

101.211-24 – including *Taq* pol., IFU-01
101.211-24u – without *Taq* pol., IFU-02

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“Instructions for Use” (IFU)

Lot No.: **1D6**

Lot-specific information
Olerup SSP® DQB1*05

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Product number:	101.211-24 – including <i>Taq</i> polymerase 101.211-24u – without <i>Taq</i> polymerase
Lot number:	1D6
Expiry date:	2018-07-01
Number of tests:	24
Number of wells per test:	28+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. 1D6

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

CHANGES COMPARED TO THE PREVIOUS OLERUP SSP® DQB1*05 LOT (59X)

The DQB1*05 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.

Five wells have been added to DQB1*05, wells **25 to 29**.

The DQB1*05 primer set, specificity and interpretation tables have been updated for the HLA-DQB1 alleles described since the previous *Olerup SSP®* DQB1*05 lot was made (**Lot No. 59X**). The kit design is based on IMGT/HLA database 3.21.1.

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.

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

Well	5'-primer	3'-primer	rationale
1	Added	-	5'-primer added for the DQB1*05:01:16 allele.
2	Added	-	5'-primer added for the DQB1*05:01:16 allele.
3	-	Added	3'-primer added for the DQB1*05:02:13 allele.
4	-	Added	3'-primer added for the DQB1*05:03:12 allele.
7	Added	-	5'-primers added for the DQB1*05:06:02 and DQB1*05:52 alleles.
8	Added	-	5'-primer added for the DQB1*05:87Q allele.
10	-	Added	3'-primer added for the DQB1*05:71 allele.
11	Added	-	5'-primer added for the DQB1*05:96 allele.
12	Added	-	5'-primer added for the DQB1*05:96 allele.
13	-	Modified, added	3'-primer modified for improved HLA-specific amplification, 3'-primer added for the DQB1*05:49 allele.
14	-	Added	3'-primers added for the DQB1*05:69 and DQB1*05:73 alleles.
15	Added	Added	Primer pair added for the DQB1*05:03:14 allele.
16	Modified	-	5'-primer modified for improved HLA-specific amplification.
17	Added	-	5'-primer added for the DQB1*05:90N allele.
18	-	Added	3'-primers added for the DQB1*05:72 and DQB1*05:88 alleles.
19	Added	-	5'-primer added for the DQB1*05:60 allele.
20	Added	-	5'-primer added for the DQB1*05:57 allele.
21	Added	-	5'-primers added for the DQB1*05:63 and DQB1*05:82 alleles.
23	-	Modified	3'-primer modified for improved HLA-specific amplification.
24	Added	Added	Updated negative control moved to well 29, primer pairs added for the DQB1*05:71 and DQB1*05:80 alleles.
25	New	New	New primer pair added for the DQB1*05:75 allele.
26	New	New	New primer pair added for the DQB1*05:78 allele.
27	New	New	New primer pair added for the DQB1*05:79 allele.
28	New	New	New primer pair added for the DQB1*05:56 allele.
29	-	-	Updated negative control added from well 24.

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Well **29** 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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PRODUCT DESCRIPTION

DQB1*05 SSP subtyping

CONTENT

The primer set contains 5'- and 3'-primers for identifying the DQB1*05:01 to DQB1*05:96 alleles.

Please note that DQB1 amplifications usually are somewhat less pronounced than e.g. DRB and DQA1 amplifications even when using the same DNA preparation and exactly the same experimental procedures.

PLATE LAYOUT

Each test consists of 29 PCR reactions in a 32 well PCR plate. Wells 30 to 32 are empty

1	2	3	4	5	6	7	8
9	10	11	12	13	14	15	16
17	18	19	20	21	22	23	24
25	26	27	28	NC	empty	empty	empty

The 32 well cut PCR plate is marked with ‘DQ5’ in silver gray ink.

Well No. 1 is marked with the Lot No. ‘1D6’.

Wells 1 to 28 – DQB1*05 high resolution primers.

Well 29 – 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 32 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 DQB1 alleles, non-DQB1*05 alleles will be amplified by primer mixes 4, 6, 11, 12, 14 to 17, 20, 22 and 24. For further details see Specificity Table.

UNIQUELY IDENTIFIED ALLELES

All the DQB1*05 alleles, i.e. **DQB1*05:01 to DQB1*05:96**, recognized by the HLA Nomenclature Committee in August 2015^{1,2} will be amplified by the primers in the DQB1*05 subtyping kit.

The DQB1*05 kit enables separation of the confirmed DQB1*05 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 DQB1*05 alleles is listed below.

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The DQB1*05 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 DQB1*05 alleles can be distinguished by the different sizes of the specific PCR product:

Alleles	Primer mix
DQB1*05:27, 05:29	8

The DQB1*05 subtyping kit cannot distinguish the silent mutations in the DQB1*05:01:01:01-05:01:08 and DQB1*05:01:11-05:01:20 alleles, the DQB1**05:01:09-05:01:10 alleles, the DQB1*05:02:01 and 05:02:03-05:02:13 alleles, the DQB1*05:03:01:01-05:03:05, 05:03:07-05:03:13 and 05:03:15-05:03:16 alleles, the DQB1*05:05:01-05:05:02 alleles, the DQB1*05:06:01-05:06:02 or the DQB1*05:11:01-05:11:02 alleles.

¹DQB1 alleles listed on the IMGT/HLA web page 2015-August-11, release 3.21.1, 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>.

RESOLUTION IN HOMO- AND HETEROZYGOTES

Results file with resolution in DQB1*05 homo- and heterozygotes is available upon request.

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ALLELE CONFIRMATION STATUS

Allele	Status ¹	Allele	Status ¹	Allele	Status ¹
DQB1*05:01:01:01	Confirmed	DQB1*05:03:15	Unconfirmed	DQB1*05:49	Confirmed
DQB1*05:01:01:02	Unconfirmed	DQB1*05:03:16	Confirmed	DQB1*05:50	Unconfirmed
DQB1*05:01:01:03	Unconfirmed	DQB1*05:04	Confirmed	DQB1*05:51	Unconfirmed
DQB1*05:01:02	Unconfirmed	DQB1*05:05:01	Unconfirmed	DQB1*05:52	Confirmed
DQB1*05:01:03	Unconfirmed	DQB1*05:05:02	Unconfirmed	DQB1*05:53	Unconfirmed
DQB1*05:01:04	Confirmed	DQB1*05:06:01	Unconfirmed	DQB1*05:54	Unconfirmed
DQB1*05:01:05	Confirmed	DQB1*05:06:02	Confirmed	DQB1*05:55	Unconfirmed
DQB1*05:01:06	Unconfirmed	DQB1*05:07	Unconfirmed	DQB1*05:56	Unconfirmed
DQB1*05:01:07	Unconfirmed	DQB1*05:08	Unconfirmed	DQB1*05:57	Confirmed
DQB1*05:01:08	Confirmed	DQB1*05:09	Unconfirmed	DQB1*05:58	Unconfirmed
DQB1*05:01:09	Unconfirmed	DQB1*05:10	Confirmed	DQB1*05:59	Unconfirmed
DQB1*05:01:10	Unconfirmed	DQB1*05:11:01	Unconfirmed	DQB1*05:60	Unconfirmed
DQB1*05:01:11	Unconfirmed	DQB1*05:11:02	Confirmed	DQB1*05:61	Unconfirmed
DQB1*05:01:12	Unconfirmed	DQB1*05:12	Unconfirmed	DQB1*05:62	Unconfirmed
DQB1*05:01:13	Unconfirmed	DQB1*05:13	Unconfirmed	DQB1*05:63	Confirmed
DQB1*05:01:14	Unconfirmed	DQB1*05:14	Unconfirmed	DQB1*05:64	Unconfirmed
DQB1*05:01:15	Unconfirmed	DQB1*05:15	Unconfirmed	DQB1*05:65	Unconfirmed
DQB1*05:01:16	Unconfirmed	DQB1*05:16	Unconfirmed	DQB1*05:66	Unconfirmed
DQB1*05:01:17	Unconfirmed	DQB1*05:17	Unconfirmed	DQB1*05:67	Unconfirmed
DQB1*05:01:18	Unconfirmed	DQB1*05:18	Unconfirmed	DQB1*05:68	Unconfirmed
DQB1*05:01:19	Unconfirmed	DQB1*05:19	Confirmed	DQB1*05:69	Confirmed
DQB1*05:01:20	Unconfirmed	DQB1*05:20	Confirmed	DQB1*05:70	Unconfirmed
DQB1*05:02:01	Confirmed	DQB1*05:21	Unconfirmed	DQB1*05:71	Confirmed
DQB1*05:02:02	Unconfirmed	DQB1*05:22	Unconfirmed	DQB1*05:72	Confirmed
DQB1*05:02:03	Unconfirmed	DQB1*05:23	Confirmed	DQB1*05:73	Confirmed
DQB1*05:02:04	Unconfirmed	DQB1*05:24	Unconfirmed	DQB1*05:74	Unconfirmed
DQB1*05:02:05	Unconfirmed	DQB1*05:25	Unconfirmed	DQB1*05:75	Confirmed
DQB1*05:02:06	Unconfirmed	DQB1*05:26	Confirmed	DQB1*05:76	Unconfirmed
DQB1*05:02:07	Confirmed	DQB1*05:27	Confirmed	DQB1*05:77	Unconfirmed
DQB1*05:02:08	Unconfirmed	DQB1*05:28	Confirmed	DQB1*05:78	Unconfirmed
DQB1*05:02:09	Unconfirmed	DQB1*05:29	Unconfirmed	DQB1*05:79	Confirmed
DQB1*05:02:10	Unconfirmed	DQB1*05:30	Unconfirmed	DQB1*05:80	Confirmed
DQB1*05:02:11	Unconfirmed	DQB1*05:31	Unconfirmed	DQB1*05:81	Unconfirmed
DQB1*05:02:12	Unconfirmed	DQB1*05:32	Unconfirmed	DQB1*05:82	Unconfirmed
DQB1*05:02:13	Unconfirmed	DQB1*05:33	Unconfirmed	DQB1*05:83	Unconfirmed
DQB1*05:03:01:01	Confirmed	DQB1*05:34	Confirmed	DQB1*05:84	Unconfirmed
DQB1*05:03:01:02	Unconfirmed	DQB1*05:35	Unconfirmed	DQB1*05:85	Unconfirmed
DQB1*05:03:02	Confirmed	DQB1*05:36	Unconfirmed	DQB1*05:86	Unconfirmed
DQB1*05:03:03	Unconfirmed	DQB1*05:37	Unconfirmed	DQB1*05:87Q	Unconfirmed
DQB1*05:03:04	Unconfirmed	DQB1*05:38	Unconfirmed	DQB1*05:88	Confirmed
DQB1*05:03:05	Unconfirmed	DQB1*05:39	Unconfirmed	DQB1*05:89	Unconfirmed
DQB1*05:03:06	Unconfirmed	DQB1*05:40	Unconfirmed	DQB1*05:90N	Unconfirmed
DQB1*05:03:07	Unconfirmed	DQB1*05:41N	Unconfirmed	DQB1*05:91	Unconfirmed
DQB1*05:03:08	Confirmed	DQB1*05:42	Unconfirmed	DQB1*05:92	Unconfirmed
DQB1*05:03:09	Unconfirmed	DQB1*05:43	Confirmed	DQB1*05:93	Unconfirmed
DQB1*05:03:10	Unconfirmed	DQB1*05:44	Confirmed	DQB1*05:94	Unconfirmed
DQB1*05:03:11	Unconfirmed	DQB1*05:45	Unconfirmed	DQB1*05:95	Unconfirmed
DQB1*05:03:12	Unconfirmed	DQB1*05:46	Unconfirmed	DQB1*05:96	Unconfirmed
DQB1*05:03:13	Unconfirmed	DQB1*05:47	Unconfirmed		
DQB1*05:03:14	Confirmed	DQB1*05:48	Unconfirmed		

¹ Allele status “confirmed” or “unconfirmed” as listed on the IMGT/HLA web page 2015-August-11, release 3.21.1, www.ebi.ac.uk/imgt/hla.

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SPECIFICITY TABLE

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DQB1*05 SSP subtyping

Specificities and sizes of the PCR products of the 28+1 primer mixes used for DQB1*05 SSP subtyping

Primer Mix	Size of spec. PCR product ¹	Size of control band ²	Amplified DQB1*05 alleles ³	Other amplified DQB1 alleles ⁴
1	225 bp	515 bp	*05:01:01:01-05:20, 05:22-05:33, 05:35-05:43, 05:45-05:53, 05:55-05:59, 05:61-05:71, 05:74-05:81, 05:84-05:96	
2	135 bp	430 bp	*05:01:01:01-05:01:20, 05:07, 05:11:01-05:12, 05:18, 05:20, 05:22, 05:25, 05:27, 05:29-05:32, 05:44-05:45, 05:48-05:49, 05:51, 05:54-05:55, 05:61-05:63, 05:68-05:76, 05:80-05:81, 05:84, 05:88-05:89, 05:92-05:93, 05:95	
3 ⁵	120 bp	430 bp	*05:02:01-05:02:13, 05:05:01-05:05:02, 05:14, 05:17, 05:19, 05:26, 05:33-05:37, 05:46-05:47, 05:53, 05:57, 05:59, 05:65, 05:79, 05:83, 05:86-05:87Q, 05:90N, 05:94	
4 ⁵	100 bp	515 bp	*05:01:09-05:01:10, 05:02:02, 05:03:01:01-05:03:13, 05:03:15-05:03:16, 05:06:01-05:06:02, 05:08-05:10, 05:13, 05:15-05:16, 05:24, 05:28, 05:38-05:42, 05:50, 05:56, 05:58, 05:60, 05:64, 05:66-05:67, 05:78, 05:85, 05:91, 05:96	*04:28, 06:156, 06:162, 06:169
5 ⁵	120 bp 185 bp	430 bp	*05:04, 05:52, 05:77 *05:10	
6	185 bp	430 bp	*05:05:01-05:05:02, 05:11:01-05:11:02, 05:66	*06:129, 06:146:01
7	185 bp 245 bp	430 bp	*05:06:01-05:07, 05:50 *05:52	
8	135 bp 190 bp	430 bp	*05:27, 05:87Q *05:09, 05:29	
9	130 bp	430 bp	*05:08, 05:18, 05:36	
10 ⁵	115 bp 195 bp	430 bp	*05:23 *05:12, 05:71	
11 ⁵	100 bp 150 bp 190 bp	515 bp	*05:13, 05:32, 05:42, 05:45 *05:35 *05:96	*03:21
12 ⁵	120 bp 150 bp 195 bp	430 bp	*05:25 *05:14, 05:84 *05:41N, 05:90, 05:96	*06:103
13	145 bp 180 bp 220 bp	430 bp	*05:40 *05:15, 05:33, 05:49 *05:34, 05:44	
14	145 bp 160 bp 200 bp	430 bp	*05:40 *05:69 *05:16, 05:73	*06:156, 06:162, 06:169

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15 ^{5,6}	65 bp 105 bp 135 bp	430 bp	*05:03:06, 05:03:14 *05:17 *05:37	*03:03:05
16	155 bp 195 bp	430 bp	*05:20 *05:47	*06:105
17 ⁵	125 bp 195 bp	430 bp	*05:25, 05:31, 05:46 *05:41N, 05:90N	*06:111
18 ⁵	110 bp 180 bp 215 bp	430 bp	*05:88 *05:24 *05:72	
19	200 bp 225 bp	430 bp	*05:28, 05:30 *05:21, 05:60	
20 ⁵	110 bp 270 bp	430 bp	*05:32, 05:42, 05:57 *05:38, 05:62	*06:146:01
21	135 bp 165 bp 200 bp 230 bp	430 bp	*05:37 *05:63 *05:39 *05:26, 05:82	
22 ⁵	70 bp	430 bp	*05:03:14, 05:43	*03:10:02, 03:183, 04:02:07 ^w , 06:01:12, 06:51:01, 06:66, 06:96, 06:99:01, 06:172
23 ⁵	120 bp	430 bp	*05:19, 05:22	
24	150 bp 185 bp	430 bp	*05:71 *05:80	*06:89
25 ⁵	115 bp	430 bp	*05:75	
26	185 bp	430 bp	*05:78	
27	280 bp	430 bp	*05:79	
28	135 bp	430 bp	*05:56	
29 ⁷	-	-	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 DQB1*05 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

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band often decreases.

³For several DQB1 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 DQB1 alleles, non-DQB1*05 alleles will be amplified by primer mixes 4, 6, 11, 12, 14 to 17, 20, 22 and 24.

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

⁶Primer mix 15 may have tendency of unspecific amplification.

⁷Primer mix 29 contains a negative control, which will amplify more than 95% of HLA amplicons as well as the amplicons generated by the control primer pairs matching the human growth hormone gene. HLA-specific PCR product sizes range from 75 to 200 base pairs and the PCR product generated by the HGH positive control primer pair is 430 base pairs.

'w', might be weakly amplified.

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PRIMER SPECIFICATION

Well No.	1	2	3	4	5	6	7	8	9	10	11	12
Length of spec. PCR product	225	135	120	100	120	185	185	135	130	115	100	120
					185		245	190		195	150	150
											190	195
Length of int. pos. control ¹	515	430	430	515	430	430	430	430	430	430	515	430
5'-primer(s) ²	26(173) 5'-ggg ^{3'}	26(173) 5'-ggg ^{3'}	29(184) 5'-gAC ^{3'}	29(184) 5'-gAC ^{3'}	29(184) 5'-gAT ^{3'}	38(210) 5'-gCg ^{3'}	19(154) 5'-ACA ^{3'}	36(205) 5'-Agg ^{3'}	135(501) 5'-gAT ^{3'}	26(173) 5'-ggg ^{3'}	13(136) 5'-gCC ^{3'}	30(185) 5'-ACC ^{3'}
	26(173) 5'-ggg ^{3'}	26(173) 5'-ggg ^{3'}			135(500) 5'-TgA ^{3'}	38(210) 5'-gCA ^{3'}	39(212) 5'-gCA ^{3'}	138(511) 5'-A ^{3'}			119(454) 5'-Tgg ^{3'}	118(449) 5'-CTA ^{3'}
							39(214) 5'-gCC ^{3'}	139(512) 5'-gAT ^{3'}			132(493) 5'-TTT ^{3'}	119(454) 5'-Tgg ^{3'}
							40(216) 5'-TTg ^{3'}				146(533) 5'-CCg ^{3'}	133(494) 5'-TCA ^{3'}
											150(547) 5'-ACA ^{3'}	
3'-primer(s) ³	87(356) 5'-ggT ^{3'}	57(266) 5'-CAA ^{3'}	56(265) 5'-gCT ^{3'}	47(237) 5'-CgA ^{3'}	56(265) 5'-gCT ^{3'}	86(353) 5'-ACg ^{3'}	87(356) 5'-ggT ^{3'}	86(353) 5'-ACg ^{3'}	163(585) 5'-gTT ^{3'}	51(248) 5'-gCT ^{3'}	32(191) 5'-TAC ^{3'}	57(266) 5'-CAA ^{3'}
	87(356) 5'-ggT ^{3'}		58(270) 5'-TCC ^{3'}	47(237) 5'-CgA ^{3'}	182(642) 5'-ggT ^{3'}			169(604) 5'-gAC ^{3'}	167(596) 5'-CAT ^{3'}	73(316) 5'-Cgg ^{3'}	169(604) 5'-gAC ^{3'}	169(604) 5'-gAC ^{3'}
				48(240) 5'-gCg ^{3'}							77(328) 5'-CAA ^{3'}	
				50(246) 5'-gTg ^{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	145	65	155	125	110	200	110	135	70	120	150
	180	160	105	195	195	180	225	270	165			185
			135			215			200			
									230			
Length of int. pos. control ¹	430	430	430	430	430	430	430	430	430	430	430	430
5'-primer(s) ²	29(184) 5'-gAC ^{3'}	29(184) 5'-gAC ^{3'}	49(243) 5'-gCA ^{3'}	19(154) 5'-ACC ^{3'}	30(185) 5'-ACC ^{3'}	29(184) 5'-gAC ^{3'}	25(170) 5'-gCA ^{3'}	9(122) 5'-gTT ^{3'}	23(166) 5'-gCT ^{3'}	47(237) 5'-TAC ^{3'}	26(173) 5'-ggg ^{3'}	38(209) 5'-CgT ^{3'}
			135(501) 5'-gAT ^{3'}	135(500) 5'-TgA ^{3'}	118(449) 5'-CTA ^{3'}		25(170) 5'-gCT ^{3'}	146(533) 5'-CCg ^{3'}	25(172) 5'-ggA ^{3'}			
				140(517) 5'-CCA ^{3'}			30(187) 5'-ACC ^{3'}	146(535) 5'-CCg ^{3'}	33(195) 5'-AAg ^{3'}			
							37(208) 5'-ACA ^{3'}		45(230) 5'-ggA ^{3'}			
									135(501) 5'-gAT ^{3'}			
3'-primer(s) ³	65(290) 5'-CCC ^{3'}	65(290) 5'-CCC ^{3'}	57(266) 5'-CgT ^{3'}	57(266) 5'-CAA ^{3'}	57(266) 5'-CAA ^{3'}	52(251) 5'-gCA ^{3'}	87(356) 5'-ggT ^{3'}	86(353) 5'-ACg ^{3'}	87(356) 5'-ggT ^{3'}	56(265) 5'-gTC ^{3'}	49(242) 5'-CCT ^{3'}	73(316) 5'-Cgg ^{3'}
	72(311) 5'-CCT ^{3'}	69(304) 5'-CCT ^{3'}	157(566) 5'-ggg ^{3'}	185(652) 5'-CAT ^{3'}	169(604) 5'-gAC ^{3'}	76(323) 5'-TgC ^{3'}		169(604) 5'-gAC ^{3'}	166(595) 5'-ACA ^{3'}		54(257) 5'-gCT ^{3'}	86(353) 5'-ACC ^{3'}
	74(317) 5'-CCA ^{3'}	82(341) 5'-AgC ^{3'}	166(595) 5'-ACA ^{3'}			87(358) 5'-gCC ^{3'}						
	80(335) 5'-gTT ^{3'}	87(356) 5'-ggA ^{3'}										
	88(361) 5'-CCT ^{3'}											
Well No.	13	14	15	16	17	18	19	20	21	22	23	24

101.211-24 – including *Taq* pol., IFU-01
101.211-24u – without *Taq* pol., IFU-02

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Lot No.: **1D6**

Lot-specific information

www.olerup-ssp.com

Well No.	25	26	27	28
Length of spec. PCR product	115	185	280	135
Length of int. pos. control ¹	430	430	430	430
5'-primer(s) ²	31(190) 5'-TCC 3'	115(442) 5'-TgA 3'	7(118) 5'-TCA 3'	135(500) 5'-TgA 3'
3'-primer(s) ³	57(266) 5'-CAA 3'	163(586) 5'-AgA 3'	87(356) 5'-ggT 3'	166(594) 5'-CgA 3'
Well No.	25	26	27	28

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.

101.211-24 – including *Taq* pol., IFU-01
101.211-24u – without *Taq* pol., IFU-02

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Lot No.: **1D6**

Lot-specific information

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CELL LINE VALIDATION SHEET																			
DQB1*05 SSP subtyping kit																			
				Well ²															
				1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
				201560001	201560002	201560003	201560004	201560005	201560006	201560007	201560008	201560009	201560010	201560011	201560012	201560013	201560014	201560015	201560016
IHWC cell line¹		DQB1																	
1	9001 SA	*05:01		+	+	-	-	-	-	-	-	-	-	-	-	-	-	-	-
2	9280 LK707	*06:01	*02:02	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
3	9011 E4181324	*06:01		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
4	9275 GU373	*02:01		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
5	9009 KAS011	*05:02		+	-	+	-	-	-	-	-	-	-	-	-	-	-	-	-
6	9353 SM	*03:02	*06:01	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
7	9020 QBL	*02:01		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
8	9025 DEU	*03:01		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
9	9026 YAR	*03:02		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
10	9107 LKT3	*04:01		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
11	9051 PITOUT	*02:02		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
12	9052 DBB	*03:03		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
13	9004 JESTHOM	*05:01		+	+	-	-	-	-	-	-	-	-	-	-	-	-	-	-
14	9071 OLGa	*04:02		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
15	9075 DKB	*03:03		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
16	9037 SWEIG007	*03:01		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
17	9282 CTM3953540	*02:01	*06:03	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
18	9257 32367	*06:02	*02:02	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
19	9038 BM16	*03:01		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
20	9059 SLE005	*06:04		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
21	9064 AMALA	*03:01		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
22	9056 KOSE	*05:03	*06:04	+	-	-	+	-	-	-	-	-	-	-	-	-	-	-	-
23	9124 IHL	*05:03	*06:01	+	-	-	+	-	-	-	-	-	-	-	-	-	-	-	-
24	9035 JBUSH	*03:01		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
25	9049 IBW9	*02:02		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
26	9285 WT49	*02:01		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
27	9191 CH1007	*04:01	*05:01	+	+	-	-	-	-	-	-	-	-	-	-	-	-	-	-
28	9320 BEL5GB	*02:02	*03:01	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
29	9050 MOU	*02:02		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
30	9021 RSH	*04:02		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
31	9019 DUCAF	*02:01		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
32	9297 HAG	*03:01		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
33	9098 MT14B	*03:02		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
34	9104 DHIF	*03:01		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
35	9302 SSTO	*03:05		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
36	9024 KT17	*03:02		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
37	9065 HHKB	*06:03		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
38	9099 LZL	*03:01		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
39	9315 CML	*02:01	*03:01	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
40	9134 WHONP199	*02:02	*03:03	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
41	9055 H0301	*06:09		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
42	9066 TAB089	*06:01		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
43	9076 T7526	*03:03		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
44	9057 TEM	*05:03		+	-	-	+	-	-	-	-	-	-	-	-	-	-	-	-
45	9239 SHJO	*02:02		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
46	9013 SCHU	*06:02		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
47	9045 TUBO	*03:01		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
48	9303 TER-ND	*05:01		+	+	-	-	-	-	-	-	-	-	-	-	-	-	-	-



101.211-24 – including *Taq* pol., IFU-01
101.211-24u – without *Taq* pol., IFU-02

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Lot No.: **1D6**

Lot-specific information

www.olerup-ssp.com

CELL LINE VALIDATION SHEET																
DQB1*05 SSP subtyping kit																
				Well ²												
				17	18	19	20	21	22	23	24	25	26	27	28	
				201560017	201560018	201560019	201560020	201560021	201560022	201560023	201560024	201560025	201560026	201560027	201560028	
			Production No.	IHWC cell line ¹		DQB1										
1	9001	SA		*05:01			-	-	-	-	-	-	-	-	-	
2	9280	LK707		*06:01	*02:02		-	-	-	-	-	-	-	-	-	
3	9011	E4181324		*06:01			-	-	-	-	-	-	-	-	-	
4	9275	GU373		*02:01			-	-	-	-	-	-	-	-	-	
5	9009	KAS011		*05:02			-	-	-	-	-	-	-	-	-	
6	9353	SM		*03:02	*06:01		-	-	-	-	-	-	-	-	-	
7	9020	QBL		*02:01			-	-	-	-	-	-	-	-	-	
8	9025	DEU		*03:01			-	-	-	-	-	-	-	-	-	
9	9026	YAR		*03:02			-	-	-	-	-	-	-	-	-	
10	9107	LKT3		*04:01			-	-	-	-	-	-	-	-	-	
11	9051	PITOUT		*02:02			-	-	-	-	-	-	-	-	-	
12	9052	DBB		*03:03			-	-	-	-	-	-	-	-	-	
13	9004	JESTHOM		*05:01			-	-	-	-	-	-	-	-	-	
14	9071	OLGA		*04:02			-	-	-	-	-	-	-	-	-	
15	9075	DKB		*03:03			-	-	-	-	-	-	-	-	-	
16	9037	SWEIG007		*03:01			-	-	-	-	-	-	-	-	-	
17	9282	CTM3953540		*02:01	*06:03		-	-	-	-	-	-	-	-	-	
18	9257	32367		*06:02	*02:02		-	-	-	-	-	-	-	-	-	
19	9038	BM16		*03:01			-	-	-	-	-	-	-	-	-	
20	9059	SLE005		*06:04			-	-	-	-	-	-	-	-	-	
21	9064	AMALA		*03:01			-	-	-	-	-	-	-	-	-	
22	9056	KOSE		*05:03	*06:04		-	-	-	-	-	-	-	-	-	
23	9124	IHL		*05:03	*06:01		-	-	-	-	-	-	-	-	-	
24	9035	JBUSH		*03:01			-	-	-	-	-	-	-	-	-	
25	9049	IBW9		*02:02			-	-	-	-	-	-	-	-	-	
26	9285	WT49		*02:01			-	-	-	-	-	-	-	-	-	
27	9191	CH1007		*04:01	*05:01		-	-	-	-	-	-	-	-	-	
28	9320	BEL5GB		*02:02	*03:01		-	-	-	-	-	-	-	-	-	
29	9050	MOU		*02:02			-	-	-	-	-	-	-	-	-	
30	9021	RSH		*04:02			-	-	-	-	-	-	-	-	-	
31	9019	DUCAF		*02:01			-	-	-	-	-	-	-	-	-	
32	9297	HAG		*03:01			-	-	-	-	-	-	-	-	-	
33	9098	MT14B		*03:02			-	-	-	-	-	-	-	-	-	
34	9104	DHIF		*03:01			-	-	-	-	-	-	-	-	-	
35	9302	SSTO		*03:05			-	-	-	-	-	-	-	-	-	
36	9024	KT17		*03:02			-	-	-	-	-	-	-	-	-	
37	9065	HHKB		*06:03			-	-	-	-	-	-	-	-	-	
38	9099	LZL		*03:01			-	-	-	-	-	-	-	-	-	
39	9315	CML		*02:01	*03:01		-	-	-	-	-	-	-	-	-	
40	9134	WHONP199		*02:02	*03:03		-	-	-	-	-	-	-	-	-	
41	9055	H0301		*06:09			-	-	-	-	-	-	-	-	-	
42	9066	TAB089		*06:01			-	-	-	-	-	-	-	-	-	
43	9076	T7526		*03:03			-	-	-	-	-	-	-	-	-	
44	9057	TEM		*05:03			-	-	-	-	-	-	-	-	-	
45	9239	SHJO		*02:02			-	-	-	-	-	-	-	-	-	
46	9013	SCHU		*06:02			-	-	-	-	-	-	-	-	-	
47	9045	TUBO		*03:01			-	-	-	-	-	-	-	-	-	
48	9303	TER-ND		*05:01			-	-	-	-	-	-	-	-	-	

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



101.211-24 – including *Taq* pol., IFU-01
101.211-24u – without *Taq* pol., IFU-02

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Lot No.: 1D6

Lot-specific information

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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 5 to 28 were available. The specificities of the primers in primer solutions 5, 6, 8, 11, 14 to 16, 20 to 22 and 24 were tested by separately adding one 5'-primer, respectively one 3'-primer. In primer solutions 7, 12, 17, 19, 25 and 27 it was only possible to test the 3'-primer, the 5'-primers were not possible to test. In primer solutions 9, 10, 13, 18, 23, 26 and 28 it was only possible to test the 5'-primer, the 3'-primers were not possible to test.

In primer solutions 1, 2, 8, 11, 16, 20 and 21 one, two or three 5'-primers were not possible to test, and in primer solutions 1, 3 to 5, 11, 14 to 16, 21 and 24 one or two 3'-primers were not possible to test.

101.211-24 – including *Taq* pol., IFU-01
101.211-24u – without *Taq* pol., IFU-02

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Lot No.: **1D6**

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101.211-24 – including *Taq pol.*, IFU-01
101.211-24u – without *Taq pol.*, IFU-02

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Lot No.: **1D6**

Lot-specific information

www.olerup-ssp.com

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