-gAA 3'	5'-AgC 3'		5'-CgA 3'	5'-CCA 3'		
		523			845			476			
		5'-ACA 3'			5'-ACT 3'			5'-CgA 3'			
Well No.	37	38	39	40	41	42	43	44	45	46	47

101.611-12 – including *Taq* polymerase, IFU-01
101.611-12u – without *Taq* polymerase, IFU-02

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Lot No.: 64V

Lot-specific information

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

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

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

101.611-12 – including *Taq* polymerase, IFU-01
101.611-12u – without *Taq* polymerase, IFU-02

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Lot No.: **64V**

Lot-specific information

CELL LINE VALIDATION SHEET																				
HLA-C*03 SSP subtyping kit²																				
				Well																
				1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	
				Prod. No.:	201299401	201299402	201299403	201299404	201299405	201299406	201299407	201314308	201299409	201299410	201299411	201299412	201299413	201314314	201299415	201434016
IHW cell line ¹		C*																		
1	9001 SA	*07:02		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
2	9280 LK707	*07:01	*15:05	+	-	-	-	-	-	-	+	-	+	+	-	-	-	-	-	-
3	9011 E4181324	*12:02		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
4	9275 GU373	*03:04	*04:01	+	-	-	+	-	-	-	-	-	-	-	-	-	-	-	+	-
5	9009 KAS011	*06:02		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	+
6	9353 SM	*03:04	*07:02	+	-	-	+	-	-	-	-	-	-	-	-	-	-	-	+	-
7	9020 QBL	*05:01		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
8	9025 DEU	*04:01		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
9	9026 YAR	*12:03		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
10	9107 LKT3	*01:02		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
11	9051 PITOUT	*16:01		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
12	9052 DBB	*06:02		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	+
13	9004 JESTHOM	*01:02		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
14	9071 OLGA	*01:02	*03:04	+	-	-	+	-	-	-	-	-	-	-	-	-	-	-	+	-
15	9075 DKB	*03:04		+	-	-	+	-	-	-	-	-	-	-	-	-	-	-	+	-
16	9037 SWEIG007	*02:02		+	-	-	-	-	-	-	-	-	+	+	-	-	-	-	-	-
17	9282 CTM3953540	*03:03	*07:01	-	-	+	+	-	-	-	+	-	-	-	-	-	-	-	+	-
18	9257 32367	*01:02	*07:05	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
19	9038 BM16	*07:01		-	-	-	-	-	-	-	+	-	-	-	-	-	-	-	-	-
20	9059 SLE005	*03:04		+	-	-	+	-	-	-	-	-	-	-	-	-	-	-	+	-
21	9064 AMALA	*03:03		-	-	+	+	-	-	-	+	-	-	-	-	-	-	-	+	-
22	9056 KOSE	*12:03		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
23	9124 IHL	*01:02	*15:02	+	-	-	-	-	-	-	-	-	+	+	-	-	-	-	-	-
24	9035 JBUSH	*12:03		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
25	9049 IBW9	*08:02		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
26	9285 WT49	*07:01		-	-	-	-	-	-	-	+	-	-	-	-	-	-	-	-	-
27	9191 CH1007	*07:04	*15:05	+	-	-	-	-	-	-	-	-	+	+	-	-	-	-	-	-
28	9320 BEL5GB	*05:01	*16:01	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
29	9050 MOU	*16:01		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
30	9021 RSH	*17:01		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	+
31	9019 DUCAF	*05:01		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
32	9297 HAG	*17:01	*17:03	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	+
33	9098 MT14B	*03:04		+	-	-	+	-	-	-	-	-	-	-	-	-	-	-	+	-
34	9104 DHIF	*12:03		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
35	9302 SSTO	*05:01		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
36	9024 KT17	*03:03	*04:01	-	-	+	+	-	-	-	+	-	-	-	-	-	-	-	+	-
37	9065 HHKB	*07:02		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
38	9099 LZL	*03:03		-	-	+	+	-	-	-	+	-	-	-	-	-	-	-	+	-
39	9315 CML	*02:02	*07:01	+	-	-	-	-	-	-	+	-	+	+	-	-	-	-	-	-
40	9134 WHONP199	*01:02	*06:02	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	+
41	9055 H0301	*08:02		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
42	9066 TAB089	*01:02		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
43	9076 T7526	*01:02	*08:01	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
44	9057 TEM	*12:03		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
45	9239 SHJO	*06:02	*17:01	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	+
46	9013 SCHU	*07:02		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
47	9045 TUBO	*07:04	*15:02	+	-	-	-	-	-	-	-	-	+	+	-	-	-	-	-	-
48	9303 TER-ND	*04:01	*16:01	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

101.611-12 – including *Taq* polymerase, IFU-01
101.611-12u – without *Taq* polymerase, IFU-02

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Lot No.: **64V**

Lot-specific information

CELL LINE VALIDATION SHEET																				
HLA-C*03 SSP subtyping kit²																				
				Well																
				17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	
				Prod. No.:	201434017	201434018	201434019	201434020	201299421	201434022	201299423	201434024	201434025	201299426	201434027	201299428	201299429	201299430	201434031	201434032
IHC cell line ¹		C*																		
1	9001 SA	*07:02		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
2	9280 LK707	*07:01	*15:05	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
3	9011 E4181324	*12:02		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
4	9275 GU373	*03:04	*04:01	-	-	-	-	-	-	-	-	-	-	-	-	+	-	-	-	-
5	9009 KAS011	*06:02		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
6	9353 SM	*03:04	*07:02	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
7	9020 QBL	*05:01		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
8	9025 DEU	*04:01		-	-	-	-	-	-	-	-	-	-	-	-	+	-	-	-	-
9	9026 YAR	*12:03		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
10	9107 LKT3	*01:02		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
11	9051 PITOUT	*16:01		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
12	9052 DBB	*06:02		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
13	9004 JESTHOM	*01:02		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
14	9071 OLGA	*01:02	*03:04	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
15	9075 DKB	*03:04		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
16	9037 SWEIG007	*02:02		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
17	9282 CTM3953540	*03:03	*07:01	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
18	9257 32367	*01:02	*07:05	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
19	9038 BM16	*07:01		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
20	9059 SLE005	*03:04		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
21	9064 AMALA	*03:03		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
22	9056 KOSE	*12:03		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
23	9124 IHL	*01:02	*15:02	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
24	9035 JBUSH	*12:03		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
25	9049 IBW9	*08:02		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
26	9285 WT49	*07:01		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
27	9191 CH1007	*07:04	*15:05	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
28	9320 BEL5GB	*05:01	*16:01	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
29	9050 MOU	*16:01		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
30	9021 RSH	*17:01		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
31	9019 DUCAF	*05:01		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
32	9297 HAG	*17:01	*17:03	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
33	9098 MT14B	*03:04		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
34	9104 DHIF	*12:03		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
35	9302 SSTO	*05:01		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
36	9024 KT17	*03:03	*04:01	-	-	-	-	-	-	-	-	-	-	-	-	+	-	-	-	-
37	9065 HHKB	*07:02		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
38	9099 LZL	*03:03		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
39	9315 CML	*02:02	*07:01	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
40	9134 WHONP199	*01:02	*06:02	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
41	9055 H0301	*08:02		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
42	9066 TAB089	*01:02		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
43	9076 T7526	*01:02	*08:01	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
44	9057 TEM	*12:03		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
45	9239 SHJO	*06:02	*17:01	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
46	9013 SCHU	*07:02		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
47	9045 TUBO	*07:04	*15:02	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
48	9303 TER-ND	*04:01	*16:01	-	-	-	-	-	-	-	-	-	-	-	-	+	-	-	-	-

101.611-12 – including *Taq* polymerase, IFU-01
101.611-12u – without *Taq* polymerase, IFU-02

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Lot No.: **64V**

Lot-specific information

CELL LINE VALIDATION SHEET																			
HLA-C*03 SSP subtyping kit ²																			
			Prod. No.:	Well															
				33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	
	IHWC cell line ¹	C*		201434033	201299434	201434035	201434036	201299437	201434038	201434039	201299440	201434041	201434042	201434043	201434044	201434045	201314346	201299447	
1	9001 SA	*07:02		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
2	9280 LK707	*07:01	*15:05	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
3	9011 E4181324	*12:02		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
4	9275 GU373	*03:04	*04:01	-	-	-	-	+	-	-	-	-	-	-	-	-	-	-	
5	9009 KAS011	*06:02		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
6	9353 SM	*03:04	*07:02	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
7	9020 QBL	*05:01		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
8	9025 DEU	*04:01		-	-	-	-	+	-	-	-	-	-	-	-	-	-	-	
9	9026 YAR	*12:03		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
10	9107 LKT3	*01:02		-	-	-	-	-	-	-	-	-	-	-	-	-	+	-	
11	9051 PITOUT	*16:01		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
12	9052 DBB	*06:02		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
13	9004 JESTHOM	*01:02		-	-	-	-	-	-	-	-	-	-	-	-	-	+	-	
14	9071 OLGA	*01:02	*03:04	-	-	-	-	-	-	-	-	-	-	-	-	-	+	-	
15	9075 DKB	*03:04		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
16	9037 SWEIG007	*02:02		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
17	9282 CTM3953540	*03:03	*07:01	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
18	9257 32367	*01:02	*07:05	-	-	-	-	-	-	-	-	-	-	-	-	-	+	-	
19	9038 BM16	*07:01		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
20	9059 SLE005	*03:04		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
21	9064 AMALA	*03:03		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
22	9056 KOSE	*12:03		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
23	9124 IHL	*01:02	*15:02	-	-	-	-	-	-	-	-	-	-	-	-	-	+	-	
24	9035 JBUSH	*12:03		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
25	9049 IBW9	*08:02		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
26	9285 WT49	*07:01		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
27	9191 CH1007	*07:04	*15:05	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
28	9320 BEL5GB	*05:01	*16:01	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
29	9050 MOU	*16:01		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
30	9021 RSH	*17:01		-	-	-	-	-	-	-	-	+	-	-	-	-	-	-	
31	9019 DUCAF	*05:01		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
32	9297 HAG	*17:01	*17:03	-	-	-	-	-	-	-	-	+	-	-	-	-	-	-	
33	9098 MT14B	*03:04		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
34	9104 DHIF	*12:03		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
35	9302 SSTO	*05:01		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
36	9024 KT17	*03:03	*04:01	-	-	-	-	+	-	-	-	-	-	-	-	-	-	-	
37	9065 HHKB	*07:02		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
38	9099 LZL	*03:03		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
39	9315 CML	*02:02	*07:01	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
40	9134 WHONP199	*01:02	*06:02	-	-	-	-	-	-	-	-	-	-	-	-	-	+	-	
41	9055 H0301	*08:02		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
42	9066 TAB089	*01:02		-	-	-	-	-	-	-	-	-	-	-	-	-	+	-	
43	9076 T7526	*01:02	*08:01	-	-	-	-	-	-	-	-	-	-	-	-	-	+	-	
44	9057 TEM	*12:03		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
45	9239 SHJO	*06:02	*17:01	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
46	9013 SCHU	*07:02		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
47	9045 TUBO	*07:04	*15:02	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
48	9303 TER-ND	*04:01	*16:01	-	-	-	-	+	-	-	-	-	-	-	-	-	-	-	

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



101.611-12 – including *Taq* polymerase, IFU-01
101.611-12u – without *Taq* polymerase, IFU-02

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Lot No.: 64V

Lot-specific information

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

No DNAs carrying the alleles to be amplified by primer solutions 8, 11, 17 to 21, 23 to 26, 29, 31 to 36, 38 to 40, 42 to 45 and 47 were available. The specificities of the primers in primer solutions 8, 11, 17 to 19, 21, 23, 25, 26, 29, 31 to 33, 35, 36, 39, 42, 43, 45 and 47 were tested by separately adding one additional 5'-primer, respectively one additional 3'-primer. In primer solution 20 it was only possible to test the 3'-primers, the 5'-primers were not possible to test. In primer solutions 24, 34, 38, 40 and 44 it was only possible to test the 5'-primer, the 3'-primer was not possible to test. In primer solutions 8, 16 to 18, 21, 23, 25, 31, 36, 41, 43 and 45 to 47 it was not possible to test one, two or three of the 5'-primers and in primer solutions 17, 19, 22, 27, 29, 30, 32, 33, 35, 36, 39, 41, 42 and 45 one, two or three 3'-primers were not possible to test. Additional primers in primer solutions 6, 12, 14, 16, 22, 30, 41 and 46 were tested by separately adding an additional 5'- or 3'-primer.

101.611-12 – including *Taq* polymerase, IFU-01
101.611-12u – without *Taq* polymerase, IFU-02

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101.611-12u – without *Taq* polymerase, IFU-02

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Lot No.: **64V**

Lot-specific information

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