

101.115-24/03 – including *Taq* polymerase, IFU-01
101.115-24u/03u – without *Taq* polymerase, IFU-02

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

Lot No.: **38X**

Lot-specific information
Olerup SSP® DRB1*11

Product number:	101.115-24/03 – including <i>Taq</i> pol. 101.115-24u/03u – without <i>Taq</i> pol.
Lot number:	38X
Expiry date:	2017-July-01
Number of tests:	24 tests – Product No. 101.115-24/24u 3 tests – Product No. 101.115-03/03u
Number of wells per test:	46+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. 38X.

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

**CHANGES COMPARED TO THE PREVIOUS OLERUP SSP®
DRB1*11 LOT (85S)**

The DRB1*11 kit is updated to enable separation of:

- Confirmed DRB1*11 alleles as listed in the IMGT/HLA database¹
- 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.

Four wells have been added to the DRB1*11 kit, wells **44 to 47**.

¹As described in section Uniquely Identified Alleles.

The DRB1*11 primer set, specificity and interpretation tables have been updated for the DRB1 alleles described since the previous *Olerup SSP®* DRB1*11 lot was made (**Lot No. 85S**). The kit design is based on IMGT/HLA database 3.17.0.

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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, added or modified compared to the previous lot.

Well	5'-primer	3'-primer	rationale
3	-	Added	3'-primer added for the DRB1*11:01:19 allele.
9	Moved	Moved	Primer pair moved to well 45 for decreased tendency of primer oligomer formation.
13	Moved	Moved	Primer pair moved to well 46 for decreased tendency of primer oligomer formation.
25	-	-	Exchanged positive control primer pair.
30	-	Added	3'-primer added for the DRB1*11:01:19 allele.
36	-	Added	3'-primer added for the DRB1*11:128 allele.
42	Added	-	5'-primer added for the DRB1*11:104 allele.
44	New	New	New primer pair for the DRB1*11:111 allele.
45	Added	Added	Primer pair added from well 9.
46	Added	Added	Primer pair added from well 13.
47	-	-	Negative Control.

Change in revision R01 compared to R00:

1. Primer mix 5 amplifies the DRB1*11:73, 11:79, 11:93, 11:131, 11:132 and 11:153 and the DRB1*04:145 alleles. This has been corrected in the Specificity and Interpretation tables.

Change in revision R02 compared to R01:

1. Primer mix 44 may have tendencies of unspecific amplifications. A footnote has been added in the Specificity Table.

Change in revision R03 compared to R02:

1. Primer mix 15 does not amplify the DRB1*11:66 allele. This has been corrected in the Interpretation and Specificity Tables. Thus, this lot of the DRB1*11 subtyping kit cannot distinguish the DRB1*11:01:01-11:01:11 and 11:01:13-11:01:24 alleles and the DRB1*11:66 allele.

Change in revision R04 compared to R03:

1. Primer mix 12 does not amplify the DRB1*11:61 allele. This has been corrected in the Interpretation and Specificity Tables. Thus, this lot of the DRB1*11 subtyping kit cannot distinguish the DRB1*11:01:01-11:01:11 and 11:01:13-11:01:24 alleles and the DRB1*11:61 allele.

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Well **47** contains Negative Control primer pairs, that will amplify more than 95% of the *Olerup SSP*® HLA Class I, DRB, DQB1, DPB1 and DQA1 amplicons as well as all the amplicons generated by the control primer pairs matching the human growth hormone gene.

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

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

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

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

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Lot-specific information

PRODUCT DESCRIPTION

DRB1*11 SSP subtyping

CONTENT

The primer set contains 5'- and 3'-primers for identifying the DRB1*11:01 to DRB1*11:167 alleles.

PLATE LAYOUT

Each test consists of 47 PCR reactions in a 48 well cut PCR plate. Well 48 is 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	NC	empty

The 48 well cut PCR plate is marked with 'DRB1*11', in silver/gray ink.

Well No. 1 is marked with the Lot No. '38X'.

Wells 1 to 46 – DRB1*11 high resolution primers.

Well 47 – 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 DRB1 alleles, non-DRB1*11 alleles will be amplified by primer mixes 1 to 11, 13 to 22, 24 to 34, 36, 40, 41 and 43. In addition, a few DRB3 and DRB5 alleles will be amplified by primer mixes 3, 5, 7, 12, 14, 16, 18, 25, 29, 40 and 41.

For further details see Specificity Table.

UNIQUELY IDENTIFIED ALLELES

All the phenotypically different DRB1*11 alleles, i.e. **DRB1*11:01 to DRB1*11:167**, recognized by the HLA Nomenclature Committee in July 2014^{1,2} will be amplified by the primers in the DRB1*11 subtyping kit³.

The DRB1*11 kit enables separation of the confirmed DRB1*11 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 DRB1*11 alleles is listed below.

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The DRB1*11 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 DRB1*11 alleles can be distinguished by the different sizes of the HLA-specific PCR product:

Alleles	Primer mix
DRB1*11:24, 11:91	16
DRB1*11:99, 11:128	36

The DRB1*11 subtyping kit cannot distinguish the silent mutations in the DRB1*11:01:01-11:01:11 and 11:01:13-11:01:24, the DRB1*11:02:01-11:02:02, the DRB1*11:04:01-11:04:03 and 11:04:05-11:04:11, the DRB1*11:06:01-11:06:03, the DRB1*11:08:01-11:08:03, the DRB1*11:10:01-11:10:02, the DRB1*11:11:01-11:11:03, the DRB1*11:13:01-11:13:02, the DRB1*11:14:01-11:14:02, the DRB1*11:19:01-11:19:03, the DRB1*11:23:01-11:23:02, the DRB1*11:27:01-11:27:03, the DRB1*11:28:01-11:28:02, the DRB1*11:37:01-11:37:02, the DRB1*11:49:01-11:49:02, the DRB1*11:54:01-11:54:02, the DRB1*11:58:01-11:58:02, the DRB1*11:65:01-11:65:02, the DRB1*11:74:01-11:74:02, the DRB1*11:84:01-11:84:03 or the DRB1*11:102:01-11:102:02 alleles.

¹DRB1 alleles listed on the IMGT/HLA web page 2014-July-25, release 3.17.0, 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>.

³This lot of the DRB1*11 subtyping kit cannot distinguish the DRB1*11:01:01-11:01:11 and 11:01:13-11:01:24 alleles and the DRB1*11:66 allele, or the DRB1*11:01:01-11:01:11 and 11:01:13-11:01:24 alleles and the DRB1*11:61 allele.

RESOLUTION IN HOMO- AND HETEROZYGOTES

Results file with resolution in DRB1*11 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
DRB1*11:01:01	Confirmed	DRB1*11:11:02	Unconfirmed	DRB1*11:49:01	Confirmed	DRB1*11:91	Unconfirmed
DRB1*11:01:02	Confirmed	DRB1*11:11:03	Unconfirmed	DRB1*11:49:02	Unconfirmed	DRB1*11:92	Unconfirmed
DRB1*11:01:03	Confirmed	DRB1*11:12:01	Confirmed	DRB1*11:50	Unconfirmed	DRB1*11:93	Confirmed
DRB1*11:01:04	Unconfirmed	DRB1*11:12:02	Unconfirmed	DRB1*11:51	Confirmed	DRB1*11:94	Confirmed
DRB1*11:01:05	Confirmed	DRB1*11:13:01	Confirmed	DRB1*11:52	Confirmed	DRB1*11:95	Unconfirmed
DRB1*11:01:06	Unconfirmed	DRB1*11:13:02	Confirmed	DRB1*11:53	Unconfirmed	DRB1*11:96	Confirmed
DRB1*11:01:07	Confirmed	DRB1*11:14:01	Confirmed	DRB1*11:54:01	Unconfirmed	DRB1*11:97	Unconfirmed
DRB1*11:01:08	Unconfirmed	DRB1*11:14:02	Confirmed	DRB1*11:54:02	Unconfirmed	DRB1*11:98	Confirmed
DRB1*11:01:09	Confirmed	DRB1*11:15	Confirmed	DRB1*11:55	Unconfirmed	DRB1*11:99	Confirmed
DRB1*11:01:10	Confirmed	DRB1*11:16	Confirmed	DRB1*11:56	Unconfirmed	DRB1*11:100	Unconfirmed
DRB1*11:01:11	Confirmed	DRB1*11:17	Confirmed	DRB1*11:57	Confirmed	DRB1*11:101	Confirmed
DRB1*11:01:12	Confirmed	DRB1*11:18	Confirmed	DRB1*11:58:01	Confirmed	DRB1*11:102:01	Confirmed
DRB1*11:01:13	Confirmed	DRB1*11:19:01	Confirmed	DRB1*11:58:02	Confirmed	DRB1*11:102:02	Confirmed
DRB1*11:01:14	Unconfirmed	DRB1*11:19:02	Unconfirmed	DRB1*11:59	Unconfirmed	DRB1*11:103	Confirmed
DRB1*11:01:15	Confirmed	DRB1*11:19:03	Unconfirmed	DRB1*11:60	Unconfirmed	DRB1*11:104	Confirmed
DRB1*11:01:16	Confirmed	DRB1*11:20	Confirmed	DRB1*11:61	Unconfirmed	DRB1*11:105	Confirmed
DRB1*11:01:17	Unconfirmed	DRB1*11:21	Confirmed	DRB1*11:62:01	Unconfirmed	DRB1*11:106	Confirmed
DRB1*11:01:18	Confirmed	DRB1*11:22	Unconfirmed	DRB1*11:62:02	Unconfirmed	DRB1*11:107	Unconfirmed
DRB1*11:01:19	Unconfirmed	DRB1*11:23:01	Confirmed	DRB1*11:63:01	Unconfirmed	DRB1*11:108	Confirmed
DRB1*11:01:20	Unconfirmed	DRB1*11:23:02	Confirmed	DRB1*11:63:02	Unconfirmed	DRB1*11:109	Unconfirmed
DRB1*11:01:21	Unconfirmed	DRB1*11:24	Confirmed	DRB1*11:64	Unconfirmed	DRB1*11:110	Unconfirmed
DRB1*11:01:22	Unconfirmed	DRB1*11:25	Confirmed	DRB1*11:65:01	Confirmed	DRB1*11:111	Confirmed
DRB1*11:01:23	Unconfirmed	DRB1*11:26	Unconfirmed	DRB1*11:65:02	Unconfirmed	DRB1*11:112	Unconfirmed
DRB1*11:01:24	Unconfirmed	DRB1*11:27:01	Confirmed	DRB1*11:66	Confirmed	DRB1*11:113	Confirmed
DRB1*11:02:01	Confirmed	DRB1*11:27:02	Confirmed	DRB1*11:67	Unconfirmed	DRB1*11:114	Unconfirmed
DRB1*11:02:02	Confirmed	DRB1*11:27:03	Confirmed	DRB1*11:68	Unconfirmed	DRB1*11:115	Unconfirmed
DRB1*11:03	Confirmed	DRB1*11:28:01	Confirmed	DRB1*11:69	Confirmed	DRB1*11:116	Confirmed
DRB1*11:04:01	Confirmed	DRB1*11:28:02	Confirmed	DRB1*11:70	Unconfirmed	DRB1*11:117	Unconfirmed
DRB1*11:04:02	Confirmed	DRB1*11:29	Confirmed	DRB1*11:72	Confirmed	DRB1*11:118	Unconfirmed
DRB1*11:04:03	Unconfirmed	DRB1*11:30	Unconfirmed	DRB1*11:73	Unconfirmed	DRB1*11:119	Unconfirmed
DRB1*11:04:04	Unconfirmed	DRB1*11:31	Unconfirmed	DRB1*11:74:01	Confirmed	DRB1*11:120	Confirmed
DRB1*11:04:05	Confirmed	DRB1*11:32	Confirmed	DRB1*11:74:02	Unconfirmed	DRB1*11:121	Unconfirmed
DRB1*11:04:06	Unconfirmed	DRB1*11:33	Confirmed	DRB1*11:75	Confirmed	DRB1*11:122	Unconfirmed
DRB1*11:04:07	Unconfirmed	DRB1*11:34	Confirmed	DRB1*11:76	Confirmed	DRB1*11:123	Unconfirmed
DRB1*11:04:08	Unconfirmed	DRB1*11:35	Confirmed	DRB1*11:77	Unconfirmed	DRB1*11:124	Unconfirmed
DRB1*11:04:09	Unconfirmed	DRB1*11:36	Confirmed	DRB1*11:78	Confirmed	DRB1*11:125	Confirmed
DRB1*11:04:10	Unconfirmed	DRB1*11:37:01	Confirmed	DRB1*11:79	Unconfirmed	DRB1*11:126	Unconfirmed
DRB1*11:04:11	Confirmed	DRB1*11:37:02	Confirmed	DRB1*11:80	Unconfirmed	DRB1*11:127	Unconfirmed
DRB1*11:05	Confirmed	DRB1*11:38	Unconfirmed	DRB1*11:81	Confirmed	DRB1*11:128	Confirmed
DRB1*11:06:01	Confirmed	DRB1*11:39	Confirmed	DRB1*11:82	Unconfirmed	DRB1*11:129	Unconfirmed
DRB1*11:06:02	Confirmed	DRB1*11:40	Unconfirmed	DRB1*11:83	Confirmed	DRB1*11:130	Unconfirmed
DRB1*11:06:03	Confirmed	DRB1*11:41	Confirmed	DRB1*11:84:01	Confirmed	DRB1*11:131	Unconfirmed
DRB1*11:07	Confirmed	DRB1*11:42	Unconfirmed	DRB1*11:84:02	Confirmed	DRB1*11:132	Unconfirmed
DRB1*11:08:01	Confirmed	DRB1*11:43	Confirmed	DRB1*11:84:03	Unconfirmed	DRB1*11:133	Unconfirmed
DRB1*11:08:02	Confirmed	DRB1*11:44	Unconfirmed	DRB1*11:85	Unconfirmed	DRB1*11:134	Unconfirmed
DRB1*11:08:03	Confirmed	DRB1*11:45	Confirmed	DRB1*11:86	Unconfirmed	DRB1*11:135	Unconfirmed
DRB1*11:09	Confirmed	DRB1*11:46:01	Confirmed	DRB1*11:87	Confirmed	DRB1*11:136	Unconfirmed
DRB1*11:10:01	Confirmed	DRB1*11:46:02	Unconfirmed	DRB1*11:88	Confirmed	DRB1*11:137	Confirmed
DRB1*11:10:02	Confirmed	DRB1*11:47	Confirmed	DRB1*11:89	Unconfirmed	DRB1*11:138	Unconfirmed
DRB1*11:11:01	Confirmed	DRB1*11:48	Unconfirmed	DRB1*11:90	Unconfirmed	DRB1*11:139	Unconfirmed

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DRB1*11:140	Unconfirmed	DRB1*11:159	Unconfirmed
DRB1*11:141	Unconfirmed	DRB1*11:160	Unconfirmed
DRB1*11:142	Confirmed	DRB1*11:161	Unconfirmed
DRB1*11:143	Unconfirmed	DRB1*11:162	Unconfirmed
DRB1*11:144	Unconfirmed	DRB1*11:163	Unconfirmed
DRB1*11:145	Unconfirmed	DRB1*11:164	Unconfirmed
DRB1*11:146	Unconfirmed	DRB1*11:165	Unconfirmed
DRB1*11:147:01	Unconfirmed	DRB1*11:166	Unconfirmed
DRB1*11:147:02	Unconfirmed	DRB1*11:167	Unconfirmed
DRB1*11:148	Unconfirmed		
DRB1*11:149	Unconfirmed		
DRB1*11:150	Unconfirmed		
DRB1*11:151	Unconfirmed		
DRB1*11:152	Unconfirmed		
DRB1*11:153	Unconfirmed		
DRB1*11:154	Unconfirmed		
DRB1*11:155	Unconfirmed		
DRB1*11:156	Unconfirmed		
DRB1*11:157	Unconfirmed		
DRB1*11:158	Unconfirmed		

¹Allele status “confirmed” or “unconfirmed” as listed on the IMGT/HLA web page 2014-July-25, release 3.17.0, www.ebi.ac.uk/imgt/hla.

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Lot-specific information
SPECIFICITY TABLE

DRB1*11 SSP subtyping

Specificities and sizes of the PCR products of the 46+1 primer mixes used for DRB1*11 SSP subtyping

Primer Mix	Size of spec. PCR product ¹	Size of control band ²	Amplified DRB1*11 alleles ³	Other amplified DRB alleles ⁴
1	175 bp	515 bp	*11:01:01-11:04:11, 11:06:01-11:21, 11:23:01-11:29, 11:31-11:66, 11:68-11:70, 11:72-11:103, 11:105-11:167	*03:08, 03:65
2	175 bp	430 bp	*11:05, 11:67	*08:31, 08:41, 12:04, 12:49, 14:11, 14:148
3⁵	70 bp	430 bp	*11:01:01-11:01:24, 11:03-11:06:03, 11:09-11:12:02, 11:15, 11:22-11:25, 11:27:01-11:30, 11:32-11:33, 11:35, 11:37:01-11:41, 11:43-11:44, 11:46:01-11:47, 11:49:01-11:51, 11:54:01-11:56, 11:58:01-11:63:02, 11:66-11:67, 11:72, 11:74:01-11:78, 11:80-11:81, 11:83-11:85, 11:87-11:88, 11:90-11:97, 11:99-11:102:02, 11:104, 11:106, 11:108-11:109, 11:111-11:117, 11:120-11:123, 11:126, 11:128-11:129, 11:133-11:135, 11:137-11:142, 11:144-11:152, 11:154-11:155, 11:157-11:158, 11:160-11:166	*04:15, 08:31, 08:41, 12:49, DRB5*01:13
4^{6,8}	200 bp	430 bp	*11:02:01-11:02:02, 11:14:01-11:14:02, 11:16, 11:18-11:21, 11:31, 11:45, 11:48, 11:65:01-11:65:02, 11:70, 11:73, 11:86, 11:98, 11:118-11:119, 11:124, 11:127, 11:132	*13:01:01-13:01:06, 13:01:08-13:02:09, 13:03:01-13:04, 13:06, 13:08, 13:10, 13:12:01-13:13, 13:15-13:16, 13:19, 13:22-13:23:02, 13:27-13:28, 13:30-13:41, 13:45, 13:48, 13:51-13:53, 13:57-13:59, 13:61:01-13:61:02, 13:64-13:66:02, 13:68-13:70, 13:72-13:73, 13:76-13:77, 13:79-13:85, 13:87, 13:89-13:99, 13:101-13:102, 13:104-13:107, 13:109-13:110, 13:112-13:113N, 13:115, 13:117-13:118, 13:120-13:128, 13:130-13:131, 13:135, 13:137N-13:139, 13:141-13:143, 13:145-13:148, 13:151-13:157, 13:159, 13:161-13:163, 13:165-13:168, 13:170-13:174, 13:176-13:177, 13:179, 13:181-13:182, 13:185N-13:187, 14:16, 14:63, 14:67, 14:78

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Lot No.	Size	Weight	Lot-specific information
5 ⁵	85 bp	515 bp	*11:01:01-11:01:24, 11:04:01-11:06:03, 11:08:01-11:10:02, 11:12:01-11:13:02, 11:15, 11:17-11:19:03, 11:22-11:35, 11:37:01-11:39, 11:42-11:47, 11:49:01-11:50, 11:52, 11:54:01-11:58:02, 11:60-11:62:02, 11:64, 11:66-11:67, 11:72-11:75, 11:77-11:81, 11:83-11:84:03, 11:87-11:97, 11:99-11:102:02, 11:104, 11:106, 11:108-11:109, 11:111-11:117, 11:119-11:121, 11:123, 11:126, 11:128-11:135, 11:137, 11:140-11:150, 11:152-11:155, 11:157-11:160, 11:162-11:163, 11:165-11:166
			*04:15, 04:61, 04:145, 04:154, 04:170, 08:31, 08:41, 12:04, 12:49, 14:11, 16:16, DRB5*01:13
6 ^{5,9}	80 bp	430 bp	*11:02:01-11:03, 11:11:01-11:11:03, 11:14:01-11:14:02, 11:16, 11:20-11:21, 11:36, 11:40-11:41, 11:48, 11:55, 11:59, 11:63:01-11:63:02, 11:65:01-11:65:02, 11:68, 11:70, 11:76, 11:85-11:86, 11:118, 11:122, 11:124, 11:127, 11:138-11:139, 11:151, 11:161
			*04:138
7 ⁵	125 bp	430 bp	*11:01:01-11:01:24, 11:05, 11:08:01-11:12:02, 11:14:01-11:15, 11:19:01-11:20, 11:22-11:24, 11:26-11:33, 11:37:01-11:37:02, 11:39, 11:45, 11:49:01-11:49:02, 11:51, 11:53, 11:61-11:62:02, 11:64, 11:66, 11:68-11:69, 11:72-11:75, 11:79-11:82, 11:87, 11:90-11:91, 11:93-11:97, 11:99-11:101, 11:103, 11:105-11:109, 11:111-11:112, 11:114, 11:117, 11:120-11:122, 11:125-11:126, 11:128, 11:133-11:134, 11:136, 11:140-11:145, 11:147:01-11:147:02, 11:149-11:150, 11:152, 11:154-11:155, 11:157-11:158, 11:162, 11:164, 11:166
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8 ⁵	125 bp	430 bp	*11:02:01-11:04:11, 11:06:01-11:07, 11:13:01-11:13:02, 11:16-11:18, 11:21, 11:25, 11:34-11:36, 11:38, 11:40-11:44, 11:46:01-11:48, 11:50, 11:52, 11:54:01-11:60, 11:63:01-11:63:02, 11:65:01-11:65:02, 11:67, 11:70, 11:76-11:78, 11:83-11:85, 11:88-11:89, 11:92, 11:98,
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9⁵	85 bp 115 bp	430 bp	*11:07, 11:103, 11:105, 11:107, 11:125 *11:77 *03:08, 03:65
10^{5,7}	85 bp	430 bp	*11:07, 11:23:01-11:23:02, 11:25, 11:45, 11:55, 11:64, 11:67, 11:103, 11:105, 11:107, 11:119, 11:125 *11:74:01-11:74:02 *03:08, 03:65
11	120 bp 155 bp 200 bp 255 bp	515 bp	*11:75 *11:08:01-11:08:03, 11:36, 11:42, 11:57, 11:64, 11:68, 11:130 *13:20, 13:25, 13:29, 13:43, 13:56, 13:60, 13:71, 13:78, 13:88, 13:119, 13:134, 13:149, 13:180, 14:03:01-14:03:02, 14:12:01-14:12:02, 14:40, 14:69, 14:74, 14:77, 14:84-14:85, 14:98, 14:102, 14:115-14:116, 14:135, 14:144, 14:156 *11:06:01-11:06:03, 11:21, 11:47, 11:57, 11:129 *03:20, 13:58, 13:81, 13:163, 14:29, 14:99
12^{5,12}	95 bp 145 bp 185 bp	430 bp	*11:90 *11:30 DRB3*02:18
13^{5,8,9}	105 bp	430 bp	*11:09, 11:16, 11:20, 11:28:01-11:28:02, 11:40, 11:58:01-11:59, 11:83, 11:87, 11:113, 11:115, 11:122 *03:08, 03:65
14	145 bp	430 bp	*11:17, 11:37:01-11:37:02, 11:41, 11:48, 11:50, 11:52, 11:56, 11:83, 11:107, 11:145, 11:149 *03:02:01-03:03, 03:06, 03:17, 03:26-03:27, 03:31, 03:35, 03:38, 03:41, 03:60, 03:74-03:75, 03:80, 03:85, 03:88, 03:90, 03:102-03:103, 08:20, 13:03:01-13:03:06, 13:07:01-13:08, 13:12:01-13:13, 13:19, 13:26:01-13:26:02, 13:32-13:33:03, 13:36-13:38, 13:40, 13:47-13:49, 13:53, 13:55, 13:58, 13:60, 13:65, 13:70, 13:72, 13:76, 13:81, 13:84-13:85, 13:88-13:90, 13:94:01-13:95, 13:101, 13:108, 13:115, 13:118, 13:120, 13:122, 13:133-13:135, 13:149, 13:151-13:152, 13:159, 13:164, 13:167, 13:174, 13:180, 13:182, 14:01:01-14:03:01, 14:05:01-14:09, 14:12:01-14:14, 14:16, 14:18-14:20, 14:22-14:27, 14:29, 14:32:01-14:32:03, 14:34, 14:36-14:41, 14:43-14:45, 14:47-14:49, 14:51, 14:54:01-14:56, 14:58-14:60, 14:62-14:63, 14:67,

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15⁵	60 bp 105 bp	430 bp	*11:10:01-11:10:02, 11:12:01-11:13:02, 11:17, 11:52, 11:114, 11:149	*14:11, 14:148
16⁵	110 bp	430 bp	*11:15, 11:24, 11:44, 11:49:01-11:50, 11:76, 11:85, 11:114, 11:127	*03:26, 03:33, 03:43-03:44, 03:71, 13:34, 13:62, 13:64, 13:68, 13:106, 13:136, 13:151, 13:174, 14:41, 14:77, 14:97, 14:110, DRB3*01:14
	255 bp		*11:91	
17^{5,10}	90 bp	430 bp	*11:17, 11:23:01-11:23:02, 11:25, 11:45, 11:52-11:55, 11:64, 11:67, 11:89, 11:119, 11:150, 11:159	*04:154, 04:170, 14:11
18⁵	95 bp	430 bp	*11:07, 11:27:01-11:27:03, 11:84:01-11:84:03, 11:103, 11:107, 11:124-11:125, 11:136, 11:138	*03:08, 03:65, DRB3*02:18
19^{6,9}	180 bp	430 bp	*11:31, 11:52, 11:96, 11:148	*03:10, 13:43, 13:45, 13:159, 13:179, 14:01:01-14:01:04, 14:07:01-14:08, 14:16, 14:22, 14:25-14:26, 14:32:01-14:32:03, 14:34-14:35, 14:38-14:39, 14:49, 14:53-14:55, 14:58, 14:60, 14:62, 14:69-14:70, 14:72, 14:74-14:75, 14:82, 14:86-14:88, 14:90, 14:92N, 14:97, 14:99, 14:104-14:105, 14:110-14:114, 14:117-14:119, 14:122, 14:124-14:125, 14:128-14:133, 14:137N, 14:139-14:140, 14:142, 14:146-14:147, 14:149-14:151, 14:153, 14:157
	225 bp		*11:23:01-11:23:02, 11:25, 11:32, 11:45, 11:55, 11:64, 11:70, 11:119	*08:20, 13:13, 13:18, 13:47, 13:55, 13:119, 13:144, 13:146, 13:154, 13:156, 13:158, 13:164, 14:03:01-14:03:02, 14:12:01-14:12:02, 14:27, 14:40, 14:55, 14:63, 14:67, 14:77-14:78, 14:84-14:85, 14:89, 14:102, 14:115-14:116, 14:135-14:136, 14:144, 14:156
	260 bp		*11:86, 13:16	
20⁵	115 bp	515 bp	*11:10:01-11:10:02, 11:12:01-11:13:02, 11:17, 11:29, 11:44, 11:47, 11:49:01-11:50, 11:52, 11:63:01-11:63:02, 11:85, 11:127, 11:149, 11:165	*03:04:01-03:04:02, 03:21, 03:26, 03:30, 03:33, 03:35, 03:44, 13:08, 13:19, 13:57, 13:60, 13:72, 13:76, 13:83-13:84, 13:87, 13:106-13:107, 13:135, 13:152, 13:182, 14:01:01-14:01:04,

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21	135 bp 175 bp	430 bp	*11:59, 11:80, 11:83, 11:87, 11:135, 11:142 *11:22	*03:08, 03:65 *04:15, 04:61, 04:138, 04:145, 04:154, 04:170
22 ⁵	115 bp 180 bp 215 bp 245 bp	430 bp	*11:15 *11:33, 11:35, 11:65:01-11:65:02, 11:130 *11:69, 11:82 *11:81	*13:62, 13:151 *13:09, 13:129, 14:24, 14:37
23 ⁵	120 bp	430 bp	*11:38	
24	155 bp 250 bp	430 bp	*11:39, 11:43, 11:50, 11:115, 11:145, 11:151 *11:06:01-11:06:03, 11:21, 11:47, 11:57, 11:81, 11:129,	*03:17, 03:37, 03:80, 13:118, 13:131, 13:135, 13:150, 14:59, 14:86, 14:96, 14:153-14:154 *03:20, 13:58, 13:81, 13:163, 14:29, 14:99
25 ^{5,8}	110 bp	430 bp	*11:01:12, 11:04:04, 11:09-11:10:02, 11:12:02-11:13:02, 11:16-11:17, 11:20, 11:22, 11:28:01-11:28:02, 11:40, 11:46:01, 11:52, 11:58:01-11:59, 11:62:02, 11:63:02, 11:83, 11:87, 11:113, 11:115, 11:118, 11:122, 11:149	*03:08, 03:65, 12:04, 12:49, 14:11, 14:148, 15:99, 15:109, 16:16, DRB3*02:18
26 ⁵	120 bp 160 bp	430 bp	*11:09-11:10:02, 11:13:01-11:13:02, 11:16-11:17, 11:20, 11:40, 11:46:01-11:46:02, 11:52, 11:59, 11:62:01-11:62:02, 11:80, 11:83, 11:87, 11:113, 11:118, 11:122, 11:149 *11:78, 11:152	*03:08, 03:65, 14:11, 14:148
27 ⁵	85 bp	430 bp	*11:11:01-11:11:03, 11:14:01-11:14:02, 11:20, 11:68, 11:73, 11:93, 11:122	*01:03, 01:39N, 04:14, 04:106, 04:132, 08:40, 13:02:01-13:02:03, 13:02:05-13:02:09, 13:03:01-13:03:06, 13:23:01-13:23:02, 13:29, 13:31, 13:33:01-13:34, 13:36-13:39, 13:41, 13:45, 13:63, 13:65-13:67, 13:73-13:74, 13:85, 13:88, 13:90, 13:95-13:97:02, 13:99, 13:101, 13:103-13:104, 13:107, 13:115, 13:123-13:124,

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28 ⁵	85 bp	430 bp	*11:02:01-11:03, 11:16, 11:21, 11:36, 11:40-11:41, 11:48, 11:55, 11:59, 11:63:01- 11:63:02, 11:65:01-11:65:02, 11:70, 11:76, 11:85, 11:118, 11:124, 11:127, 11:138-11:139, 11:151, 11:161	*01:42, 01:61, 04:02:01-04:02:03, 04:37, 04:124, 04:133-04:134, 04:138, 04:143, 04:161, 13:01:01- 13:01:06, 13:01:08-13:01:15, 13:04, 13:08, 13:10, 13:15, 13:17, 13:19- 13:20, 13:22, 13:24, 13:27-13:28, 13:32, 13:35, 13:40, 13:43, 13:48, 13:51-13:54, 13:57, 13:59, 13:61:01-13:61:02, 13:64, 13:68- 13:72, 13:75-13:76, 13:78-13:81, 13:83-13:84, 13:87, 13:89, 13:91- 13:94:01, 13:98, 13:102, 13:105- 13:106, 13:110-13:114, 13:116- 13:117, 13:121, 13:125, 13:127, 13:130-13:131, 13:138, 13:141, 13:146, 13:148-13:149, 13:153, 13:160, 13:162, 13:166, 13:173, 13:175, 13:177, 13:183, 13:185N- 13:187, 14:16, 14:57, 15:10
29 ⁵	100 bp	515 bp	*11:14:01-11:14:02, 11:19:01- 11:20, 11:31, 11:45, 11:73, 11:82	*01:03, 01:15, 01:24:01-01:24:02, 01:39N, 04:14, 04:38, 04:82, 04:86, 04:105:01-04:107, 04:125, 07:01:01:01-07:01:08, 07:03-07:04, 07:06-07:19, 07:21-07:23, 07:25- 07:30, 07:32-07:34, 08:03:02- 08:03:04, 08:14-08:15, 08:18- 08:19, 08:23, 08:25, 08:27, 08:29- 08:30:03, 08:32-08:38, 08:40, 08:45-08:47, 08:49, 08:51, 08:53, 08:56, 08:58, 12:22, 12:39, 13:02:01-13:02:03, 13:02:05- 13:03:06, 13:12:01-13:13, 13:23:01-13:23:02, 13:30-13:31, 13:33:01-13:34, 13:36-13:39, 13:41, 13:45, 13:65-13:67, 13:73- 13:74, 13:82, 13:85, 13:90, 13:95- 13:97:02, 13:99, 13:101, 13:103- 13:104, 13:107, 13:115, 13:118, 13:120, 13:122-13:124, 13:126, 13:128, 13:133, 13:135, 13:139- 13:140, 13:143, 13:145, 13:147, 13:151-13:152, 13:154-13:155, 13:157, 13:159, 13:161, 13:165, 13:167-13:168, 13:170-13:172, 13:174, 13:179, 13:182, 14:24, 14:63, 14:67, 15:02:01-15:02:12, 15:11, 15:14, 15:19, 15:26, 15:29- 15:30, 15:38-15:39, 15:44, 15:47, 15:58, 15:60, 15:68, 15:78, 15:80N, 15:99, 15:101, 15:103-15:105, 16:05:01-16:05:02, 16:07, DRB3*02:11, DRB5*01:07, DRB5*01:11, DRB5*02:03

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30^{5,8}	100 bp	515 bp	*11:01:01-11:01:24, 11:03-11:06:03, 11:09-11:12:02, 11:15, 11:22-11:25, 11:27:01-11:30, 11:32-11:33, 11:35, 11:38-11:40, 11:43-11:44, 11:46:01-11:47, 11:49:01-11:49:02, 11:51, 11:54:01-11:55, 11:58:01-11:63:02, 11:66-11:67, 11:72, 11:74:01-11:78, 11:80-11:81, 11:84:01-11:85, 11:87, 11:90-11:97, 11:99-11:102:02, 11:104, 11:106, 11:108-11:117, 11:120-11:123, 11:126, 11:128-11:129, 11:133-11:135, 11:137-11:142, 11:144, 11:146-11:148, 11:150-11:152, 11:154-11:158, 11:160-11:167	*08:17, 08:28, 12:02:01-12:02:06, 12:13, 12:15-12:16:03, 12:18-12:20, 12:23, 12:26-12:27, 12:31N-12:33, 12:37, 12:42-12:45, 12:49, 13:05:01-13:05:02, 13:11:01-13:11:02, 13:14:01-13:14:03, 13:18, 13:21:01-13:21:02, 13:24, 13:42, 13:46, 13:50:01-13:50:03, 13:54, 13:62-13:63, 13:75, 13:100, 13:111, 13:132, 13:136, 13:144, 13:150, 13:158, 13:169, 14:53, 14:128, 16:09:01-16:09:02
31⁵	85 bp	515 bp	*11:04:01-11:04:11, 11:06:01-11:06:03, 11:18, 11:25, 11:35, 11:38, 11:42-11:44, 11:46:01-11:47, 11:50, 11:54:01-11:54:02, 11:56-11:58:02, 11:60, 11:67, 11:77-11:78, 11:83-11:84:03, 11:88, 11:92, 11:102:01-11:102:02, 11:104, 11:113, 11:115-11:116, 11:119, 11:123, 11:129-11:130, 11:135, 11:137, 11:146, 11:148, 11:156, 11:160, 11:163, 11:165	*01:23, 04:12, 04:15, 04:18, 04:25, 04:36, 04:53, 04:58, 04:99, 04:136, 08:04:01, 08:04:04-08:04:07, 08:06, 08:10, 08:12, 08:20, 08:22, 08:28, 08:31, 08:54, 12:01:01-12:15, 12:17-12:21, 12:23-12:38, 12:40-12:49, 13:06, 13:11:01-13:11:02, 13:18, 13:42, 13:58, 13:77, 13:108, 13:144, 13:150, 13:156, 13:163-13:164, 13:169, 13:181, 14:12:01-14:12:02, 14:15, 14:73-14:74, 14:78, 14:84, 14:105, 14:128, 14:156, 15:21, 16:15, 16:23
32^{5,9}	75 bp	430 bp	*11:13:01-11:13:02, 11:17, 11:51-11:52, 11:89, 11:159	*14:11
33⁸	155 bp	430 bp	*11:88, 11:94	*13:177
34⁵	80 bp	515 bp	*11:31, 11:96, 11:148	*03:10, 13:43, 13:45, 13:179, 14:35, 14:53, 14:72, 14:128, 14:132, 14:138
	290 bp		*11:97	
35⁵	85 bp	430 bp	*11:98	
36⁵	110 bp 170 bp 255 bp	430 bp	*11:102:01-11:102:02, 11:99 *11:110 *11:128	*03:49
37	150 bp	430 bp	*11:101	
38	150 bp	430 bp	*11:78, 11:106, 11:152	
39⁵	110 bp	430 bp	*11:108	
40	180 bp	430 bp	*11:116, 11:120	*03:13:01-03:13:02, 03:38, 03:79, 03:88, 13:39, 13:54, 13:77-13:79, 13:100, 13:162-13:163, 13:181, 14:48, 14:64, 14:109, 14:115, DRB3*01:14
41^{5,8}	65 bp	430 bp	*11:07, 11:13:01-11:13:02, 11:17, 11:26, 11:34, 11:52,	*03:08, 04:61, 04:145, 04:154, 04:170, 14:11, DRB3*02:18

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42	135 bp 180 bp	430 bp	*11:72, 11:92 *11:104	
43	235 bp	430 bp	*11:112, 11:137	*03:78
44⁹	200 bp	430 bp	*11:111	
45⁵	90 bp	430 bp	*11:23:01-11:23:02, 11:25, 11:32, 11:45, 11:55, 11:64, 11:67, 11:70, 11:119	
46^{5,8}	70 bp	430 bp	*11:60, 11:109	
47¹¹	-	-	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 DRB1*11 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 430 or 515 base pairs respectively, well distribution as outlined in the table. Well number 1 contains the longer, 515 bp, internal positive control band. The well distribution of the internal controls can help in orientation of the kit on gel photo, as well as allow for kit identification. In the presence of a specific amplification the intensity of the control band often decreases.

³For several DRB1 alleles 1st and/or 3rd 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 DRB1 alleles, non-DRB1*11 alleles will be amplified by primer mixes 1 to 11, 13 to 22, 24 to 34, 36, 40, 41 and 43. In addition, a few DRB3 and DRB5 alleles will be amplified by primer mixes 3, 5, 7, 12, 14, 16, 18, 25, 29, 40 and 41.

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

In order to have as little co-amplification as possible of non-DRB1*11 alleles by the primer pairs of the DRB1*11 subtyping kit, the DRB1*11 characteristic sequence motif in codon 58, 'Ag', has been used in either the 5'-primer or the 3'-primer in many of the DRB1*11 primer mixes and consequently many of the specific PCR products are shorter than 100 base pairs.

⁶Primer mix 4 may faintly amplify the DRB1*13:29 allele.

⁷Primer mix 10 may faintly amplify the DRB1*11:53 allele.

⁸Primer mixes 4, 13, 25, 30, 33, 41 and 46 have a tendency to giving rise to primer oligomer formation.

⁹Primer mixes 6, 13, 19, 32 and 44 may have tendencies of unspecific amplifications.

¹⁰Primer mix 17 may give rise to a lower yield of HLA-specific PCR product than the other DRB1*11 primer mixes.

101.115-24/03 – including *Taq* polymerase, IFU-01
101.115-24u/03u – without *Taq* polymerase, IFU-02

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Lot No.: **38X**

Lot-specific information

¹¹Primer mix 47 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.

¹²Primer mix 12 may amplify the DRB1*11:60 and 11:109 and the DRB1*15:68 alleles.

101.115-24/03 – including *Taq* polymerase, IFU-01
101.115-24u/03u – without *Taq* polymerase, IFU-02

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Lot No.: **38X**

Lot-specific information

PRIMER SPECIFICATION

Well No.	1	2	3	4	5	6	7	8	9	10	11	12
Length of spec. PCR product	175	175	70	200	85	80	125	125	85	85	155	95
									115	120	200	145
											255	185
Length of int. pos. control ¹	515	430	430	430	515	430	430	430	430	430	515	430
5'-primer(s) ²	13(125) 5'-gTC 3'	13(125) 5'-ggg 3'	58(261) 5'-gAg 3'	13(125) 5'-gTC 3'	58(260) 5'-TgA 3'	58(261) 5'-gAg 3'	58(261) 5'-gAg 3'	58(261) 5'-gAg 3'	58(261) 5'-gAg 3'	58(261) 5'-gAg 3'	13(125) 5'-gTC 3'	10(116) 5'-gCT 3'
												23(157) 5'-ggA 3'
												40(208) 5'-TCA 3'
3'-primer(s) ³	58(260) 5'-CCT 3'	58(260) 5'-CCT 3'	66(286) 5'-gAA 3'	66(286) 5'-gAT 3'	70(298) 5'-CCT 3'	70(298) 5'-CTC 3'	86(344) 5'-CAC 3'	86(344) 5'-CCA 3'	73(305) 5'-ggC 3'	73(305) 5'-ggC 3'	50(238) 5'-CgC 3'	58(260) 5'-CCT 3'
	58(260) 5'-CCT 3'		66(286) 5'-gAA 3'	66(286) 5'-gAT 3'	72(303) 5'-gCg 3'				73(305) 5'-ggC 3'	73(305) 5'-ggC 3'	66(286) 5'-gAg 3'	
	58(260) 5'-CCT 3'		66(286) 5'-gAA 3'		73(307) 5'-CAG 3'				82(334) 5'-gTg 3'	73(307) 5'-CAG 3'	85(341) 5'-CAG 3'	
			67(288) 5'-AgA 3'							84(338) 5'-CCT 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	105	145	60	110	90	95	180	115	135	115	120	155
			105	255			225		175	180		250
							260			215		
										245		
Length of int. pos. control ¹	430	430	430	430	430	430	430	515	430	430	430	430
5'-primer(s) ²	36(196) 5'-AgA 3'	13(125) 5'-gTC 3'	37(197) 5'-gTT 3'	13(125) 5'-gTC 3'	58(260) 5'-TgA 3'	58(261) 5'-gAg 3'	13(125) 5'-gTC 3'	13(125) 5'-gTC 3'	13(125) 5'-ACA 3'	13(125) 5'-gTC 3'	59(263) 5'-ggg 3'	13(125) 5'-gTC 3'
	36(196) 5'-AgA 3'		37(197) 5'-gTT 3'						26(164) 5'-gTA 3'			
			51(239) 5'-gAT 3'									
3'-primer(s) ³	58(260) 5'-CCT 3'	47(227) 5'-ggT 3'	58(260) 5'-CCT 3'	36(196) 5'-gTC 3'	73(307) 5'-CAG 3'	77(317) 5'-AAT 3'	59(265) 5'-gTg 3'	37(197) 5'-Cgg 3'	58(260) 5'-CCT 3'	37(199) 5'-CAA 3'	86(344) 5'-CCA 3'	51(239) 5'-CCC 3'
				37(199) 5'-CAG 3'	74(308) 5'-CCT 3'	77(317) 5'-AgT 3'	74(308) 5'-CCA 3'	37(197) 5'-CgA 3'		59(264) 5'-TAG 3'		81(330) 5'-TTT 3'
				37(199) 5'-CAA 3'			86(344) 5'-CAT 3'	38(200) 5'-gCg 3'		71(299) 5'-gCg 3'		85(341) 5'-CAG 3'
				38(200) 5'-gCg 3'						81(330) 5'-TTT 3'		
				84(340) 5'-AAT 3'								
Well No.	13	14	15	16	17	18	19	20	21	22	23	24

101.115-24/03 – including *Taq* polymerase, IFU-01
101.115-24u/03u – without *Taq* polymerase, IFU-02

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Lot No.: **38X**

Lot-specific information

Well No.	25	26	27	28	29	30	31	32	33	34	35	36
Length of spec. PCR product	110	120	85	85	100	100	85	75	155	80	85	110
		160								290		170
												255
Length of int. pos. control ¹	430	430	430	430	515	515	515	430	430	515	430	430
5'-primer(s) ²	34(189) 5'-CAG ^{3'}	19(143) 5'-CAG ^{3'}	71(299) 5'-CgA ^{3'}	71(299) 5'-CgA ^{3'}	66(286) 5'-ACA ^{3'}	47(227) 5'-gTT ^{3'}	71(299) 5'-CAG ^{3'}	58(261) 5'-gAg ^{3'}	13(125) 5'-gTC ^{3'}	47(227) 5'-gTT ^{3'}	71(299) 5'-Cgg ^{3'}	13(125) 5'-gTC ^{3'}
	36(196) 5'-AgA ^{3'}	31(181) 5'-TCC ^{3'}								98(381) 5'-AAT ^{3'}		
3'-primer(s) ³	58(260) 5'-CCT ^{3'}	58(260) 5'-CCT ^{3'}	86(344) 5'-CAC ^{3'}	86(344) 5'-CCA ^{3'}	86(344) 5'-CAC ^{3'}	66(286) 5'-gAA ^{3'}	86(344) 5'-CCA ^{3'}	70(296) 5'-TCC ^{3'}	48(230) 5'-CCT ^{3'}	59(265) 5'-gTg ^{3'}	86(344) 5'-CCA ^{3'}	32(184) 5'-gTg ^{3'}
						66(286) 5'-gAA ^{3'}		72(302) 5'-CCT ^{3'}	55(251) 5'-gCT ^{3'}	181(630) 5'-CTT ^{3'}		40(206) 5'-Cgg ^{3'}
						66(286) 5'-gAA ^{3'}						56(256) 5'-ATT ^{3'}
						67(288) 5'-AgA ^{3'}						84(340) 5'-AAg ^{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
Length of spec. PCR product	150	150	110	180	65	135	235	200	90	70
						180				
Length of int. pos. control ¹	430	430	430	430	430	430	430	430	430	430
5'-primer(s) ²	47(227) 5'-gTT ^{3'}	19(143) 5'-CAG ^{3'}	58(261) 5'-gAg ^{3'}	13(125) 5'-gTC ^{3'}	58(261) 5'-gAg ^{3'}	11(119) 5'-CTT ^{3'}	13(125) 5'-gTC ^{3'}	13(125) 5'-gTC ^{3'}	58(261) 5'-gAg ^{3'}	49(233) 5'-ggA ^{3'}
		23(155) 5'-gCA ^{3'}				26(165) 5'-TTg ^{3'}				
3'-primer(s) ³	83(337) 5'-CCg ^{3'}	58(260) 5'-CCT ^{3'}	80(328) 5'-gTA ^{3'}	60(266) 5'-Agg ^{3'}	66(286) 5'-gAg ^{3'}	58(260) 5'-CCT ^{3'}	77(317) 5'-AgC ^{3'}	65(283) 5'-gTT ^{3'}	74(308) 5'-CCA ^{3'}	58(260) 5'-CCT ^{3'}
Well No.	37	38	39	40	41	42	43	44	45	46

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

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.

101.115-24/03 – including *Taq* polymerase, IFU-01
101.115-24u/03u – without *Taq* polymerase, IFU-02

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Lot No.: **38X**

Lot-specific information

CELL LINE VALIDATION SHEET																				
DRB1*11 SSP subtyping kit²																				
				Well																
				1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	
				Prod. No.:	201442201	201442202	201442203	201442204	201442205	201442206	201442207	201442208	201442209	201442210	201442211	201442212	201442213	201442214	201442215	201442216
IHWC cell line¹		DRB1																		
1	9001 SA	*01:01		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
2	9280 LK707	*15:02	*04:05	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
3	9011 E4181324	*15:02		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
4	9275 GU373	*03:01		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
5	9009 KAS011	*16:01		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
6	9353 SM	*04:07	*08:03	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
7	9020 QBL	*03:01		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
8	9025 DEU	*04:01		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
9	9026 YAR	*04:02		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
10	9107 LKT3	*04:05		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
11	9051 PITOUT	*07:01		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
12	9052 DBB	*07:01		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
13	9004 JESTHOM	*01:01		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
14	9071 OLGA	*08:02		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
15	9075 DKB	*09:01		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
16	9037 SWEIG007	*11:01		+	-	+	-	+	-	+	-	-	-	-	-	-	-	-	-	-
17	9282 CTM3953540	*03:01	*13:01	-	-	-	+	-	-	-	-	-	-	-	-	-	-	-	-	-
18	9257 32367	*09:01	*11:01	+	-	+	-	+	-	+	-	-	-	-	-	-	-	-	-	-
19	9038 BM16	*12:01		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
20	9059 SLE005	*13:02		-	-	-	+	-	-	-	-	-	-	-	-	-	-	-	-	-
21	9064 AMALA	*14:02		-	-	-	-	-	-	-	-	-	-	-	-	-	-	+	-	-
22	9056 KOSE	*13:02	*14:01	-	-	-	+	-	-	-	-	-	-	-	-	-	+	-	-	-
23	9124 IHL	*08:03	*14:14	-	-	-	-	-	-	-	-	-	-	-	-	-	+	-	-	-
24	9035 JBUSH	*11:01		+	-	+	-	+	-	+	-	-	-	-	-	-	-	-	-	-
25	9049 IBW9	*07:01		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
26	9285 WT49	*03:01		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
27	9191 CH1007	*04:05	*10:01	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
28	9320 BEL5GB	*04:16	*07:01	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
29	9050 MOU	*07:01		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
30	9021 RSH	*03:02		-	-	-	-	-	-	-	-	-	-	-	-	-	-	+	-	-
31	9019 DUCAF	*03:01		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
32	9297 HAG	*13:03		-	-	-	+	-	-	-	-	-	-	-	-	-	+	-	-	-
33	9098 MT14B	*04:04		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
34	9104 DHIF	*11:01		+	-	+	-	+	-	+	-	-	-	-	-	-	-	-	-	-
35	9302 SSTO	*04:03		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
36	9024 KT17	*04:03	*04:06	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
37	9065 HHKB	*13:01		-	-	-	+	-	-	-	-	-	-	-	-	-	-	-	-	-
38	9099 LZL	*14:02		-	-	-	-	-	-	-	-	-	-	-	-	-	-	+	-	-
39	9315 CML	*03:01	*04:01	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
40	9134 WHONP199	*07:01	*09:01	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
41	9055 H0301	*13:02		-	-	-	+	-	-	-	-	-	-	-	-	-	-	-	-	-
42	9066 TAB089	*08:03		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
43	9076 T7526	*09:01		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
44	9057 TEM	*14:01		-	-	-	-	-	-	-	-	-	-	-	-	-	-	+	-	-
45	9239 SHJO	*07:01		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
46	9013 SCHU	*15:01		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
47	9045 TUBO	*11:04	*12:01	+	-	+	-	+	-	+	-	-	-	-	-	-	-	-	-	-
48	9303 TER-ND	*01:03		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

101.115-24/03 – including *Taq* polymerase, IFU-01
101.115-24u/03u – without *Taq* polymerase, IFU-02

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Lot No.: **38X**

Lot-specific information

CELL LINE VALIDATION SHEET																			
DRB1*11 SSP subtyping kit²																			
				Well															
				17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32
				201442217	201442218	201442219	201442220	201442221	201442222	201442223	201442224	201442225	201442226	201442227	201442228	201442229	201442230	201442231	201442232
	IHWC cell line ¹	DRB1	Prod. No.:																
1	9001 SA	*01:01		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
2	9280 LK707	*15:02	*04:05	-	-	-	-	-	-	-	-	-	-	-	-	+	-	-	-
3	9011 E4181324	*15:02		-	-	-	-	-	-	-	-	-	-	-	-	+	-	-	-
4	9275 GU373	*03:01		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
5	9009 KAS011	*16:01		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
6	9353 SM	*04:07	*08:03	-	-	-	-	-	-	-	-	-	-	-	-	+	-	-	-
7	9020 QBL	*03:01		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
8	9025 DEU	*04:01		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
9	9026 YAR	*04:02		-	-	-	-	-	-	-	-	-	-	-	+	-	-	-	-
10	9107 LKT3	*04:05		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
11	9051 PITOUT	*07:01		-	-	-	-	-	-	-	-	-	-	-	-	+	-	-	-
12	9052 DBB	*07:01		-	-	-	-	-	-	-	-	-	-	-	-	+	-	-	-
13	9004 JESTHOM	*01:01		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
14	9071 OLGA	*08:02		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
15	9075 DKB	*09:01		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
16	9037 SWEIG007	*11:01		-	-	-	-	-	-	-	-	-	-	-	-	-	+	-	-
17	9282 CTM3953540	*03:01	*13:01	-	-	-	-	-	-	-	-	-	-	-	+	-	-	-	-
18	9257 32367	*09:01	*11:01	-	-	-	-	-	-	-	-	-	-	-	-	-	+	-	-
19	9038 BM16	*12:01		-	-	-	-	-	-	-	-	-	-	-	-	-	-	+	-
20	9059 SLE005	*13:02		-	-	-	-	-	-	-	-	-	-	+	-	+	-	-	-
21	9064 AMALA	*14:02		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
22	9056 KOSE	*13:02	*14:01	-	-	+	+	-	-	-	-	-	-	+	-	+	-	-	-
23	9124 IHL	*08:03	*14:14	-	-	-	+	-	-	-	-	-	-	-	-	+	-	-	-
24	9035 JBUSH	*11:01		-	-	-	-	-	-	-	-	-	-	-	-	-	+	-	-
25	9049 IBW9	*07:01		-	-	-	-	-	-	-	-	-	-	-	-	+	-	-	-
26	9285 WT49	*03:01		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
27	9191 CH1007	*04:05	*10:01	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
28	9320 BEL5GB	*04:16	*07:01	-	-	-	-	-	-	-	-	-	-	-	-	+	-	-	-
29	9050 MOU	*07:01		-	-	-	-	-	-	-	-	-	-	-	-	+	-	-	-
30	9021 RSH	*03:02		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
31	9019 DUCAF	*03:01		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
32	9297 HAG	*13:03		-	-	-	-	-	-	-	-	-	-	+	-	+	-	-	-
33	9098 MT14B	*04:04		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
34	9104 DHIF	*11:01		-	-	-	-	-	-	-	-	-	+	-	-	-	+	-	-
35	9302 SSTO	*04:03		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
36	9024 KT17	*04:03	*04:06	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
37	9065 HHKB	*13:01		-	-	-	-	-	-	-	-	-	-	-	+	-	-	-	-
38	9099 LZL	*14:02		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
39	9315 CML	*03:01	*04:01	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
40	9134 WHONP199	*07:01	*09:01	-	-	-	-	-	-	-	-	-	-	-	-	-	+	-	-
41	9055 H0301	*13:02		-	-	-	-	-	-	-	-	-	-	+	-	+	-	-	-
42	9066 TAB089	*08:03		-	-	-	-	-	-	-	-	-	-	-	-	-	+	-	-
43	9076 T7526	*09:01		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
44	9057 TEM	*14:01		-	-	+	+	-	-	-	-	-	-	-	-	-	-	-	-
45	9239 SHJO	*07:01		-	-	-	-	-	-	-	-	-	-	-	-	+	-	-	-
46	9013 SCHU	*15:01		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
47	9045 TUBO	*11:04	*12:01	-	-	-	-	-	-	-	-	-	-	-	-	-	+	+	-
48	9303 TER-ND	*01:03		-	-	-	-	-	-	-	-	-	-	+	-	+	-	-	-

101.115-24/03 – including *Taq* polymerase, IFU-01
101.115-24u/03u – without *Taq* polymerase, IFU-02

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Lot No.: **38X**

Lot-specific information

CELL LINE VALIDATION SHEET																		
DRB1*11 SSP subtyping kit ²																		
				Well														
				33	34	35	36	37	38	39	40	41	42	43	44	45	46	
				Prod. No.:	201442233	201442234	201442235	201442236	201442237	201442238	201442239	201442240	201442241	201442242	201442243	201442244	201442245	201442246
IHCW cell line ¹		DRB1																
1	9001 SA	*01:01		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
2	9280 LK707	*15:02	*04:05	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
3	9011 E4181324	*15:02		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
4	9275 GU373	*03:01		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
5	9009 KAS011	*16:01		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
6	9353 SM	*04:07	*08:03	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
7	9020 QBL	*03:01		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
8	9025 DEU	*04:01		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
9	9026 YAR	*04:02		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
10	9107 LKT3	*04:05		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
11	9051 PITOUT	*07:01		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
12	9052 DBB	*07:01		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
13	9004 JESTHOM	*01:01		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
14	9071 OLGA	*08:02		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
15	9075 DKB	*09:01		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
16	9037 SWEIG007	*11:01		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
17	9282 CTM3953540	*03:01	*13:01	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
18	9257 32367	*09:01	*11:01	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
19	9038 BM16	*12:01		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
20	9059 SLE005	*13:02		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
21	9064 AMALA	*14:02		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
22	9056 KOSE	*13:02	*14:01	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
23	9124 IHL	*08:03	*14:14	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
24	9035 JBUSH	*11:01		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
25	9049 IBW9	*07:01		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
26	9285 WT49	*03:01		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
27	9191 CH1007	*04:05	*10:01	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
28	9320 BEL5GB	*04:16	*07:01	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
29	9050 MOU	*07:01		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
30	9021 RSH	*03:02		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
31	9019 DUCAF	*03:01		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
32	9297 HAG	*13:03		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
33	9098 MT14B	*04:04		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
34	9104 DHIF	*11:01		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
35	9302 SSTO	*04:03		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
36	9024 KT17	*04:03	*04:06	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
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48	9303 TER-ND	*01:03		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

101.115-24/03 – including *Taq* polymerase, IFU-01
101.115-24u/03u – without *Taq* polymerase, IFU-02

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Lot No.: **38X**

Lot-specific information

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.

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 12, 16, 21 to 23, 33 to 40 and 42 to 46 were available. The specificities of the primers in primer solutions 12, 16, 21, 22, 33, 34, 36, 40, 42 and 45 were tested by separately adding one or more additional 5'-primers, respectively one or more additional 3'-primers.

In primer solution 23, 35, 38 and 46 the 3'-primer was tested by separately adding one 5'-primer, the 5'-primer was not possible test.

In primer solution 37, 39, 43 and 44 the 5'-primer was tested by separately adding one 3'-primer, the 3'-primer was not possible test.

In primer solutions 3, 9 to 11, 16, 19, 22, 24, 30, 32, 33 and 36 one, two or three of the 3'-primers were not possible to test, and in primer solutions 12, 15, 26, 34 and 42 one or two of the 5'-primers were not possible to test.

Additional 3'-primers in primer solutions 5, 10, 17 to 20 and 24 were tested by separately adding one or two 5'-primers.

101.115-24/03 – including *Taq* polymerase, IFU-01
101.115-24u/03u – without *Taq* polymerase, IFU-02

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Lot-specific information

101.115-24/03 – including *Taq* polymerase, IFU-01
101.115-24u/03u – without *Taq* polymerase, IFU-02

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Lot No.: **38X**

Lot-specific information

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