

DRB1*04

101.114-24/03 – including *Taq* pol., IFU-01

101.114-24u/03u – without *Taq* pol., IFU-02

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

Lot No.: **9D2**

Lot-specific information

Olerup SSP® DRB1*04

Product number:	101.114-24/03 – including <i>Taq</i> pol. 101.114-24u/03u – without <i>Taq</i> pol.
Lot number:	9D2
Expiry date:	2018-12-01
Number of tests:	24 tests – Product No. 101.114-24/24u 3 tests – Product No. 101.114-03/03u
Number of wells per test:	47+1
Storage - pre-aliquoted primers:	dark at -20°C
- PCR Master Mix:	-20°C

This Product Description is only valid for Lot No. 9D2.

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*04 LOT (95X)

The DRB1*04 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*04 specificity and interpretation tables have been updated for the DRB1 alleles reported since the previous Olerup SSP® DRB1*04 lot was made (**Lot No. 95X**). The kit design is based on IMGT/HLA database 3.23.0.

DRB1*04

101.114-24/03 – including *Taq* pol., IFU-01

101.114-24u/03u – without *Taq* pol., IFU-02

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

Lot No.: 9D2

Lot-specific information

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
5	-	Added	3'-primers added for the DRB1*04:05:18 and the DRB1*04:11:03 alleles.
23	Added	Added	Primer pair added for the DRB1*04:201 allele.
33	-	Moved	3'-primer moved to well 37 for improved HLA-specific amplification.
34	Added	-	5'-primer added for the DRB1*04:34 allele.
36	Exchanged	Exchanged	Primer pair exchanged for the DRB1*04:96 allele.
37	-	Added	3'-primer added from well 33 for the DRB1*04:65 allele.
41	-	Added	3'-primer added for the DRB1*04:182 allele.

Changes in revision R01 compared to R00:

1. Primer mix 42 does not amplify the DRB1*04:79 allele. Thus, this lot of the DRB1*04 subtyping kit cannot distinguish the DRB1*04:04:01-04:04:03, 04:04:06-04:04:10, 04:118, 04:121, 04:149, 04:177 and 04:193 alleles and the DRB1*04:79 allele. This has been corrected in the Specificity and Interpretation Tables.

DRB1*04

101.114-24/03 – including *Taq* pol., IFU-01

101.114-24u/03u – without *Taq* pol., IFU-02

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

Lot No.: **9D2**

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.

DRB1*04

101.114-24/03 – including *Taq* pol., IFU-01

101.114-24u/03u – without *Taq* pol., IFU-02

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

Lot No.: **9D2**

Lot-specific information

PRODUCT DESCRIPTION

DRB1*04 SSP subtyping

CONTENT

The primer set contains 5'- and 3'-primers for identifying the DRB1*04:01 to DRB1*04:207 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*04’ in silver/gray ink.

Well No. 1 is marked with the Lot No. ‘9D2’.

Wells 1 to 47 – DRB1*04 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 between DRB1 alleles, non-DRB1*04 alleles will be amplified by primer mixes 2 to 4, 7 to 11, 14 to 19, 24, 26 to 32, 39, 42 and 43. In addition, DRB3 and DRB5 alleles will be amplified by primer mixes 24 and 29.

For further details see Specificity Table.

UNIQUELY IDENTIFIED ALLELES

All the phenotypically different DRB1*04 alleles, i.e. **DRB1*04:01 to DRB1*04:207**, recognized by the HLA Nomenclature Committee in January 2016^{1,2} will be amplified by the primers in the DRB1*04 subtyping kit³.

The DRB1*04 kit enables separation of the confirmed DRB1*04 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*04 alleles is listed below.

DRB1*04

101.114-24/03 – including *Taq* pol., IFU-01

101.114-24u/03u – without *Taq* pol., IFU-02

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

Lot No.: 9D2

Lot-specific information

The DRB1*04 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*04 alleles can be distinguished by the different sizes of the HLA-specific PCR product:

Alleles	Primer mix	Alleles	Primer mix
DRB1*04:16, 04:151	12	DRB1*04:39, 04:101	19
DRB1*04:23, 04:180	12	DRB1*04:89, 04:178N	38
DRB1*04:27, 04:110	20	DRB1*04:117, 04:119N	47

The DRB1*04 subtyping kit cannot distinguish the silent mutation in the DRB1*04:01:01-04:01:16 alleles, the DRB1*04:02:01-04:02:05 alleles, the DRB1*04:03:01-04:03:07 and 04:03:09-04:03:11 alleles, the DRB1*04:04:01-04:04:03 and 04:04:06-04:04:10 alleles, the DRB1*04:05:01, 04:05:03-04:05:07 and 04:05:09-04:05:11, 04:05:13-04:05:14 and 04:05:16-04:05:17 alleles, the 04:05:02 and 04:05:15 alleles, the DRB1*04:06:01-04:06:06 alleles, the DRB1*04:07:01-04:07:05 alleles, the DRB1*04:08:01-04:08:04 alleles, the DRB1*04:10:01 and 04:10:03 alleles, the DRB1*04:11:01-04:11:02 alleles, the DRB1*04:17:01-04:17:02 alleles, the DRB1*04:56:01-04:56:02 alleles and the DRB1*04:105:01-04:105:02 alleles.

¹DRB1 alleles listed on the IMGT/HLA web page 2016-January-19, release 3.23.0, 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*04 subtyping kit cannot distinguish the DRB1*04:04:01-04:04:03, 04:04:06-04:04:10, 04:118, 04:121, 04:149, 04:177 and 04:193 alleles and the DRB1*04:79 allele.

DRB1*04

101.114-24/03 – including *Taq* pol., IFU-01

101.114-24u/03u – without *Taq* pol., IFU-02

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

Lot No.: 9D2

Lot-specific information

ALLELE CONFIRMATION STATUS

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

DRB1*04

101.114-24/03 – including *Taq* pol., IFU-01

101.114-24u/03u – without *Taq* pol., IFU-02

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

Lot No.: **9D2**

Lot-specific information

Allele	Status ¹	Allele	Status ¹	Allele	Status ¹
DRB1*04:122	Unconfirmed	DRB1*04:151	Unconfirmed	DRB1*04:181	Unconfirmed
DRB1*04:123	Confirmed	DRB1*04:152	Unconfirmed	DRB1*04:182	Confirmed
DRB1*04:124	Unconfirmed	DRB1*04:153	Unconfirmed	DRB1*04:183	Unconfirmed
DRB1*04:125	Unconfirmed	DRB1*04:154	Confirmed	DRB1*04:184	Unconfirmed
DRB1*04:126	Unconfirmed	DRB1*04:155	Unconfirmed	DRB1*04:185	Unconfirmed
DRB1*04:127	Confirmed	DRB1*04:156	Unconfirmed	DRB1*04:186N	Unconfirmed
DRB1*04:128	Unconfirmed	DRB1*04:157N	Unconfirmed	DRB1*04:187	Unconfirmed
DRB1*04:129	Confirmed	DRB1*04:158N	Unconfirmed	DRB1*04:188	Unconfirmed
DRB1*04:130	Unconfirmed	DRB1*04:159	Unconfirmed	DRB1*04:189	Unconfirmed
DRB1*04:131:01	Unconfirmed	DRB1*04:160	Unconfirmed	DRB1*04:190	Unconfirmed
DRB1*04:131:02	Unconfirmed	DRB1*04:161	Unconfirmed	DRB1*04:191	Unconfirmed
DRB1*04:132	Unconfirmed	DRB1*04:162	Unconfirmed	DRB1*04:192	Unconfirmed
DRB1*04:133	Unconfirmed	DRB1*04:163	Unconfirmed	DRB1*04:193	Unconfirmed
DRB1*04:134	Unconfirmed	DRB1*04:164	Unconfirmed	DRB1*04:194	Unconfirmed
DRB1*04:135	Unconfirmed	DRB1*04:165	Unconfirmed	DRB1*04:195	Unconfirmed
DRB1*04:136	Unconfirmed	DRB1*04:166	Unconfirmed	DRB1*04:196	Unconfirmed
DRB1*04:137	Unconfirmed	DRB1*04:167	Unconfirmed	DRB1*04:197	Unconfirmed
DRB1*04:138	Confirmed	DRB1*04:168	Confirmed	DRB1*04:198	Unconfirmed
DRB1*04:139	Unconfirmed	DRB1*04:169	Unconfirmed	DRB1*04:199	Unconfirmed
DRB1*04:140	Unconfirmed	DRB1*04:170	Unconfirmed	DRB1*04:200	Unconfirmed
DRB1*04:141	Unconfirmed	DRB1*04:171	Unconfirmed	DRB1*04:201	Unconfirmed
DRB1*04:142N	Unconfirmed	DRB1*04:172	Unconfirmed	DRB1*04:202	Unconfirmed
DRB1*04:143	Unconfirmed	DRB1*04:173	Unconfirmed	DRB1*04:203	Unconfirmed
DRB1*04:144	Unconfirmed	DRB1*04:174	Unconfirmed	DRB1*04:204	Unconfirmed
DRB1*04:145	Unconfirmed	DRB1*04:175	Unconfirmed	DRB1*04:205	Unconfirmed
DRB1*04:146	Unconfirmed	DRB1*04:176	Unconfirmed	DRB1*04:206	Unconfirmed
DRB1*04:147	Unconfirmed	DRB1*04:177	Unconfirmed	DRB1*04:207	Unconfirmed
DRB1*04:148	Confirmed	DRB1*04:178N	Unconfirmed		
DRB1*04:149	Unconfirmed	DRB1*04:179	Unconfirmed		
DRB1*04:150	Confirmed	DRB1*04:180	Unconfirmed		

¹Allele status “confirmed” or “unconfirmed” as listed on the IMGT/HLA web page 2016-January-19, release 3.23.0, www.ebi.ac.uk/imgt/hla.

RESOLUTION IN HOMO- AND HETEROZYGOTES

Results file with resolution in DRB1*04 homo- and heterozygotes is available upon request.

DRB1*04

101.114-24/03 – including *Taq* pol., IFU-01

101.114-24u/03u – without *Taq* pol., IFU-02

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

Lot No.: **9D2**

Lot-specific information

SPECIFICITY TABLE

DRB1*04 SSP subtyping

Specificities and sizes of the PCR products of the 47+1 primer mixes used for
DRB1*04 SSP subtyping

Primer Mix	Size of spec. PCR product ¹	Size of control band ²	Amplified DRB1*04 alleles ³	Other amplified DRB alleles ⁴
1	215 bp	515 bp	*04:01:01-04:01:16, 04:09, 04:13, 04:16, 04:21, 04:26, 04:33, 04:35, 04:38, 04:62-04:63, 04:67, 04:72:01-04:72:02, 04:76, 04:100, 04:111-04:115, 04:117, 04:119N, 04:123, 04:125, 04:127, 04:130, 04:135, 04:139, 04:145, 04:150-04:151, 04:153, 04:158N-04:159, 04:171, 04:174-04:175, 04:179, 04:184, 04:187, 04:190, 04:192, 04:194, 04:196, 04:200	
2	215 bp	430 bp	*04:02:01-04:02:05, 04:14, 04:37, 04:106, 04:124, 04:132-04:134, 04:138, 04:143, 04:161, 04:204	*14:57
3	225 bp	430 bp	*04:03:01-04:03:11, 04:06:01-04:07:05, 04:11:01-04:11:04, 04:17:01-04:17:02, 04:20, 04:27, 04:39, 04:41, 04:46, 04:49-04:52, 04:59-04:60, 04:65, 04:69, 04:71, 04:78, 04:85, 04:88, 04:91-04:93, 04:95:02-04:97, 04:100-04:102, 04:109-04:110, 04:114, 04:129, 04:136, 04:142N, 04:144, 04:146, 04:148, 04:150, 04:154, 04:156, 04:160, 04:163, 04:165, 04:169-04:170, 04:172, 04:176, 04:181, 04:183, 04:188, 04:195, 04:197-04:199, 04:203	*14:10, 14:143
4	225 bp	515 bp	*04:01:01-04:02:05, 04:04:01-04:05:11, 04:05:13-04:05:18, 04:08:01-04:10:03, 04:13-04:16, 04:19, 04:21, 04:23-04:24, 04:26, 04:28-04:30, 04:32-04:33, 04:35-04:38, 04:40, 04:42-04:43, 04:44 ^w , 04:45, 04:47-04:48, 04:53:01-04:53:02, 04:56:01-04:57, 04:61-04:63, 04:67-04:68, 04:70, 04:72:01, 04:73, 04:75-04:77, 04:79-04:84, 04:87, 04:89, 04:99, 04:104-04:108, 04:111-04:113, 04:115-04:125, 04:127-04:128, 04:130, 04:131:02-04:135, 04:138-04:139, 04:141, 04:143, 04:145, 04:147, 04:149, 04:151-04:153, 04:158N-04:159, 04:161-04:162, 04:164, 04:166, 04:168, 04:171, 04:173-04:175, 04:177-04:180, 04:182, 04:184, 04:187, 04:189-04:190, 04:192-04:194, 04:196, 04:200-04:202, 04:204-04:207	*11:22, 14:57
5	170 bp	430 bp	*04:05:01-04:05:11, 04:05:13-04:05:18, 04:09-04:12, 04:17:01-04:17:02, 04:24, 04:28-04:30, 04:45, 04:48, 04:57, 04:67,	

DRB1*04

101.114-24/03 – including *Taq* pol., IFU-01

101.114-24u/03u – without *Taq* pol., IFU-02

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

Lot No.: **9D2**

Lot-specific information

			04:77, 04:80-04:81N, 04:83-04:84, 04:86-04:87, 04:89-04:91, 04:103- 04:104, 04:106-04:107, 04:116, 04:125- 04:126, 04:131:01-04:131:02, 04:136- 04:137, 04:147, 04:152, 04:162, 04:173, 04:178N, 04:191, 04:201-04:203, 04:207	
6⁵	115 bp	430 bp	*04:06:01-04:06:06, 04:19-04:21, 04:46, 04:49, 04:65, 04:68, 04:78, 04:84-04:85, 04:91, 04:99, 04:114, 04:144, 04:176, 04:186N	
7	260 bp	430 bp	*04:01:01-04:01:16, 04:05:01-04:05:11, 04:05:13-04:05:18, 04:07:01-04:09, 04:14, 04:16-04:17:02, 04:19-04:21, 04:24, 04:26, 04:28-04:31, 04:33, 04:35, 04:38, 04:43, 04:45, 04:47-04:48, 04:54, 04:57, 04:61-04:63, 04:69, 04:72:01- 04:72:02, 04:74-04:77, 04:80-04:84, 04:86-04:87, 04:89-04:90, 04:92, 04:94:02N, 04:98:01-04:98:02, 04:102- 04:107, 04:111-04:113, 04:115-04:117, 04:119N, 04:123, 04:125, 04:127- 04:132, 04:135, 04:137, 04:139-04:141, 04:145, 04:151-04:153, 04:155, 04:158N-04:159, 04:162, 04:166, 04:170-04:175, 04:178N-04:179, 04:184-04:185, 04:187-04:192, 04:194, 04:196-04:197, 04:199-04:200, 04:202, 04:205-04:206	*11:22, 14:143
8	260 bp	430 bp	*04:02:01-04:04:10, 04:06:01-04:06:06, 04:10:01-04:13, 04:15, 04:18, 04:22- 04:23, 04:25, 04:27, 04:32, 04:36-04:37, 04:39-04:42, 04:44, 04:46, 04:49- 04:53:02, 04:55-04:56:02, 04:58-04:60, 04:65, 04:67-04:68, 04:70-04:71, 04:73, 04:78-04:79, 04:85, 04:88, 04:91, 04:93- 04:94:01N, 04:95:01-04:97, 04:99- 04:101, 04:108-04:110, 04:114, 04:118, 04:120N-04:122, 04:124, 04:126, 04:133-04:134, 04:136, 04:138, 04:142N-04:144, 04:146-04:150, 04:154, 04:156-04:157N, 04:161, 04:163-04:165, 04:167-04:169, 04:176- 04:177, 04:180-04:183, 04:186N, 04:193, 04:198, 04:201, 04:203-04:204, 04:207	*14:10, 14:57
9	215 bp	430 bp	*04:03:01-04:04:04, 04:04:05 ^w , 04:04:06-04:05:07, 04:05:08 ^w , 04:05:09- 04:05:11, 04:05:13-04:08:04, 04:10:01- 04:11:04, 04:12 ^w , 04:15, 04:17:01- 04:17:02, 04:18 ^w , 04:19-04:20, 04:23- 04:24, 04:25 ^w , 04:27-04:30, 04:31 ^w , 04:32, 04:36, 04:39-04:46, 04:47 ^w , 04:48-04:52, 04:53:01 ^w , 04:53:02, 04:54 ^w -04:55 ^w , 04:56:01-04:57, 04:58 ^w , 04:59-04:61, 04:68-04:71, 04:74, 04:77- 04:81N, 04:82 ^w , 04:83-04:85, 04:86 ^w , 04:87-04:96, 04:99 ^w , 04:101-04:102,	*11:22, 14:10, 14:143

DRB1*04

101.114-24/03 – including *Taq* pol., IFU-01

101.114-24u/03u – without *Taq* pol., IFU-02

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

Lot No.: **9D2**

Lot-specific information

			04:103 ^w , 04:104, 04:107-04:110, 04:116, 04:118, 04:120N-04:121, 04:126 ^w , 04:129, 04:131:01-04:131:02, 04:136- 04:137, 04:142N, 04:144, 04:146- 04:149, 04:152, 04:154, 04:156- 04:157N, 04:162-04:165, 04:167- 04:170, 04:172, 04:176-04:178N, 04:180-04:183, 04:185 ^w , 04:186N, 04:189 ^w , 04:191 ^w , 04:193, 04:195, 04:197-04:199, 04:201-04:203, 04:205- 04:207	
10	170 bp	515 bp	*04:01:01-04:04:10, 04:05:18-04:08:04, 04:11:03, 04:13-04:16, 04:18-04:23, 04:25, 04:27, 04:31-04:33, 04:35-04:44, 04:46-04:47, 04:49-04:56:02, 04:58- 04:61, 04:63, 04:65, 04:68, 04:70-04:76, 04:78-04:79, 04:85, 04:88, 04:92- 04:98:02, 04:100-04:102, 04:105:01- 04:105:02, 04:109-04:115, 04:117- 04:124, 04:127-04:130, 04:132-04:135, 04:138-04:145, 04:148-04:151, 04:153- 04:159, 04:161, 04:163-04:168, 04:170- 04:172, 04:174-04:177, 04:179-04:190, 04:192-04:200, 04:204-04:206	*11:22, 14:57
11	175 bp	430 bp	*04:15, 04:61, 04:138, 04:145, 04:154, 04:170	*11:22
	220 bp		*04:22, 04:98:02	
12	180 bp	515 bp	*04:16, 04:180	
	265 bp		*04:23, 04:52, 04:151, 04:203, 04:207	
13	170 bp	430 bp	*04:46	
	225 bp		*04:12, 04:18, 04:25, 04:31, 04:54- 04:55, 04:58, 04:86, 04:103, 04:126, 04:185, 04:191	
14⁷	210 bp	430 bp	*04:02:01-04:02:05, 04:12, 04:14, 04:18, 04:38, 04:48, 04:53:01-04:53:02, 04:56:01-04:56:02, 04:73 ^w , 04:82, 04:86, 04:88, 04:99-04:100, 04:105:01 ^w - 04:105:02 ^w , 04:106-04:107, 04:124- 04:125, 04:133-04:134, 04:136, 04:138, 04:161, 04:185, 04:204-04:205	*14:57
15⁷	175 bp	430 bp	*04:123, 01:10	
	215 bp		*04:34	
16	170 bp	430 bp	*04:116, 04:148	*11:126, 15:64
17	190 bp	430 bp	*04:15, 04:25, 04:36, 04:47, 04:54, 04:57, 04:191	*11:22
18	145 bp	430 bp	*04:28, 04:35, 04:42-04:43, 04:59, 04:147, 04:156, 04:199	*11:22
19	140 bp	515 bp	*04:39	
	210 bp		*04:24, 04:69, 04:78, 04:101, 04:168	*14:10, 14:143
20⁵	100 bp	430 bp	*04:63, 04:110, 04:161	
	175 bp		*04:40	
	255 bp		*04:27	
21⁶	155 bp	515 bp	*04:29	
	210 bp		*04:37, 04:58, 04:73, 04:105:01- 04:105:02, 04:122, 04:132, 04:206	
22⁶	230 bp	430 bp	*04:32, 04:50, 04:139, 04:166	
23	135 bp	430 bp	*04:33	

DRB1*04

101.114-24/03 – including *Taq* pol., IFU-01

101.114-24u/03u – without *Taq* pol., IFU-02

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

Lot No.: **9D2**

Lot-specific information

	255 bp		*04:201	
24^{5,8}	85 bp	430 bp	*04:01:01-04:01:16, 04:09, 04:16, 04:21, 04:26, 04:33-04:35, 04:38 ^w , 04:62-04:64, 04:66, 04:72:01-04:72:02, 04:76, 04:98:01-04:98:02, 04:111-04:113, 04:115, 04:117, 04:119N, 04:123, 04:125 ^w , 04:127-04:128, 04:130, 04:135, 04:139-04:141, 04:145, 04:151, 04:153, 04:155, 04:158N-04:159, 04:171, 04:174-04:175, 04:179 ^w , 04:184, 04:187-04:188, 04:190, 04:192, 04:194, 04:196, 04:200	*01:10, 01:16, 03:02:01-03:02:02, 03:05:01-03:05:03, 03:09, 03:14, 03:17, 03:27, 03:29, 03:35, 03:38, 03:40-03:41:02, 03:53, 03:74, 03:81, 03:88, 03:90, 03:102-03:103, 03:115, 03:122, 11:53 ^w , 11:79, 11:103:01-11:103:02, 11:105, 11:107, 11:125 ^w , 11:136 ^w , 13:196, 14:19, 14:109, 14:141, 15:103 ^w , DRB3*01:01:02:01-01:18, DRB3*02:02:01:01-02:03, DRB3*02:05-02:10, DRB3*02:11^w, DRB3*02:12-02:13, DRB3*02:15-02:16, DRB3*02:17^w, DRB3*02:18-02:23, DRB3*02:25, DRB3*02:27-02:33, DRB3*03:03
25⁵	125 bp 230 bp 260 bp	430 bp	*04:26 *04:45 *04:64	
26	200 bp	515 bp	*04:01:01-04:01:16, 04:03:01-04:05:11, 04:05:13-04:11:04, 04:13, 04:16-04:17:02, 04:19-04:24, 04:26-04:33, 04:35, 04:39-04:46, 04:48-04:52, 04:55, 04:57, 04:59-04:63, 04:65, 04:67-04:72:02, 04:74-04:79, 04:83-04:85, 04:87, 04:89-04:92, 04:94:01N-04:98:02, 04:101-04:104, 04:108-04:113, 04:115-04:123, 04:126-04:131:02, 04:135, 04:137, 04:139-04:142N, 04:144-04:149, 04:151-04:159, 04:162-04:174, 04:176-04:178N, 04:180-04:181, 04:183-04:184, 04:186N-04:188, 04:190, 04:192-04:203, 04:207	*14:10, 14:143
27⁵	115 bp	515 bp	*04:10:01-04:12, 04:60, 04:67, 04:91, 04:126, 04:136, 04:147, 04:201, 04:203, 04:207	*03:12, 08:06, 08:10, 08:12, 08:22, 08:54, 08:70, 12:46, 13:04, 13:32, 13:48, 13:58, 13:75, 13:81, 13:89, 13:93-13:94:02, 13:108, 13:164, 13:169, 14:65, 14:78, 14:169-14:170, 15:12
28⁵	265 bp 90 bp	430 bp	*04:49 *04:11:01-04:11:04, 04:17:01-04:17:02, 04:91, 04:136, 04:203	*08:29, 13:188, 14:169
29⁵	75 bp	430 bp	*04:07:01-04:07:05, 04:17:01-04:17:02, 04:20, 04:69, 04:74, 04:92, 04:94:02N, 04:102, 04:129, 04:160, 04:170, 04:172, 04:197, 04:199	*01:17, 09:01:02-09:01:05, 09:01:08-09:02:02, 09:04-09:05, 09:07-09:08, 09:10-09:27, 14:07:01-14:07:02, 14:14, 14:36, 14:42, 14:44:01-14:44:03, 14:51, 14:68:01-14:68:02, 14:93, 14:134, 14:143, DRB5*01:12

DRB1*04

101.114-24/03 – including *Taq* pol., IFU-01

101.114-24u/03u – without *Taq* pol., IFU-02

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

Lot No.: **9D2**

Lot-specific information

	260 bp		*04:64	
30⁵	80 bp	430 bp	*04:09, 04:67, 04:106, 04:125	*08:40, 13:03:01-13:04, 13:32-13:33:03, 13:38, 13:48, 13:65-13:66:02, 13:75, 13:81, 13:88-13:89, 13:93-13:95, 13:101, 13:115, 13:120, 13:122, 13:133, 13:139, 13:151-13:152, 13:167 [?] , 13:174, 13:188, 13:194
31^{5,7}	85 bp	430 bp	*04:14, 04:106, 04:132	*01:03, 01:39N, 08:40, 11:11:01, 11:11:03, 11:14:01-11:14:02, 11:20, 11:68, 11:73, 11:93, 11:122, 11:168, 11:184, 13:02:01-13:02:03, 13:02:05-13:02:09, 13:02:11-13:03:06, 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, 13:120, 13:122-13:124, 13:126, 13:128, 13:135, 13:139, 13:143, 13:145, 13:147, 13:151-13:152, 13:155, 13:159, 13:165, 13:167-13:168, 13:170-13:172, 13:174, 13:179-13:180, 13:182, 13:188, 13:194-13:195, 13:198, 13:202, 13:207-13:212
32^{5,8}	260 bp 120 bp	430 bp	*04:64 *04:01:01-04:05:01, 04:05:03-04:05:11, 04:05:13-04:05:14, 04:05:16-04:05:18, 04:07:01-04:18, 04:22-04:33, 04:35-04:45, 04:47-04:48, 04:50-04:63, 04:67, 04:69-04:77, 04:79-04:83, 04:86-04:90, 04:92-04:95:02, 04:97-04:98:02, 04:100-04:113, 04:115-04:132, 04:134-04:143, 04:145-04:151, 04:153-04:159, 04:161-04:163, 04:166-04:175, 04:177-04:183, 04:185, 04:187-04:207	*11:22
33	215 bp	430 bp	*04:158N	
34	260 bp	515 bp	*04:34, 04:66, 04:160	
35	210 bp 245 bp	430 bp	*04:81N *04:51, 04:70	
36^{5,9}	120 bp 180 bp	515 bp	*04:96 *04:71	
37	225 bp	430 bp	*04:22, 04:65, 04:72:01, 04:95:02, 04:131:02	
38⁷	140 bp 225 bp	430 bp	*04:89 *04:73, 04:75, 04:105:01-04:105:02, 04:122, 04:178N	

DRB1*04
101.114-24/03 – including *Taq* pol., IFU-01
101.114-24u/03u – without *Taq* pol., IFU-02

Visit www.olerup.com for
“Instructions for Use” (IFU)
Lot No.: 9D2
Lot-specific information

39⁵	100 bp 175 bp	430 bp	*04:83 *04:15, 04:61-04:62, 04:69, 04:138, 04:145-04:146, 04:154, 04:170	*11:22, 14:10, 14:57, 14:143
40	145 bp 200 bp	430 bp	*04:30, 04:85 *04:38, 04:56:01-04:56:02, 04:88, 04:100, 04:107, 04:125, 04:205	
41	165 bp 205 bp	430 bp	*04:76, 04:108 *04:182	
42⁵	110 bp 140 bp	430 bp	*04:41, 04:77, 04:102, 04:113, 04:152, 04:164	*14:10, 14:57, 14:143
43	130 bp	515 bp	*04:80, 04:179	*11:53, 11:125, 11:173
44	165 bp 240 bp	430 bp	*04:127 *04:87, 04:94:01N-04:94:02N, 04:120N, 04:129, 04:157N, 04:186N	
45	240 bp	515 bp	*04:03:08, 04:04:04, 04:10:02, 04:44, 04:72:02, 04:74, 04:95:01, 04:131:01, 04:140, 04:157N	
46^{5,7}	75 bp	430 bp	*04:92	
47	140 bp 250 bp	430 bp	*04:117 *04:119N, 04:142N	
48¹⁰			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 DRB*04 SSP subtypings.

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

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

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*04 alleles will be amplified by primer mixes 2 to 4, 7 to 11, 14 to 19, 24, 26 to 32, 39, 42 and 43. In addition, a few DRB3 and DRB5 alleles will be amplified by primer mixes 24 and 29.

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

⁶Primer mixes 21 and 22 may have tendencies of unspecific amplifications.

⁷Primer mixes 14, 15, 31, 38 and 46 have a tendency to giving rise to primer oligomer formation.

⁸Primer mixes 24 and 32 may give rise to a lower yield of HLA-specific PCR product than the other DRB1*04 primer mixes.

⁹Primer mix 36 may amplify the DRB1*11:60, 11:109 and 15:68 alleles.

DRB1*04**101.114-24/03 – including *Taq* pol., IFU-01****101.114-24u/03u – without *Taq* pol., IFU-02**Visit www.olerup.com for
“Instructions for Use” (IFU)**Lot No.: 9D2****Lot-specific information**

¹⁰Primer 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’, might be weakly amplified.

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

DRB1*04

101.114-24/03 – including *Taq* pol., IFU-01

101.114-24u/03u – without *Taq* pol., IFU-02

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

Lot No.: **9D2**

Lot-specific information

PRIMER SPECIFICATION

Well No.	1	2	3	4	5	6	7	8	9	10	11	12
Length of spec.	215	215	225	225	170	115	260	260	215	170	175	180
PCR product											220	265
Length of int.	515	430	430	515	430	430	430	430	430	515	430	515
pos. control ¹												
5'-primer(s) ²	13(125) 5' -ACA 3'	13(125) 5' -ACA 3'	13(125) 5' -ACA 3'	13(125) 5' -ACA 3'	13(125) 5' -ACA 3'	13(125) 5' -ACA 3'	13(125) 5' -ACA 3'	13(125) 5' -ACA 3'	13(125) 5' -ACA 3'	13(125) 5' -ACA 3'	13(125) 5' -ACA 3'	13(125) 5' -ACA 3'
			13(125) 5' -ACC 3'									
3'-primer(s) ³	70(298) 5' -CTT 3'	70(298) 5' -CTC 3'	74(308) 5' -CCT 3'	74(308) 5' -CCg 3'	56(256) 5' -gCT 3'	37(197) 5' -Cgg 3'	86(344) 5' -CAC 3'	86(344) 5' -CCA 3'	70(298) 5' -TCT 3'	56(256) 5' -ATC 3'	58(260) 5' -CCT 3'	58(262) 5' -CTg 3'
	70(298) 5' -TTT 3'				56(256) 5' -gCT 3'				70(298) 5' -CCT 3'	56(256) 5' -ATC 3'	73(305) 5' -ggC 3'	88(351) 5' -AAT 3'
					56(256) 5' -gCT 3'					56(256) 5' -gTC 3'		
										58(261) 5' -TCA 3'		
										58(261) 5' -TCC 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.	170	210	175	170	190	145	140	100	155	230	135	85
PCR product	225		215				210	175	210		255	
								255				
Length of int.	430	430	430	430	430	430	515	430	515	430	430	430
pos. control ¹												
5'-primer(s) ²	13(125) 5' -ACA 3'	13(125) 5' -ACA 3'	13(125) 5' -ACC 3'	43(217) 5' -ACA 3'	13(125) 5' -ACA 3'	13(125) 5' -ACA 3'	13(125) 5' -ACA 3'	13(125) 5' -ACA 3'	13(125) 5' -ACA 3'	13(125) 5' -ACA 3'	39(203) 5' -gCA 3'	71(299) 5' -gAA 3'
			26(165) 5' -TTg 3'								103(397) 5' -CTg 3'	71(299) 5' -gAA 3'
3'-primer(s) ³	55(253) 5' -AgC 3'	66(286) 5' -gAT 3'	70(298) 5' -CTT 3'	86(344) 5' -CCA 3'	59(265) 5' -gTT 3'	47(227) 5' -ggA 3'	46(225) 5' -TAg 3'	32(184) 5' -gTT 3'	51(239) 5' -CCA 3'	72(302) 5' -CCT 3'	71(299) 5' -gCT 3'	86(344) 5' -CAC 3'
	73(307) 5' -CAg 3'	66(286) 5' -gAT 3'		86(344) 5' -CAC 3'	66(286) 5' -gAA 3'		70(296) 5' -TCC 3'	58(260) 5' -CgC 3'	66(286) 5' -gAg 3'	77(319) 5' -gTg 3'	174(609) 5' -ACg 3'	
		66(286) 5' -gAT 3'						85(341) 5' -CAg 3'	70(298) 5' -CgC 3'			
		72(304) 5' -ggA 3'										
Well No.	13	14	15	16	17	18	19	20	21	22	23	24

DRB1*04

101.114-24/03 – including *Taq* pol., IFU-01

101.114-24u/03u – without *Taq* pol., IFU-02

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

Lot No.: **9D2**

Lot-specific information

Well No.	25	26	27	28	29	30	31	32	33	34	35	36
Length of spec.	125	200	115	90	75	80	85	120	215	260	210	120
PCR product	230		265		260		260				245	180
	260											
Length of int.	430	515	515	430	430	430	430	430	430	515	430	515
pos. control ¹												
5'-primer(s) ²	13(125) 5'-ATA 3'	13(125) 5'-ACA 3'	10(118) 5'-AgA 3'	57(258) 5'-AgC 3'	13(125) 5'-ATA 3'	57(258) 5'-AgC 3'	13(125) 5'-ATA 3'	13(125) 5'-ACA 3'	13(125) 5'-ACA 3'	13(125) 5'-gTC 3'	13(125) 5'-ACA 3'	19(145) 5'-ACC 3'
	23(155) 5'-gCC 3'		57(258) 5'-AgC 3'		74(308) 5'-CgA 3'		71(299) 5'-CgA 3'			13(125) 5'-ACC 3'		40(208) 5'-TCA 3'
	57(259) 5'-ATA 3'		63(275) 5'-CAA 3'				71(299) 5'-CAA 3'					
3'-primer(s) ³	86(344) 5'-CAC 3'	66(286) 5'-gAg 3'	86(344) 5'-CCA 3'	74(308) 5'-CCT 3'	86(344) 5'-CAC 3'	71(299) 5'-gCT 3'	86(344) 5'-CAC 3'	37(197) 5'-CgT 3'	71(301) 5'-CCg 3'	86(344) 5'-CAC 3'	69(293) 5'-T 3'	66(286) 5'-gAg 3'
		67(288) 5'-AgA 3'						39(203) 5'-AgT 3'			80(328) 5'-gTA 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.	225	140	100	145	165	110	130	165	240	75	140
PCR product		225	175	200	205	140		240			250
Length of int.	430	430	430	430	430	430	515	430	515	430	430
pos. control ¹											
5'-primer(s) ²	13(125) 5'-ACA 3'	13(125) 5'-ACA 3'	13(125) 5'-ACA 3'	13(125) 5'-ACA 3'	13(125) 5'-ACA 3'	13(125) 5'-ACA 3'	37(197) 5'-gTA 3'	13(125) 5'-ACA 3'	13(125) 5'-ACA 3'	196(674) 5'-ACA 3'	13(125) 5'-ACA 3'
3'-primer(s) ³	70(298) 5'-CCA 3'	46(224) 5'-ACC 3'	33(185) 5'-ggA 3'	45(223) 5'-CTT 3'	52(244) 5'-CAT 3'	36(196) 5'-gTT 3'	66(286) 5'-gAA 3'	55(251) 5'-gCg 3'	77(317) 5'-AAT 3'	206(706) 5'-CAT 3'	45(223) 5'-CTg 3'
	77(317) 5'-AgT 3'	71(299) 5'-gCg 3'	57(257) 5'-CAg 3'	49(233) 5'-CCA 3'	56(256) 5'-ATg 3'	37(197) 5'-CgA 3'		78(321) 5'-CAT 3'	83(336) 5'-CCA 3'		83(336) 5'-CCC 3'
		77(318) 5'-TAg 3'	58(260) 5'-CCT 3'	66(286) 5'-gAT 3'	67(287) 5'-ggg 3'	46(226) 5'-gTg 3'		80(328) 5'-gTA 3'			83(336) 5'-CCT 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 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.

“Instructions for Use” (IFU)

Lot-specific information

CE
0088

DRB1*04

101.114-24/03 – including *Taq* pol., IFU-01

101.114-24u/03u – without *Tag* pol., IFU-02

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

Lot No.: 9D2

Lot-specific information

[illegible]

DRB1*04

101.114-24/03 – including *Taq* pol., IFU-01

101.114-24u/03u – without *Tag* pol., IFU-02

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

Lot No.: 9D2

Lot-specific information

[illegible]

DRB1*04**101.114-24/03 – including *Taq* pol., IFU-01****101.114-24u/03u – without *Taq* pol., IFU-02**Visit www.olerup.com for
“Instructions for Use” (IFU)**Lot No.: 9D2****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 11, 13, 15 to 23, 25, 33 to 39 and 41 to 47 were available. The specificities of the primers in primer solutions 11, 13, 15, 17 to 21, 23, 35, 37 to 39, 42 and 45 were tested by separately adding one additional 5'-primer, respectively, one additional 3'-primer.

In primer solutions 16, 25, 34 and 36 it was only possible to test the 3'-primers, the 5'-primers were not possible to test.

In primer solutions 22, 33, 41, 43, 44, 46 and 47 it was only possible to test the 5'-primers, the 3'-primers were not possible to test.

One, two or three of the 3'-primers in primer solutions 1, 5, 10, 12 to 14, 17, 19 to 21, 23, 26, 32, 35, 37 to 40, 42 and 45 was not possible to test, and in primer solution 3, 15, 23, 24, 27, 29 and 31 one or two 5'-primers were not possible to test.

Additional 3'-primer in primer solution 10 was tested by separately adding one additional 5'-primer.

DRB1*04

101.114-24/03 – including *Taq* pol., IFU-01

101.114-24u/03u – without *Taq* pol., IFU-02

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

Lot No.: **9D2**

Lot-specific information

DRB1*04

101.114-24/03 – including *Taq* pol., IFU-01

101.114-24u/03u – without *Taq* pol., IFU-02

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

Lot No.: 9D2

Lot-specific information

DRB1*04

101.114-24/03 – including *Taq* pol., IFU-01

101.114-24u/03u – without *Taq* pol., IFU-02

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

Lot No.: **9D2**

Lot-specific information

DRB1*04

101.114-24/03 – including *Taq* pol., IFU-01101.114-24u/03u – without *Taq* pol., IFU-02Visit www.olerup.com for
“Instructions for Use” (IFU)Lot No.: **9D2**

Lot-specific information

ADDRESSES:**Manufacturer:****Olerup SSP AB**, Franzengatan 5, SE-112 51 Stockholm, Sweden.**Tel:** +46-8-717 88 27**Fax:** +46-8-717 88 18**E-mail:** olerup-se@caredx.com**Web page:** <http://www.olerup.com>**Distributed by:****Olerup GmbH**, Löwengasse 47 / 6, AT-1030 Vienna, Austria.**Tel:** +43-1-710 15 00**Fax:** +43-1-710 15 00 10**E-mail:** olerup-at@caredx.com**Web page:** <http://www.olerup.com>**Olerup Inc.**, 901 S. Bolmar St., Suite R, West Chester, PA 19382**Tel:** 1-877-OLERUP1**Fax:** 610-344-7989**E-mail:** olerup-us@caredx.com**Web page:** <http://www.olerup.com>For information on *Olerup* distributors worldwide, contact **Olerup GmbH**.