

101.116-24/03 – including *Taq* pol., IFU-01
101.116-24u/03u – without *Taq* pol., IFU-02

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

Lot No.: **01Y**

Lot-specific information
Olerup SSP[®] DRB1*13

Product number:	101.116-24/03 – including <i>Taq</i> pol. 101.116-24u/03u – without <i>Taq</i> pol.
Lot number:	01Y
Expiry date:	2017-October-01
Number of tests:	24 tests – Product No. 101.116-24/24u 3 tests – Product No. 101.116-03/03u
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. 01Y.

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*13 LOT (59S)**

The DRB1*13 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 DRB1*13 primer set, specificity and interpretation tables have been updated for the DRB alleles described since the previous *Olerup SSP[®]* DRB1*13 lot was made (**Lot No. 59S**). The kit design is based on IMGT/HLA database 3.19.0.

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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
15	-	Added	3'-primer added for increased yield.
17	-	Added	3'-primer added for the DRB1*13:178 allele.
19	-	Added	3'-primer added from well 41.
21	-	Added	3'-primer added for the DRB1*13:193 allele.
22	-	Added	3'-primer added for the DRB1*13:105 allele.
24	-	Added	3'-primers added for the DRB1*13:166 and 13:185N alleles, exchanged positive control primer pair.
25	-	Added	3'-primer added for the DRB1*13:185N allele.
34	-	Added	3'-primer added for the DRB1*13:178 allele.
35	-	Added	3'-primer added for the DRB1*13:105 allele.
36	-	Added	3'-primer added from well 41.
39	-	Added	3'-primer added for the DRB1*13:166 allele, exchanged control primer pair.
40	-	Added	3'-primer added from well 41.
41	Removed, Added	Moved, added	5'-primer removed, 3'-primers moved to wells 19, 36 and 40, primer pair added for the DRB1*13:50:02 and 13:50:03 alleles.
43	Added	Added	Primer pair added for the DRB1*13:124, 5'-primer added for the DRB1*13:190 allele.
45	-	Added	3'-primer added from well 48, 3'-primer added for the DRB1*13:147 allele.
46	-	Added	3'-primer added from well 48, 3'-primer added for the DRB1*13:147 allele.
48	Removed	Moved	5'-primer removed, 3'-primers moved to wells 45 and 46, negative control.

Change in revision R01 compared to R00:

1. Primer mix 43 does not amplify the DRB1*13:117 allele. This has been corrected in the Specificity and Interpretation tables.

Change in revision R02 compared to R01:

1. Primer mix 45 amplifies the DRB1*13:28 and DRB1*03:37 alleles. This has been corrected in the Specificity and Interpretation tables.

Change in revision R03 compared to R02:

1. Primer mix 14 does not amplify the DRB1*13:69 and the DRB1*11:63:03 and *15:10 alleles. This has been corrected in the Specificity and Interpretation tables.

Change in revision R04 compared to R03:

1. Primer mix 26 does not amplify the DRB1*13:26:01 allele. This has been corrected in the Specificity and Interpretation tables.

Change in revision R05 compared to R04:

1. Primer mix 12 does not amplify the DRB1*14:137N allele, and primer mix 20 does not amplify the DRB1*14:152N allele. 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, 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*13 SSP subtyping

CONTENT

The primer set contains 5'- and 3'-primers for identifying the DRB1*13:01 to DRB1*13:196 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 ‘DRB1*13’ in silver/gray ink.

Well No. 1 is marked with the Lot No ‘01Y’.

Wells 1 to 47 – DRB1*13 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 covered with a PCR-compatible foil.

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

INTERPRETATION

Due to the sharing of sequence motifs within groups of DRB1 alleles, non-DRB1*13 alleles are amplified by primer mixes 1 to 30, 32 to 41, 44, 45 and 47. In addition, a few DRB3 alleles will be amplified by primer mixes 1, 7, 9, 13, 18, 20 and 22 to 24.

For further details see Specificity Table.

UNIQUELY IDENTIFIED ALLELES

All the DRB1*13 alleles, i.e. **DRB1*13:01 to DRB1*13:196**, recognized by the HLA Nomenclature Committee in January 2015^{1,2} will be amplified by the primers in the DRB1*13 subtyping kit³.

The DRB1*13 kit enables separation of the confirmed DRB1*13 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*13 alleles is listed below.

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Lot-specific information

The DRB1*13 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*13 alleles can be distinguished by the different sizes of the HLA-specific PCR product:

Alleles	Primer mix
DRB1*13:92, 13:98	36

The DRB1*13 subtyping kit cannot the following silent mutations: the DRB1*13:01:01-13:01:02, 13:01:04-13:01:06, 13:01:08 and 13:01:10-13:01:16, the DRB1*13:02:01, 13:02:03-13:02:08 and 13:02:11, the DRB1*13:03:01-13:03:06, the DRB1*13:05:01-13:05:02, the DRB1*13:07:01-13:07:02, the DRB1*13:11:01-13:11:02, the DRB1*13:12:01-13:12:04, DRB1*13:14:01-13:14:03 alleles, the DRB1*13:21:01-13:21:02, the DRB1*13:23:01-13:23:02, the DRB1*13:33:02-13:33:03, the DRB1*13:50:02-13:50:03 and the DRB1*13:66:01-13:66:02 alleles.

¹DRB1 alleles listed on the IMGT/HLA web page 2015-January-19, release 3.19.0, 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 DRB1*13 primer set cannot separate the DRB1*13:165 and 13:171:01 from DRB1*11:20 alleles. These alleles can be distinguished by the DR low resolution kit and/or DRB1*11 high resolution kit.

The DRB1*13 primer set cannot separate the DRB1*13:01:01-13:01:02, 13:01:04-13:01:06, 13:01:08 and 13:01:10-13:01:16 and the DRB1*13:117 alleles.

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ALLELE CONFIRMATION STATUS

Allele	Status ¹	Allele	Status ¹	Allele	Status ¹	Allele	Status ¹
DRB1*13:01:01	Confirmed	DRB1*13:14:02	Confirmed	DRB1*13:56	Confirmed	DRB1*13:101	Confirmed
DRB1*13:01:02	Unconfirmed	DRB1*13:14:03	Unconfirmed	DRB1*13:57	Unconfirmed	DRB1*13:102	Unconfirmed
DRB1*13:01:03	Confirmed	DRB1*13:15	Confirmed	DRB1*13:58	Unconfirmed	DRB1*13:103	Unconfirmed
DRB1*13:01:04	Unconfirmed	DRB1*13:16	Confirmed	DRB1*13:59	Confirmed	DRB1*13:104	Unconfirmed
DRB1*13:01:05	Unconfirmed	DRB1*13:17	Confirmed	DRB1*13:60	Unconfirmed	DRB1*13:105	Confirmed
DRB1*13:01:06	Unconfirmed	DRB1*13:18	Confirmed	DRB1*13:61:01	Unconfirmed	DRB1*13:106	Confirmed
DRB1*13:01:07	Unconfirmed	DRB1*13:19	Confirmed	DRB1*13:61:02	Confirmed	DRB1*13:107	Unconfirmed
DRB1*13:01:08	Confirmed	DRB1*13:20	Confirmed	DRB1*13:62	Unconfirmed	DRB1*13:108	Unconfirmed
DRB1*13:01:09	Unconfirmed	DRB1*13:21:01	Confirmed	DRB1*13:63	Unconfirmed	DRB1*13:109	Unconfirmed
DRB1*13:01:10	Confirmed	DRB1*13:21:02	Confirmed	DRB1*13:64	Unconfirmed	DRB1*13:110	Unconfirmed
DRB1*13:01:11	Unconfirmed	DRB1*13:22	Confirmed	DRB1*13:65	Unconfirmed	DRB1*13:111	Confirmed
DRB1*13:01:12	Unconfirmed	DRB1*13:23:01	Unconfirmed	DRB1*13:66:01	Unconfirmed	DRB1*13:112	Confirmed
DRB1*13:01:13	Unconfirmed	DRB1*13:23:02	Unconfirmed	DRB1*13:66:02	Confirmed	DRB1*13:113N	Unconfirmed
DRB1*13:01:14	Unconfirmed	DRB1*13:24	Unconfirmed	DRB1*13:67	Unconfirmed	DRB1*13:114	Unconfirmed
DRB1*13:01:15	Unconfirmed	DRB1*13:25	Confirmed	DRB1*13:68	Unconfirmed	DRB1*13:115	Unconfirmed
DRB1*13:01:16	Unconfirmed	DRB1*13:26:01	Confirmed	DRB1*13:69	Unconfirmed	DRB1*13:116	Unconfirmed
DRB1*13:02:01	Confirmed	DRB1*13:26:02	Unconfirmed	DRB1*13:70	Confirmed	DRB1*13:117	Unconfirmed
DRB1*13:02:02	Confirmed	DRB1*13:27	Confirmed	DRB1*13:71	Unconfirmed	DRB1*13:118	Unconfirmed
DRB1*13:02:03	Unconfirmed	DRB1*13:28	Confirmed	DRB1*13:72	Unconfirmed	DRB1*13:119	Unconfirmed
DRB1*13:02:04	Unconfirmed	DRB1*13:29	Confirmed	DRB1*13:73	Unconfirmed	DRB1*13:120	Confirmed
DRB1*13:02:05	Confirmed	DRB1*13:30	Unconfirmed	DRB1*13:74	Unconfirmed	DRB1*13:121	Unconfirmed
DRB1*13:02:06	Unconfirmed	DRB1*13:31	Confirmed	DRB1*13:75	Unconfirmed	DRB1*13:122	Unconfirmed
DRB1*13:02:07	Unconfirmed	DRB1*13:32	Unconfirmed	DRB1*13:76	Unconfirmed	DRB1*13:123	Unconfirmed
DRB1*13:02:08	Unconfirmed	DRB1*13:33:01	Unconfirmed	DRB1*13:77	Unconfirmed	DRB1*13:124	Confirmed
DRB1*13:02:09	Unconfirmed	DRB1*13:33:02	Unconfirmed	DRB1*13:78	Unconfirmed	DRB1*13:125	Unconfirmed
DRB1*13:02:10	Unconfirmed	DRB1*13:33:03	Confirmed	DRB1*13:79	Confirmed	DRB1*13:126	Unconfirmed
DRB1*13:02:11	Unconfirmed	DRB1*13:34	Unconfirmed	DRB1*13:80	Unconfirmed	DRB1*13:127	Unconfirmed
DRB1*13:03:01	Confirmed	DRB1*13:35	Unconfirmed	DRB1*13:81	Confirmed	DRB1*13:128	Confirmed
DRB1*13:03:02	Confirmed	DRB1*13:36	Confirmed	DRB1*13:82	Confirmed	DRB1*13:129	Unconfirmed
DRB1*13:03:03	Unconfirmed	DRB1*13:37	Confirmed	DRB1*13:83	Unconfirmed	DRB1*13:130	Unconfirmed
DRB1*13:03:04	Confirmed	DRB1*13:38	Confirmed	DRB1*13:84	Unconfirmed	DRB1*13:131	Unconfirmed
DRB1*13:03:05	Unconfirmed	DRB1*13:39	Unconfirmed	DRB1*13:85	Unconfirmed	DRB1*13:132	Unconfirmed
DRB1*13:03:06	Unconfirmed	DRB1*13:40	Confirmed	DRB1*13:86	Unconfirmed	DRB1*13:133	Unconfirmed
DRB1*13:04	Confirmed	DRB1*13:41	Confirmed	DRB1*13:87	Confirmed	DRB1*13:134	Confirmed
DRB1*13:05:01	Confirmed	DRB1*13:42	Confirmed	DRB1*13:88	Unconfirmed	DRB1*13:135	Unconfirmed
DRB1*13:05:02	Unconfirmed	DRB1*13:43	Unconfirmed	DRB1*13:89	Confirmed	DRB1*13:136	Unconfirmed
DRB1*13:06	Confirmed	DRB1*13:44	Unconfirmed	DRB1*13:90	Confirmed	DRB1*13:137N	Confirmed
DRB1*13:07:01	Confirmed	DRB1*13:45	Unconfirmed	DRB1*13:91	Confirmed	DRB1*13:138	Unconfirmed
DRB1*13:07:02	Unconfirmed	DRB1*13:46	Unconfirmed	DRB1*13:92	Confirmed	DRB1*13:139	Unconfirmed
DRB1*13:08	Confirmed	DRB1*13:47	Unconfirmed	DRB1*13:93	Confirmed	DRB1*13:140	Unconfirmed
DRB1*13:09	Confirmed	DRB1*13:48	Confirmed	DRB1*13:94:01	Unconfirmed	DRB1*13:141	Confirmed
DRB1*13:10	Confirmed	DRB1*13:49	Confirmed	DRB1*13:94:02	Unconfirmed	DRB1*13:142N	Unconfirmed
DRB1*13:11:01	Confirmed	DRB1*13:50:01	Confirmed	DRB1*13:95	Confirmed	DRB1*13:143	Unconfirmed
DRB1*13:11:02	Confirmed	DRB1*13:50:02	Unconfirmed	DRB1*13:96:01	Confirmed	DRB1*13:144	Unconfirmed
DRB1*13:12:01	Confirmed	DRB1*13:50:03	Confirmed	DRB1*13:96:02	Confirmed	DRB1*13:145	Unconfirmed
DRB1*13:12:02	Unconfirmed	DRB1*13:51	Unconfirmed	DRB1*13:97:01	Confirmed	DRB1*13:146	Unconfirmed
DRB1*13:12:03	Unconfirmed	DRB1*13:52	Confirmed	DRB1*13:97:02	Unconfirmed	DRB1*13:147	Confirmed
DRB1*13:12:04	Unconfirmed	DRB1*13:53	Unconfirmed	DRB1*13:98	Unconfirmed	DRB1*13:148	Confirmed
DRB1*13:13	Confirmed	DRB1*13:54	Confirmed	DRB1*13:99	Unconfirmed	DRB1*13:149	Unconfirmed
DRB1*13:14:01	Confirmed	DRB1*13:55	Unconfirmed	DRB1*13:100	Unconfirmed	DRB1*13:150	Confirmed

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Lot-specific information

Allele	Status¹	Allele	Status¹	Allele	Status¹
DRB1*13:151	Unconfirmed	DRB1*13:171:01	Unconfirmed	DRB1*13:190	Unconfirmed
DRB1*13:152	Confirmed	DRB1*13:171:02	Unconfirmed	DRB1*13:191	Unconfirmed
DRB1*13:153	Unconfirmed	DRB1*13:172	Unconfirmed	DRB1*13:192	Unconfirmed
DRB1*13:154	Unconfirmed	DRB1*13:173	Unconfirmed	DRB1*13:193	Unconfirmed
DRB1*13:155	Unconfirmed	DRB1*13:174	Unconfirmed	DRB1*13:194	Unconfirmed
DRB1*13:156	Unconfirmed	DRB1*13:175	Unconfirmed	DRB1*13:195	Unconfirmed
DRB1*13:157	Unconfirmed	DRB1*13:176	Unconfirmed	DRB1*13:196	Unconfirmed
DRB1*13:158	Confirmed	DRB1*13:177	Unconfirmed		
DRB1*13:159	Unconfirmed	DRB1*13:178	Unconfirmed		
DRB1*13:160	Unconfirmed	DRB1*13:179	Unconfirmed		
DRB1*13:161	Unconfirmed	DRB1*13:180	Unconfirmed		
DRB1*13:162	Unconfirmed	DRB1*13:181	Unconfirmed		
DRB1*13:163	Unconfirmed	DRB1*13:182	Unconfirmed		
DRB1*13:164	Unconfirmed	DRB1*13:183	Unconfirmed		
DRB1*13:165	Unconfirmed	DRB1*13:184	Unconfirmed		
DRB1*13:166	Confirmed	DRB1*13:185N	Unconfirmed		
DRB1*13:167	Unconfirmed	DRB1*13:186	Unconfirmed		
DRB1*13:168	Unconfirmed	DRB1*13:187	Unconfirmed		
DRB1*13:169	Confirmed	DRB1*13:188	Unconfirmed		
DRB1*13:170	Unconfirmed	DRB1*13:189	Unconfirmed		

¹Allele status “confirmed” or “unconfirmed” as listed on the IMGT/HLA web page 2015-January-19, release 3.19.0, www.ebi.ac.uk/imgt/hla.

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Lot-specific information
SPECIFICITY TABLE

DRB1*13 SSP subtyping

Specificities and sizes of the PCR products of the 47+1 primer mixes used for DRB1*13 SSP subtyping

Primer Mix	Size of spec. PCR product ¹	Size of control band ²	Amplified DRB1*13 alleles ³	Other amplified DRB alleles ⁴
1	175 bp	515 bp	*13:01:01-13:16, 13:18-13:42, 13:44, 13:46-13:66:02, 13:68-13:102, 13:104-13:115, 13:117-13:121, 13:123-13:158, 13:161-13:164, 13:166-13:170, 13:171:02-13:174, 13:176-13:178, 13:180-13:182, 13:184-13:190, 13:192-13:194, 13:196	*03:01:01:01-03:01:05, 03:01:07-03:01:08, 03:01:10-03:07, 03:09, 03:11:01-03:41, 03:43-03:45, 03:47-03:63, 03:66-03:68N, 03:70-03:86, 03:88-03:91, 03:93-03:110, 03:112-03:118, 08:20, 14:02:01-14:03:02, 14:05:01-14:06:03, 14:09, 14:12:01-14:14, 14:17-14:21, 14:23:01, 14:23:02 ^w , 14:23:03-14:24, 14:27, 14:29-14:30, 14:33, 14:36-14:37, 14:40-14:45, 14:47-14:48, 14:51, 14:56, 14:59, 14:63-14:65, 14:67, 14:77-14:78, 14:80-14:81, 14:83-14:85, 14:89, 14:91, 14:94-14:96, 14:98, 14:100, 14:102-14:103, 14:106, 14:108-14:109, 14:115-14:116, 14:121, 14:123, 14:127:01-14:127:02, 14:134-14:136, 14:144, 14:154-14:156, 14:159, DRB3*01:14
2	200 bp	430 bp	*13:01:01-13:02:09, 13:02:11-13:04, 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, 13:74 ^w , 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, 13:120-13:131, 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-13:188, 13:190-13:191, 13:194	*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, 11:82, 11:86, 11:98, 11:118-11:119, 11:124, 11:127, 11:132, 11:171, 14:16, 14:24, 14:37, 14:63, 14:67, 14:78
3	200 bp	430 bp	*13:05:01-13:05:02, 13:07:01-13:07:02, 13:11:01-13:11:02, 13:14:01-13:14:03, 13:18, 13:21:01-13:21:02, 13:24, 13:26:01-13:26:02, 13:42, 13:46-13:47, 13:49-13:50:03, 13:54-13:55, 13:62-13:63, 13:75, 13:100, 13:108, 13:111,	*08:20, 11:01:01-11:01:17, 11:01:20-11:01:25, 11:03-11:04:12, 11:06:01-11:06:03, 11:09-11:12:02, 11:15, 11:23:01-11:25, 11:27:01-11:29, 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, 11:72, 11:74:01-11:78, 11:80-11:81, 11:83-11:85,

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17	215 bp 255 bp	430 bp	*13:02:02, 13:26:01, 13:60, 13:77, 13:163, 13:178, 13:181 *13:28	*11:01:03, 11:01:10-11:01:11, 11:04:07, 11:08:03, 11:19:02, 14:32:03 *03:73
18⁵	110 bp 230 bp	430 bp	*13:87 *13:13, 13:18, 13:33:02- 13:33:03, 13:47, 13:55, 13:61:01, 13:94:02, 13:96:02, 13:119, 13:144, 13:146, 13:154, 13:156, 13:158, 13:164	*03:01:02, 03:02:02, 03:05:03, 03:13:02, 03:17, 03:24, 03:27, 03:35, 03:81, 08:20, 11:23:01-11:23:02, 11:25, 11:27:01, 11:45, 11:55, 11:64, 11:84:01, 11:119, 11:124, 11:136, 11:138, 14:03:01-14:03:02, 14:12:01-14:12:02, 14:27, 14:38:01, 14:40, 14:47, 14:55, 14:63, 14:67, 14:77-14:78, 14:84-14:85, 14:89, 14:98, 14:102, 14:115- 14:116, 14:127:01, 14:135-14:136, 14:144, 14:156, DRB3*01:14
19⁵	110 bp 205 bp 260 bp	430 bp	*13:87, 13:106 *13:74 *13:16	*03:26, 03:33, 03:44, 11:44, 11:49:01- 11:50, 11:85, 11:127, 14:97 *11:86
20⁶	215 bp	515 bp	*13:17, 13:67, 13:116, 13:175, 13:195	*08:40, DRB3*02:27
21^{6,7}	175 bp 210 bp	430 bp	*13:27, 13:41, 13:71, 13:176 *13:103, 13:160	*03:76, 11:59 *03:01:17, 14:82, 14:95, 14:132
22^{5,7}	110 bp 175 bp 280 bp	430 bp	*13:68 *13:31, 13:46, 13:54, 13:77, 13:100, 13:162, 13:180 *13:13 [?] , 13:30 [?] , 13:33:01 [?] , 13:45 [?] , 13:52 [?] , 13:105	*11:24 *03:38, 03:79, 03:85, 03:96, 14:48, DRB3*01:14 *03:12 [?] , 03:16 [?] , 11:26 [?] , 11:40 [?] , 11:100, 14:19 [?]
23⁵	115 bp 245 bp	430 bp	*13:34, 13:64, 13:136, 13:174 *13:01:03, 13:28, 13:76, 13:163, 13:193	*03:43, 03:71, 11:76, 11:114, 14:41, 14:77, 14:110, DRB3*01:14 *03:01:17, 03:73, 03:97, 11:01:05, 11:01:10, 11:04:03, 11:06:02, 11:13:01- 11:13:02, 11:17, 11:52, 11:54:01, 11:159, 14:01:01, 14:01:03-14:01:04, 14:05:01- 14:05:02, 14:05:04, 14:07:01-14:08, 14:14, 14:18, 14:23:01-14:23:04, 14:26, 14:32:02- 14:32:03, 14:34-14:36, 14:39, 14:42- 14:44:01, 14:44:03-14:45, 14:54:01-14:56,

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26^{5,6}	90 bp 140 bp	430 bp	*13:150 *13:05:01-13:05:02, 13:18, 13:26:02, 13:42, 13:50:02-13:50:03, 13:63, 13:111, 13:132, 13:136, 13:144, 13:158, 13:189	*11:39, 11:43, 11:50, 11:115, 11:145, 11:151, 11:168, 11:174 *08:09, 08:21, 11:01:12, 11:04:04, 11:09-11:10:02, 11:12:02, 11:22, 11:28:02, 11:40, 11:46:01, 11:58:01, 11:59, 11:62:02, 11:63:02, 11:83, 11:87, 11:113, 11:115, 11:122, 11:149, 14:15, 14:22, 14:27, 14:73, 14:105
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29⁷	155 bp	430 bp	*13:15, 13:19, 13:53, 13:57, 13:85, 13:104, 13:195	*08:32, 12:01:01-12:01:08, 12:03:02-12:06, 12:08-12:11, 12:14, 12:17, 12:22, 12:24N- 12:25, 12:29-12:30, 12:34-12:36, 12:38- 12:40, 12:46-12:48, 12:53-12:54, 14:63, 14:67, 14:78
30⁵	85 bp	515 bp	*13:01:01-13:01:06, 13:01:08- 13:01:16, 13:04, 13:08, 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,	*01:42, 01:61, 04:02:01-04:02:03, 04:37, 04:124, 04:133-04:134, 04:138, 04:143, 04:161, 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,

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31	145 bp 175 bp 205 bp	430 bp	*13:152 *13:59 *13:72	
32	220 bp	430 bp	*13:02:02, 13:03:01-13:03:06, 13:10, 13:26:01, 13:33:01- 13:33:03, 13:37, 13:60, 13:66:01-13:66:02, 13:77, 13:81, 13:85, 13:88-13:90, 13:94:01-13:95, 13:101, 13:115, 13:120, 13:122, 13:133, 13:151- 13:152, 13:163, 13:167, 13:170, 13:172, 13:174, 13:176, 13:178, 13:180-13:181, 13:188, 13:194, 13:196	*03:76, 11:01:03, 11:01:10-11:01:11, 11:04:07, 11:08:03, 11:19:02, 11:73, 11:79, 11:93, 11:131-11:132, 11:153, 14:19, 14:21, 14:32:03, 14:109
33⁵	80 bp	430 bp	*13:43, 13:45, 13:179	*03:10, 11:31, 11:96, 11:148, 14:35, 14:53, 14:72, 14:128, 14:132, 14:138
34	145 bp 210 bp 255 bp	430 bp	*13:80 *13:178 *13:58, 13:81, 13:163	*03:16 *03:20, 11:06:01-11:06:03, 11:21, 11:47, 11:57, 11:129, 11:174, 14:29, 14:99
35	150 bp 280 bp	430 bp	*13:51 *13:13 [?] , 13:30 [?] , 13:33:01 [?] , 13:45 [?] , 13:52 [?] , 13:105	03:12 [?] , 03:16 [?] , 11:26 [?] , 11:40 [?] , 11:100, 14:19 [?]
36^{5,7}	75 bp 170 bp 260 bp	430 bp	*13:92 *13:90, 13:113N *13:98	*14:26
37⁵	100 bp	515 bp	*13:32, 13:65, 13:93, 13:120, 13:139	*03:12, 14:13, 14:63, 14:78, 14:85
38⁵	70 bp	430 bp	*13:33:01, 13:61:02, 13:94:01, 13:96:01	*03:19, 15:37:01, 15:104
39⁵	80 bp 130 bp 280 bp	515 bp	*13:102 *13:95 *13:13 [?] , 13:30 [?] , 13:33:01 [?] , 13:45 [?] , 13:52 [?] , 13:166	*14:158 *03:12 [?] , 03:16 [?] , 03:83, 11:26 [?] , 11:40 [?] , 14:19 [?]
40⁵	90 bp 120 bp 160 bp	430 bp	*13:101 *13:91 *13:99, 13:113N	*14:118
41⁵	55 bp	430 bp	*13:50:01-13:50:03, 13:69, 13:115, 13:172, 13:189	*03:52, 04:41, 04:77, 04:102, 04:113, 11:28:01-11:28:02, 11:58:01-11:58:02, 11:115, 16:08

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42	235 bp	430 bp	*13:112, 13:128	
43⁵	100 bp 205 bp	430 bp	*13:124 *13:190	
44	145 bp	430 bp	*13:01:01-13:01:06, 13:01:08-13:02:08, 13:02:11, 13:08, 13:10, 13:15-13:16, 13:19, 13:27-13:28, 13:31-13:32, 13:34-13:36, 13:39-13:41, 13:51-13:53, 13:57, 13:61:01-13:61:02, 13:64-13:65, 13:67-13:68, 13:72-13:73, 13:76, 13:79-13:80, 13:83-13:85, 13:87, 13:91-13:93, 13:96:01-13:99, 13:102-13:107, 13:109-13:110, 13:112-13:113N, 13:117, 13:120-13:121, 13:123-13:128, 13:130-13:131, 13:135, 13:137N-13:139, 13:141-13:143, 13:145-13:148, 13:153, 13:155, 13:159-13:160, 13:165-13:166, 13:168, 13:170-13:171:02, 13:173, 13:175-13:177, 13:179, 13:182-13:183, 13:185N-13:187, 13:190-13:191, 13:195	*11:16, 11:20, 11:118, 14:16, 14:57
45	135 bp 260 bp	430 bp	*13:148 *13:28, 13:141, 13:147	*03:37, 03:56, 11:160-11:161
46	135 bp 205 bp 260 bp	430 bp	*13:148 *13:137N, 13:142N *13:147	
47	180 bp	430 bp	*13:73	*11:139
48⁸	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*13 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.

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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 within groups of DRB1 alleles, non-DRB1*13 alleles are amplified by primer mixes 1 to 30, 32 to 41, 44, 45 and 47.

In addition, a few DRB3 alleles will be amplified by primer mixes 1, 7, 9, 13, 18, 20 and 22 to 24.

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

⁶Primer mixes 20, 21 and 26 may have tendencies of unspecific amplifications.

⁷Primer mixes 21, 22, 29 and 36 have a tendency to giving rise to primer oligomer formation.

⁸Primer mix 48 contains a negative control, which will amplify more than 95% of HLA amplicons as well as the amplicons generated by the control primer pairs matching the human growth hormone gene. HLA-specific PCR product sizes range from 75 to 200 base pairs and the PCR product generated by the HGH positive control primer pair is 430 base pairs.

‘w’, may be weakly amplified.

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

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PRIMER SPECIFICATION

Well No.	1	2	3	4	5	6	7	8	9	10	11	12
Length of spec. PCR product	175	200	200	170	220	215	200	190	270	260	210	220
Length of int. pos. control ¹	515	430	430	430	430	515	430	430	430	430	430	430
5'-primer(s) ²	13(125) 5'-gTC 3'	13(125) 5'-gTC 3'	13(125) 5'-gTC 3'	13(125) 5'-gTC 3'	13(125) 5'-gTC 3'	13(125) 5'-gTC 3'	36(196) 5'-AgA 3'	36(196) 5'-AgA 3'	13(125) 5'-gTC 3'	13(125) 5'-gTC 3'	13(125) 5'-gTC 3'	13(125) 5'-gTC 3'
3'-primer(s) ³	58(260) 5'-Cgg 3'	66(286) 5'-gAT 3'	66(286) 5'-gAA 3'	56(256) 5'-gCT 3'	70(298) 5'-CTT 3'	70(298) 5'-CTC 3'	86(344) 5'-CAC 3'	86(344) 5'-CCA 3'	86(344) 5'-CAC 3'	86(344) 5'-CCA 3'	66(286) 5'-gAg 3'	71(299) 5'-gCT 3'
	58(260) 5'-CAg 3'	66(286) 5'-gAT 3'	66(286) 5'-gAA 3'		70(298) 5'-CCT 3'	70(298) 5'-CgC 3'	92(364) 5'-CCT 3'		92(364) 5'-CCT 3'		66(286) 5'-gAg 3'	72(303) 5'-gCg 3'
		66(286) 5'-gAT 3'			73(307) 5'-CAg 3'						71(299) 5'-gCg 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	145	150	85	150	215	110	110	215	175	110	115	145
			235		255	230	205		210	175	245	180
							260			280		280
Length of int. pos. control ¹	515	430	515	430	430	430	430	515	430	430	430	515
5'-primer(s) ²	13(125) 5'-gTC 3'	31(181) 5'-TCT 3'	13(125) 5'-gTC 3'	34(189) 5'-CAg 3'	13(125) 5'-gTC 3'	13(125) 5'-gTC 3'	13(125) 5'-gTC 3'	10(116) 5'-gCT 3'	12(122) 5'-TAT 3'	13(125) 5'-gTC 3'	13(125) 5'-gTC 3'	13(125) 5'-gTC 3'
		34(189) 5'-CAA 3'		34(189) 5'-CAg 3'				15(133) 5'-gTT 3'	26(164) 5'-gTA 3'			
		37(197) 5'-gTT 3'										
3'-primer(s) ³	47(227) 5'-ggT 3'	70(298) 5'-CTC 3'	28(171) 5'-CTC 3'	70(298) 5'-CTC 3'	69(295) 5'-CTC 3'	36(196) 5'-gAT 3'	36(196) 5'-gAT 3'	71(299) 5'-gCT 3'	71(299) 5'-gCT 3'	36(196) 5'-gTC 3'	37(199) 5'-CAg 3'	45(223) 5'-CTA 3'
			77(317) 5'-AgT 3'		72(303) 5'-gCg 3'	73(307) 5'-CAg 3'	38(200) 5'-gCg 3'		78(321) 5'-CAA 3'	57(257) 5'-CgA 3'	78(321) 5'-CAA 3'	48(230) 5'-CCA 3'
					83(337) 5'-CCg 3'	77(318) 5'-TAA 3'	68(290) 5'-CCC 3'			93(365) 5'-gCT 3'	83(337) 5'-CCg 3'	60(266) 5'-Agg 3'
							86(344) 5'-CAT 3'					93(365) 5'-gCg 3'
Well No.	13	14	15	16	17	18	19	20	21	22	23	24

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Well No.	25	26	27	28	29	30	31	32	33	34	35	36
Length of spec.	110	90	145	160	155	85	145	220	80	145	150	75
PCR product	140	140					175			210	280	170
							205			255		260
Length of int. pos. control ¹	430	430	515	430	430	515	430	430	430	430	430	430
5'-primer(s) ²	13(125) 5'-gTC 3'	34(189) 5'-CAg 3'	13(125) 5'-gTC 3'	47(227) 5'-gTT 3'	28(171) 5'-gAg 3'	71(299) 5'-CgA 3'	16(135) 5'-CAA 3'	13(125) 5'-gTC 3'	47(227) 5'-gTT 3'	13(125) 5'-gTC 3'	13(125) 5'-gTC 3'	13(125) 5'-gTC 3'
		34(189) 5'-CAg 3'			28(171) 5'-gAg 3'		27(167) 5'-CCA 3'					
		51(239) 5'-gAg 3'					37(197) 5'-gTT 3'					
3'-primer(s) ³	36(196) 5'-gTA 3'	66(286) 5'-gAA 3'	47(227) 5'-ggA 3'	86(344) 5'-CCA 3'	66(286) 5'-gAT 3'	86(344) 5'-CCA 3'	71(299) 5'-gCT 3'	70(298) 5'-CTT 3'	59(265) 5'-gTg 3'	47(229) 5'-CCA 3'	49(235) 5'-CAA 3'	25(161) 5'-ACT 3'
	36(196) 5'-ggA 3'	66(286) 5'-gAA 3'	47(229) 5'-CCA 3'		66(286) 5'-gAT 3'			72(303) 5'-gCg 3'		69(295) 5'-CTC 3'	93(365) 5'-gCT 3'	53(245) 5'-CCA 3'
	36(196) 5'-gAA 3'									85(341) 5'-CAg 3'		56(254) 5'-TAA 3'
	45(223) 5'-CTA 3'											85(343) 5'-CAT 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.	100	70	80	90	55	235	100	145	135	135	180
PCR product			130	120			185		260	205	
			280	160			205			260	
Length of int. pos. control ¹	515	430	515	430	430	430	430	430	430	430	430
5'-primer(s) ²	36(196) 5'-AgA 3'	66(286) 5'-ACA 3'	13(125) 5'-gTC 3'	13(125) 5'-gTC 3'	31(181) 5'-TCT 3'	5(103) 5'-CAT 3'	37(199) 5'-ACA 3'	31(181) 5'-TCC 3'	13(125) 5'-gTC 3'	13(125) 5'-gTC 3'	25(161) 5'-gCT 3'
							126(464) 5'-CAT 3'				
							132(484) 5'-TCT 3'				
3'-primer(s) ³	56(256) 5'-gCT 3'	77(317) 5'-AgT 3'	26(164) 5'-ggg 3'	30(176) 5'-Agg 3'	36(196) 5'-gTT 3'	70(298) 5'-CTC 3'	58(260) 5'-Cgg 3'	66(286) 5'-gAT 3'	43(217) 5'-CAA 3'	43(217) 5'-CAA 3'	71(299) 5'-gCT 3'
			42(214) 5'-gTA 3'	38(202) 5'-gCA 3'			181(630) 5'-CTT 3'		82(332) 5'-AgC 3'	63(277) 5'-CTA 3'	
			93(365) 5'-gCg 3'	51(239) 5'-CCT 3'					85(343) 5'-ACT 3'	70(298) 5'-CTA 3'	
				53(245) 5'-CCA 3'						85(343) 5'-ACT 3'	
Well No.	37	38	39	40	41	42	43	44	45	46	47

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

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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.

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Lot-specific information

CELL LINE VALIDATION SHEET																				
DRB1*13 SSP subtyping kit²																				
				Well																
				1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	
				Prod. No.:	201077601	201321302	201077603	201077604	201077605	201077606	201298807	201077608	201298809	201077610	201321311	201077612	201077613	201077614	201548415	201077616
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	*14:54	+	+	-	-	+	+	+	-	+	+	-	+	+	-	-	-	+
23	9124 IHL	*08:03	*14:14	+	-	-	-	+	-	-	-	+	-	-	-	+	-	-	-	-
24	9035 JBUSH	*11:01		-	-	+	-	+	-	-	-	+	-	-	-	-	-	-	-	-
25	9049 IBW9	*07:01		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
26	9285 WT49	*03:01		+	-	-	-	-	-	-	-	+	-	+	-	-	-	-	+	-
27	9191 CH1007	*04:05	*10:01	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
28	9320 BEL5GB	*04:16	*07:01	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
29	9050 MOU	*07:01		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
30	9021 RSH	*03:02		+	-	-	-	-	-	-	+	-	+	-	-	-	+	-	+	-
31	9019 DUCAF	*03:01		+	-	-	-	-	-	-	-	+	-	+	-	-	-	-	+	-
32	9297 HAG	*13:03		+	+	-	+	+	-	-	-	+	-	-	+	+	-	-	-	-
33	9098 MT14B	*04:04		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
34	9104 DHIF	*11:01		-	-	+	-	+	-	-	-	+	-	-	-	-	-	-	-	-
35	9302 SSTO	*04:03		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
36	9024 KT17	*04:03	*04:06	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
37	9065 HHKB	*13:01		+	+	-	-	-	+	-	+	-	+	-	+	-	-	-	-	+
38	9099 LZL	*14:02		+	-	-	-	+	-	+	-	+	-	-	-	+	-	+	-	-
39	9315 CML	*03:01	*04:01	+	-	-	-	-	-	-	-	+	-	+	-	-	-	-	+	-
40	9134 WHONP199	*07:01	*09:01	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
41	9055 H0301	*13:02		+	+	-	-	-	+	+	-	+	-	-	+	-	-	-	-	+
42	9066 TAB089	*08:03		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
43	9076 T7526	*09:01		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
44	9057 TEM	*14:01		-	-	-	-	+	-	-	-	-	+	-	-	+	-	-	-	-
45	9239 SHJO	*07:01		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
46	9013 SCHU	*15:01		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
47	9045 TUBO	*11:04	*12:01	-	-	+	-	+	-	-	-	-	+	-	-	-	-	-	-	-
48	9303 TER-ND	*01:03		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

101.116-24/03 – including *Taq* pol., IFU-01
101.116-24u/03u – without *Taq* pol., IFU-02

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Lot-specific information

CELL LINE VALIDATION SHEET																				
DRB1*13 SSP subtyping kit²																				
				Well																
				17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	
				Prod. No.:	201548417	201077618	201548419	201548420	201548421	201548422	201077623	201548424	201548425	201321326	201077627	201077628	201077629	201321330	201321331	201077632
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	*14:54	-	-	-	-	-	-	+	-	+	-	+	-	-	-	-	
23	9124	IHL	*08:03	*14:14	-	-	-	-	-	-	+	-	+	-	-	-	-	-	-	
24	9035	JBUSH	*11:01		-	-	-	-	-	-	-	-	+	-	+	-	-	-	-	
25	9049	IBW9	*07:01		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
26	9285	WT49	*03:01		-	-	-	-	-	-	-	-	-	+	+	-	-	-	-	
27	9191	CH1007	*04:05	*10:01	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
28	9320	BEL5GB	*04:16	*07:01	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
29	9050	MOU	*07:01		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
30	9021	RSH	*03:02		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
31	9019	DUCAF	*03:01		-	-	-	-	-	-	-	-	-	-	+	+	-	-	-	
32	9297	HAG	*13:03		-	-	-	-	-	-	-	-	+	-	-	-	-	-	+	
33	9098	MT14B	*04:04		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
34	9104	DHIF	*11:01		-	-	-	-	-	-	-	-	+	-	+	-	-	-	-	
35	9302	SSTO	*04:03		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
36	9024	KT17	*04:03	*04:06	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
37	9065	HHKB	*13:01		-	-	-	-	-	-	-	-	-	-	+	+	-	+	-	
38	9099	LZL	*14:02		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
39	9315	CML	*03:01	*04:01	-	-	-	-	-	-	-	-	-	-	+	+	-	-	-	
40	9134	WHONP199	*07:01	*09:01	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
41	9055	H0301	*13:02		-	-	-	-	-	-	-	-	-	-	+	-	-	-	-	
42	9066	TAB089	*08:03		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
43	9076	T7526	*09:01		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
44	9057	TEM	*14:01		-	-	-	-	-	-	+	-	+	-	-	-	-	-	-	
45	9239	SHJO	*07:01		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
46	9013	SCHU	*15:01		-	-	-	-	-	-	-	-	-	-	-	+	-	-	-	
47	9045	TUBO	*11:04	*12:01	-	-	-	-	-	-	-	-	+	-	+	+	+	-	-	
48	9303	TER-ND	*01:03		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	

101.116-24/03 – including *Taq* pol., IFU-01
101.116-24u/03u – without *Taq* pol., IFU-02

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Lot No.: **01Y**

Lot-specific information

CELL LINE VALIDATION SHEET																		
DRB1*13 SSP subtyping kit ²																		
				Well														
				33	34	35	36	37	38	39	40	41	42	43	44	45	46	47
				Prod. No.:														
				201077633	201548434	201548435	201548436	201077637	201077638	201548439	201548440	201548441	201298842	201548443	201321344	201548445	201548446	201321347
	IHWC 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	*14:54	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
23	9124 IHL	*08:03	*14:14	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
24	9035 JBUSH	*11:01		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
25	9049 IBW9	*07:01		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
26	9285 WT49	*03:01		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
27	9191 CH1007	*04:05	*10:01	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
28	9320 BEL5GB	*04:16	*07:01	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
29	9050 MOU	*07:01		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
30	9021 RSH	*03:02		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
31	9019 DUCAF	*03:01		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
32	9297 HAG	*13:03		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
33	9098 MT14B	*04:04		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
34	9104 DHIF	*11:01		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
35	9302 SSTO	*04:03		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
36	9024 KT17	*04:03	*04:06	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
37	9065 HHKB	*13:01		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
38	9099 LZL	*14:02		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
39	9315 CML	*03:01	*04:01	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
40	9134 WHONP199	*07:01	*09:01	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
41	9055 H0301	*13:02		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
42	9066 TAB089	*08:03		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
43	9076 T7526	*09:01		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
44	9057 TEM	*14:01		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
45	9239 SHJO	*07:01		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
46	9013 SCHU	*15:01		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
47	9045 TUBO	*11:04	*12:01	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
48	9303 TER-ND	*01:03		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

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.

101.116-24/03 – including *Taq* pol., IFU-01
101.116-24u/03u – without *Taq* pol., IFU-02

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“Instructions for Use” (IFU)

Lot No.: **01Y**

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 17, 19 to 21, 24, 31, 33 to 36, 38 to 43 and 45 to 47 were available.

The specificities of the primers in primer solution 17, 19 to 21, 24, 31, 33, 34, 38 and 41 were tested by separately adding additional 5'-primers or 3'-primers.

In primer solutions 35, 36, 39, 40, 45 and 46 it was only possible to test the 5'-primer, the 3'-primers were not possible to test.

In primer solutions 42, 43 and 47 it was only possible to test the 3'-primer, the 5'-primer was not possible to test.

In primer solution 21, 26 and 31 one or two of the 5'-primers were not possible to test. One, two or three of the 3'-primers in primer solutions 7, 9, 17 to 19, 22 to 25, 27 and 34 were not possible to test.

Additional primers in primer solutions 2, 5, 6, 11, 12, 14, 18, 23, 26 and 32 were tested by separately adding one 5'-primer and/or one 3'-primer.

101.116-24/03 – including *Taq* pol., IFU-01
101.116-24u/03u – without *Taq* pol., IFU-02

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101.116-24u/03u – without *Taq* pol., IFU-02

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101.116-24u/03u – without *Taq* pol., IFU-02

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Lot No.: **01Y**

Lot-specific information

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