

101.221-12 – including *Taq* pol., IFU-01101.221-12u – without *Taq* pol., IFU-02Visit www.olerup-ssp.com for

“Instructions for Use” (IFU)

Lot No.: **60S**

Lot-specific information

www.olerup-ssp.com**Olerup SSP® DQB1 high resolution for frequent alleles**

Product number:	101.221-12 – including <i>Taq</i> polymerase 101.221-12u – without <i>Taq</i> polymerase
Lot number:	60S
Expiry date:	2016-February-01
Number of tests:	12 tests
Number of wells per test:	63+ 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.60S.

**CHANGES COMPARED TO THE PREVIOUS OLERUP SSP®
DQB1 HIGH RESOLUTION LOT (55R)**

The DQB1 high resolution specificity and interpretation tables have been updated with the DQB1 alleles described since the previous *Olerup SSP®* DQB1 high resolution lot was made (**Lot No. 55R**).

The Lot-specific information for DQB1 high resolution for frequent alleles including and without *Taq* polymerase is described in one common Product Insert.

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	3'-primer added for the DQB1*02:01:07 allele.
7	-	Added	3'-primer added for the DQB1*03:01:08 allele.
8	-	Added	3'-primer added for the DQB1*02:01:07 allele.
10	Added	-	5'-primer added for the DQB1*02:11 allele.
17	-	Added, added	3'-primers added for the DQB1*02:10 and DQB1*03:47 alleles.
41	-	Added	3'-primer added for the DQB1*03:45 allele.
42	-	Added	3'-primer added for the DQB1*02:08 allele

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“Instructions for Use” (IFU)Lot No.: **60S**

Lot-specific information

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50	Added	-	5'-primer added for the DQB1*03:46 allele
51	-	Added	3'-primer added for the DQB1*02:09 allele
54	-	Added	3'-primer added for the DQB1*05:17 allele.

Change in revision R01 compared to R00:

1. This lot is based on DQB1 alleles described in January 2013, database 3.11.0. This has been corrected in the section “Uniquely identified alleles”.

Change in revision R02 compared to R01:

1. Primer mix 52 does not amplify the DQB1*06:49 allele. This has been corrected in the Specificity and Interpretation tables.

Change in revision R03 compared to R02:

1. Primer mix 41 does not amplify the DQB1*03:22 allele. This has been corrected in the Specificity and Interpretation Tables.

Change in revision R04 compared to R03:

1. Primer mix 2 may have a tendency of unspecific amplifications. A footnote has been added in the Specificity Table.

Change in revision R05 compared to R04:

1. Primer mixes 12, 31 and 38 may have a tendency of unspecific amplifications. Footnotes have been added in the Specificity Table.

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“Instructions for Use” (IFU)Lot No.: **60S**

Lot-specific information

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Well 64 contains Negative Control primer pairs, that will amplify more than 95% of the *Olerup* SSP® HLA Class I, DRB, DQB1 and DPB1 amplicons as well as the amplicons generated by control primer pairs.

PCR product sizes range from 75 to 430 base pairs.

The PCR product generated by the control primer pair is 430 base pairs.

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

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

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

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Lot-specific information

www.olerup-ssp.com**PRODUCT DESCRIPTION****DQB1 SSP typing****CONTENT**

The primer set contains 5'- and 3'-primers for identifying the DQB1*02:01 to DQB1*06:52 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 64 PCR reactions in a 64 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	48
49	50	51	52	53	54	55	56
57	58	59	60	61	62	63	64

Wells 1 to 63 – DQB1 primers.

Well 64 – Negative Control.

The 64 well cut PCR plate is marked with ‘DQB1 “HIGH”’ in silver/gray ink.

Well No. 1 is marked with the Lot No. ‘60S’.

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.

INTERPRETATION

Only DQB1 alleles will be amplified by the DQB1 high resolution for frequent alleles typing kit. Thus, the interpretation of DQB1 high resolution for frequent alleles typings is not influenced by the DQB2 or DQB3 genes or other HLA class II genes.

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Lot No.: 60S

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UNIQUELY IDENTIFIED ALLELES

All the phenotypically different DQB1 alleles, i.e. DQB1*02:01 to 02:11, DQB1*03:01 to 03:47, DQB1*04:01 to 04:09, DQB1*05:01 to 05:18 and DQB1*06:01 to 06:52, recognized by the HLA Nomenclature Committee in January 2013¹ will give rise to unique amplification patterns by the primers in the DQB1 high resolution for frequent alleles typing kit².

The DQB1*06:35 and 06:45 alleles may be distinguished by the different sizes of the specific PCR products generated by primer mix 35.

The DQB1 typing kit cannot distinguish the following silent mutations: the DQB1*02:01:01-02:01:08 alleles, the DQB1*02:02:01-02:02:02 alleles, the DQB1*03:01:01-03:01:02 and 03:01:05-03:01:07 alleles, the DQB1*03:02:01-03:02:05 alleles, the DQB1*03:03:02-03:03:04 alleles, the DQB1*03:05:01-03:05:04 alleles, the DQB1*04:01:01-04:01:02 alleles, the DQB1*04:02:01-04:02:02 alleles, the DQB1*05:01:01-05:01:03 alleles, the DQB1*05:02:01 and 05:02:03 alleles, the DQB1*05:03:01-05:03:05 alleles, the DQB1*06:01:01-06:01:06 alleles and the DQB1*06:04:01 and 06:04:03 alleles.

¹DQB1 alleles listed on the IMGT/HLA web page 2013-January-15, release 3.11.0, www.ebi.ac.uk/imgt/hla.

²This lot of the DQB1 typing kit cannot distinguish the DQB1*03:01:01-03:01:02 and 03:01:05-03:01:07 alleles and the DQB1*03:22 alleles.

RESOLUTION IN HOMO- AND HETEROZYGOTES

A total of 415 alleles generate 148 amplification patterns that can be combined in 11026 homozygous and heterozygous combinations. 1461 of these genotypes do not give rise to unique amplification patterns. The different lengths of the specific PCR products were not considered in these calculations.

Table with 10 columns of dashes representing alleles and 10 columns of asterisks representing PCR products. The table lists various combinations of alleles and their corresponding PCR product sizes.



Product Insert

101.221-12 – including *Taq* pol., IFU-01
101.221-12u – without *Taq* pol., IFU-02

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Lot No.: 60S	Lot-specific information	www.olerup-ssp.com
----	----	*06:13:01, *06:19 = *06:16, *06:19
----	----	*06:13:01, *06:33 = *06:16, *06:33
----	----	*06:13:01, *06:24 = *06:16, *06:24
----	----	*06:20, *06:49 = *06:35, *06:49
----	----	*06:20, *06:33 = *06:33, *06:35
----	----	*06:20, *06:24 = *06:24, *06:35
----	----	*06:13:01, *06:20 = *06:16, *06:20 = *06:16, *06:35
----	----	*06:15:01, *06:22:01 = *06:22:01, *06:46
----	----	*06:13:01, *06:37 = *06:16, *06:37
----	----	*06:14:02, *06:48 = *06:14:02, *06:51
----	----	*06:15:01, *06:48 = *06:15:01, *06:51 = *06:46, *06:48 = *06:46, *06:51
----	----	*06:16, *06:22:01 = *06:22:01, *06:48
----	----	*06:20, *06:37 = *06:35, *06:37
----	----	*06:27, *06:38 = *06:27, *06:52
----	----	*06:25, *06:38 = *06:25, *06:52
----	----	*06:08:01, *06:41 = *06:08:02, *06:41
----	----	*06:18, *06:38 = *06:18, *06:52
----	----	*06:11:01, *06:41 = *06:11:02, *06:41
----	----	*06:08:02, *06:25 = *06:21, *06:25
----	----	*06:08:01, *06:26N = *06:08:02, *06:26N
----	----	*06:08:01, *06:30 = *06:08:02, *06:30
----	----	*06:08:01, *06:40 = *06:08:02, *06:40
----	----	*06:08:01, *06:31 = *06:08:02, *06:31
----	----	*06:08:01, *06:32 = *06:08:02, *06:32
----	----	*06:14:01, *06:14:01 = *06:14:01, *06:14:02
----	----	*06:11:01, *06:40 = *06:11:02, *06:40
----	----	*06:11:01, *06:31 = *06:11:02, *06:31 = *06:31, *06:35
----	----	*06:08:01, *06:11:02 = *06:08:02, *06:11:02
----	----	*06:13:01, *06:14:02 = *06:14:02, *06:16
----	----	*06:13:01, *06:46 = *06:16, *06:46
----	----	*06:14:02, *06:20 = *06:14:02, *06:35
----	----	*06:20, *06:46 = *06:35, *06:46
----	----	*06:15:01, *06:33 = *06:15:01, *06:37 = *06:37, *06:46
----	----	*06:13:01, *06:15:01 = *06:15:01, *06:16
----	----	*06:22:01, *06:33 = *06:22:01, *06:37
----	----	*06:15:01, *06:20 = *06:15:01, *06:35
----	----	*06:05:01, *06:38 = *06:05:01, *06:52
----	----	*06:08:02, *06:36 = *06:21, *06:36
----	----	*06:08:02, *06:38 = *06:08:02, *06:52 = *06:21, *06:38 = *06:21, *06:52
----	----	*06:35, *06:38 = *06:35, *06:52
----	----	*06:11:01, *06:38 = *06:11:01, *06:52
----	----	*06:11:02, *06:33 = *06:26N, *06:33
----	----	*06:14:01, *06:48 = *06:14:01, *06:51
----	----	*06:11:02, *06:37 = *06:26N, *06:37 = *06:26N, *06:48
----	----	*03:17:01, *06:38 = *03:17:01, *06:52
----	----	*06:22:01, *06:38 = *06:22:01, *06:52
----	----	*06:08:01, *06:38 = *06:08:01, *06:52
----	----	*06:30, *06:38 = *06:30, *06:52 = *06:32, *06:38 = *06:32, *06:52
----	----	*06:07:01, *06:38 = *06:07:01, *06:52
----	----	*06:14:01, *06:41 = *06:14:02, *06:41
----	----	*06:13:01, *06:38 = *06:13:01, *06:52
----	----	*06:19, *06:38 = *06:19, *06:52
----	----	*06:24, *06:38 = *06:24, *06:52
----	----	*06:07:01, *06:08:01 = *06:07:01, *06:08:02 = *06:07:01, *06:21
----	----	*06:14:01, *06:26N = *06:14:02, *06:26N
----	----	*06:14:01, *06:40 = *06:14:02, *06:40



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Lot No.: 60S

Lot-specific information

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----	----	+++++	----	+++++	----	----	*06:14:01, *06:31 = *06:14:02, *06:31
----	----	+++++	----	+++++	----	----	*06:13:01, *06:14:01 = *06:14:01, *06:16
----	----	+++++	----	+++++	----	----	*06:14:01, *06:20 = *06:14:01, *06:35
----	----	+++++	----	+++++	----	----	*06:11:01, *06:14:01 = *06:11:02, *06:14:01 = *06:11:02, *06:14:02
----	----	+++++	+	----	+	----	*06:26N, *06:38 = *06:26N, *06:52
----	----	+++++	+	----	+	----	*06:14:02, *06:38 = *06:14:02, *06:52
----	----	+++++	+	----	+	----	*06:10, *06:38 = *06:10, *06:52
----	----	+++++	+	----	+	----	*06:11:02, *06:38 = *06:11:02, *06:52
----	----	+++++	+	----	+	----	*06:33, *06:38 = *06:33, *06:52
----	----	+++++	+	----	+	----	*06:16, *06:38 = *06:16, *06:52
----	----	+++++	+	----	+	----	*06:20, *06:38 = *06:20, *06:52
----	----	+++++	+	----	+	----	*06:31, *06:38 = *06:31, *06:52
----	----	+++++	+	----	+	----	*06:15:01, *06:38 = *06:15:01, *06:52
----	----	+++++	+	----	+	----	*06:37, *06:38 = *06:37, *06:52
----	----	+++++	+	----	+	----	*06:14:01, *06:38 = *06:14:01, *06:52
----	----	+++++	+	----	+	----	*06:13:01, *06:29 = *06:29, *06:29
----	----	+++++	+	----	+	----	*06:23, *06:48 = *06:23, *06:51
----	----	+++++	+	----	+	----	*06:13:01, *06:23 = *06:16, *06:23
----	----	+++++	+	----	+	----	*06:20, *06:23 = *06:23, *06:35
----	----	+++++	+	----	+	----	*06:08:01, *06:28 = *06:08:02, *06:28
----	----	+++++	+	----	+	----	*06:11:01, *06:28 = *06:11:02, *06:28
----	----	+++++	+	----	+	----	*06:08:02, *06:34 = *06:21, *06:34
----	----	+++++	+	----	+	----	*06:23, *06:38 = *06:23, *06:52
----	----	+++++	+	----	+	----	*06:14:01, *06:28 = *06:14:02, *06:28
----	----	+++++	+	----	+	----	*06:29, *06:38 = *06:29, *06:52
----	+++++	----	+	----	+	----	*03:14:01, *06:38 = *03:14:01, *06:52
----	----	+++++	+	----	+	----	*06:28, *06:38 = *06:28, *06:52
----	----	+++++	+	----	+	----	*05:03:01:01, *05:16 = *05:16, *05:16
----	----	+++++	+	----	+	----	*05:03:01:01, *05:15 = *05:15, *05:15
----	----	+++++	+	----	+	----	*05:03:01:01, *05:13 = *05:13, *05:13
----	----	+++++	+	----	+	----	*05:03:01:01, *05:10 = *05:10, *05:10
----	----	+++++	+	----	+	----	*05:03:01:01, *05:09 = *05:09, *05:09
----	----	+++++	+	----	+	----	*05:03:01:01, *05:04 = *05:03:01:01, *05:08 = *05:04, *05:08 = *05:08, *05:08
----	----	+++++	+	----	+	----	*05:02:01, *05:17 = *05:17, *05:17
----	----	+++++	+	----	+	----	*05:02:01, *05:02:02 = *05:02:01, *05:03:01:01 = *05:02:02, *05:02:02 = *05:02:02, *05:03:01:01
----	----	+++++	+	----	+	----	*05:01:01:01, *05:11 = *05:11, *05:11
----	----	+++++	+	----	+	----	*05:01:01:01, *05:12 = *05:12, *05:12
----	----	+++++	+	----	+	----	*05:01:01:01, *05:04 = *05:01:01:01, *05:18 = *05:04, *05:18 = *05:18, *05:18
----	----	+++++	+	----	+	----	*05:03:01:01, *05:06 = *05:06, *05:06
----	+++++	----	+	----	+	----	*03:44, *05:03:01:01 = *03:44, *05:13
----	+++++	----	+	----	+	----	*03:13, *06:04:01 = *03:13, *06:34
----	+++++	----	+	----	+	----	*03:16, *06:38 = *03:16, *06:52
----	+++++	----	+	----	+	----	*03:44, *06:38 = *03:44, *06:52
----	+++++	----	+	----	+	----	*03:13, *06:38 = *03:13, *06:52
----	----	+++++	+	----	+	----	*05:04, *05:16 = *05:08, *05:16
----	----	+++++	+	----	+	----	*05:04, *05:15 = *05:08, *05:15
----	----	+++++	+	----	+	----	*05:04, *05:13 = *05:08, *05:13
----	----	+++++	+	----	+	----	*05:04, *05:10 = *05:08, *05:10
----	----	+++++	+	----	+	----	*05:04, *05:09 = *05:08, *05:09
----	----	+++++	+	----	+	----	*05:02:01, *05:16 = *05:02:02, *05:16
----	----	+++++	+	----	+	----	*05:02:01, *05:15 = *05:02:02, *05:15
----	----	+++++	+	----	+	----	*05:02:01, *05:13 = *05:02:02, *05:13
----	----	+++++	+	----	+	----	*05:02:01, *05:10 = *05:02:02, *05:10 = *05:02:02, *05:17 = *05:03:01:01, *05:17 = *05:10, *05:17
----	----	+++++	+	----	+	----	*05:02:01, *05:09 = *05:02:02, *05:09
----	----	+++++	+	----	+	----	*05:02:02, *05:14 = *05:03:01:01, *05:14
----	----	+++++	+	----	+	----	*05:02:01, *05:08 = *05:02:02, *05:04 = *05:02:02, *05:08
----	----	+++++	+	----	+	----	*05:04, *05:11 = *05:11, *05:18



Product Insert

101.221-12 – including Taq pol., IFU-01

101.221-12u – without Taq pol., IFU-02

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Lot No.: 60S

Lot-specific information

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----	----	----	----	----	----	----	----	*03:07, *03:40 = *03:08, *03:15
----	----	----	----	----	----	----	----	*03:17:01, *03:37 = *03:20, *03:37
----	----	----	----	----	----	----	----	*03:17:01, *03:32 = *03:20, *03:32
----	----	----	----	----	----	----	----	*03:17:01, *03:45 = *03:20, *03:45
----	----	----	----	----	----	----	----	*03:17:01, *03:18 = *03:18, *03:20
----	----	----	----	----	----	----	----	*03:11, *03:17:01 = *03:11, *03:20
----	----	----	----	----	----	----	----	*03:07, *03:17:01 = *03:07, *03:20
----	----	----	----	----	----	----	----	*03:08, *03:17:01 = *03:08, *03:20
----	----	----	----	----	----	----	----	*03:17:01, *03:30 = *03:20, *03:30
----	----	----	----	----	----	----	----	*06:08:01, *06:44 = *06:08:02, *06:44
----	----	----	----	----	----	----	----	*06:11:01, *06:44 = *06:11:02, *06:44
----	----	----	----	----	----	----	----	*03:23, *06:04:01 = *03:23, *06:04:02
----	----	----	----	----	----	----	----	*06:12, *06:38 = *06:12, *06:52
----	----	----	----	----	----	----	----	*06:04:01, *06:08:01 = *06:04:02, *06:08:01 =
----	----	----	----	----	----	----	----	*06:04:02, *06:08:02 = *06:04:02, *06:21
----	----	----	----	----	----	----	----	*06:07:02, *06:17 = *06:07:02, *06:38 = *06:07:02,
----	----	----	----	----	----	----	----	*06:52
----	----	----	----	----	----	----	----	*06:04:01, *06:32 = *06:04:02, *06:32
----	----	----	----	----	----	----	----	*06:04:01, *06:07:01 = *06:04:02, *06:07:01 =
----	----	----	----	----	----	----	----	*06:04:02, *06:07:02
----	----	----	----	----	----	----	----	*05:16, *06:38 = *05:16, *06:52
----	----	----	----	----	----	----	----	*05:15, *06:38 = *05:15, *06:52
----	----	----	----	----	----	----	----	*05:13, *06:38 = *05:13, *06:52
----	----	----	----	----	----	----	----	*05:10, *06:38 = *05:10, *06:52
----	----	----	----	----	----	----	----	*05:09, *06:38 = *05:09, *06:52
----	----	----	----	----	----	----	----	*05:08, *06:38 = *05:08, *06:52
----	----	----	----	----	----	----	----	*05:03:01:01, *06:14:01 = *05:08, *06:14:01
----	----	----	----	----	----	----	----	*05:17, *06:38 = *05:17, *06:52
----	----	----	----	----	----	----	----	*05:02:02, *06:38 = *05:02:02, *06:52
----	----	----	----	----	----	----	----	*05:11, *06:38 = *05:11, *06:52
----	----	----	----	----	----	----	----	*05:12, *06:38 = *05:12, *06:52
----	----	----	----	----	----	----	----	*05:18, *06:38 = *05:18, *06:52
----	----	----	----	----	----	----	----	*05:01:01:01, *06:14:01 = *05:18, *06:14:01
----	----	----	----	----	----	----	----	*06:01:01, *06:38 = *06:01:01, *06:52
----	----	----	----	----	----	----	----	*06:03:02, *06:08:01 = *06:03:02, *06:08:02
----	----	----	----	----	----	----	----	*06:03:02, *06:11:01 = *06:03:02, *06:11:02
----	----	----	----	----	----	----	----	*04:04, *06:04:01 = *04:04, *06:04:02
----	----	----	----	----	----	----	----	*04:02:01, *06:10 = *04:03:01, *06:10
----	----	----	----	----	----	----	----	*04:05, *06:04:01 = *04:05, *06:04:02
----	----	----	----	----	----	----	----	*04:01:01, *06:10 = *04:06, *06:10
----	----	----	----	----	----	----	----	*04:01:01, *06:49 = *04:08, *06:49
----	----	----	----	----	----	----	----	*03:30, *03:34 = *03:30, *03:38
----	----	----	----	----	----	----	----	*03:30, *03:41 = *03:30, *04:03:02
----	----	----	----	----	----	----	----	*03:03:02:01, *06:05:01 = *03:31, *06:05:01
----	----	----	----	----	----	----	----	*03:03:02:01, *06:10 = *03:41, *06:10
----	----	----	----	----	----	----	----	*03:03:02:01, *06:20 = *03:31, *06:20
----	----	----	----	----	----	----	----	*03:41, *04:07 = *03:43, *04:06
----	----	----	----	----	----	----	----	*03:25, *06:08:01 = *03:25, *06:08:02
----	----	----	----	----	----	----	----	*03:25, *03:34 = *03:25, *03:38
----	----	----	----	----	----	----	----	*03:02:01, *06:42 = *03:45, *06:42
----	----	----	----	----	----	----	----	*03:02:01, *06:30 = *03:45, *06:30
----	----	----	----	----	----	----	----	*03:32, *06:13:01 = *03:32, *06:29
----	----	----	----	----	----	----	----	*03:45, *06:13:01 = *03:45, *06:29
----	----	----	----	----	----	----	----	*03:02:01, *06:24 = *03:45, *06:24
----	----	----	----	----	----	----	----	*03:01:08, *06:38 = *03:01:08, *06:52
----	----	----	----	----	----	----	----	*03:01:08, *03:12 = *03:03:02:01, *03:10 = *03:10,
----	----	----	----	----	----	----	----	*03:12
----	----	----	----	----	----	----	----	*03:03:02:01, *04:09 = *03:05:01, *04:09 = *04:09,
----	----	----	----	----	----	----	----	*04:09
----	----	----	----	----	----	----	----	*03:01:01:01, *03:44 = *03:01:03, *03:44 = *03:01:08,
----	----	----	----	----	----	----	----	*03:44
----	----	----	----	----	----	----	----	*03:01:01:01, *03:36 = *03:01:03, *03:36 = *03:01:08,
----	----	----	----	----	----	----	----	*03:36 = *03:36, *03:36



Product Insert

101.221-12 – including Taq pol., IFU-01

101.221-12u – without Taq pol., IFU-02

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----	----	----	----	----	----	*03:01:01:01, *03:46 = *03:01:03, *03:46 = *03:01:08, *03:46 = *03:46, *03:46
----	----	----	----	----	----	*03:01:01:01, *03:35 = *03:01:03, *03:35 = *03:01:08, *03:35 = *03:35, *03:35
----	----	----	----	----	----	*03:01:01:01, *03:22 = *03:01:03, *03:22 = *03:01:08, *03:22 = *03:22, *03:22
----	----	----	----	----	----	*03:01:01:01, *03:21 = *03:01:03, *03:21 = *03:01:08, *03:21 = *03:21, *03:21
----	----	----	----	----	----	*03:01:01:01, *03:29 = *03:01:03, *03:29 = *03:01:08, *03:29 = *03:29, *03:29
----	----	----	----	----	----	*03:01:01:01, *03:01:04 = *03:01:01:01, *05:04 = *03:01:03, *03:01:04 = *03:01:04, *03:01:04 = *03:01:04, *03:01:08 = *03:01:04, *05:04
----	----	----	----	----	----	*03:01:01:01, *03:13 = *03:01:01:01, *03:47 = *03:01:03, *03:13 = *03:01:08, *03:47 = *03:47, *03:47
----	----	----	----	----	----	*03:01:01:01, *03:10 = *03:01:03, *03:10
----	----	----	----	----	----	*03:01:01:01, *03:09 = *03:01:03, *03:09 = *03:01:08, *03:09 = *03:09, *03:09
----	----	----	----	----	----	*03:01:01:01, *03:16 = *03:01:03, *03:16
----	----	----	----	----	----	*03:01:01:01, *03:17:01 = *03:01:03, *03:17:01
----	----	----	----	----	----	*03:01:03, *03:14:01 = *03:04, *03:14:01
----	----	----	----	----	----	*03:01:01:01, *03:03:02:01 = *03:01:03, *03:03:02:01
----	----	----	----	----	----	*03:03:02:01, *03:19 = *03:19, *03:19
----	----	----	----	----	----	*05:06, *06:38 = *05:06, *06:52
----	----	----	----	----	----	*05:07, *06:38 = *05:07, *06:52
----	----	----	----	----	----	*02:01:01, *06:26N = *02:05, *06:26N
----	----	----	----	----	----	*02:07, *06:13:01 = *02:07, *06:29
----	----	----	----	----	----	*02:09, *06:13:01 = *02:09, *06:29
----	----	----	----	----	----	*02:05, *06:13:01 = *02:05, *06:29
----	----	----	----	----	----	*02:08, *06:13:01 = *02:08, *06:29
----	----	----	----	----	----	*02:01:01, *06:10 = *02:08, *06:10
----	----	----	----	----	----	*02:01:01, *06:33 = *02:05, *06:33
----	----	----	----	----	----	*02:07, *03:34 = *02:07, *03:38
----	----	----	----	----	----	*02:09, *03:34 = *02:09, *03:38
----	----	----	----	----	----	*02:05, *03:34 = *02:05, *03:38
----	----	----	----	----	----	*02:08, *03:39 = *02:09, *03:41
----	----	----	----	----	----	*02:08, *03:34 = *02:08, *03:38
----	----	----	----	----	----	*02:07, *03:17:01 = *02:07, *03:20
----	----	----	----	----	----	*02:09, *03:17:01 = *02:09, *03:20
----	----	----	----	----	----	*02:05, *03:17:01 = *02:05, *03:20
----	----	----	----	----	----	*02:08, *03:17:01 = *02:08, *03:20
----	----	----	----	----	----	*02:04, *06:13:01 = *02:04, *06:29
----	----	----	----	----	----	*02:04, *03:34 = *02:04, *03:38
----	----	----	----	----	----	*02:04, *03:17:01 = *02:04, *03:20
----	----	----	----	----	----	*02:02:01, *06:13:01 = *02:02:01, *06:29
----	----	----	----	----	----	*02:02:01, *03:39 = *02:06, *03:03:02:01 = *02:06, *03:39
----	----	----	----	----	----	*02:02:01, *03:34 = *02:02:01, *03:38
----	----	----	----	----	----	*02:02:01, *06:23 = *02:10, *06:23
----	----	----	----	----	----	*02:02:01, *03:17:01 = *02:02:01, *03:20
----	----	----	----	----	----	*03:17:01, *04:08 = *03:20, *04:08
----	----	----	----	----	----	*03:06, *03:34 = *03:06, *03:38
----	----	----	----	----	----	*03:06, *03:15 = *03:15, *03:25
----	----	----	----	----	----	*03:17:01, *04:03:01 = *03:20, *04:03:01
----	----	----	----	----	----	*03:17:01, *04:07 = *03:20, *04:07
----	----	----	----	----	----	*03:17:01, *04:06 = *03:20, *04:06
----	----	----	----	----	----	*03:06, *03:17:01 = *03:06, *03:20 = *03:17:01, *03:25 = *03:20, *03:25
----	----	----	----	----	----	*03:37, *06:13:01 = *03:37, *06:29
----	----	----	----	----	----	*03:18, *06:13:01 = *03:18, *06:29
----	----	----	----	----	----	*03:11, *06:13:01 = *03:11, *06:29
----	----	----	----	----	----	*03:07, *06:13:01 = *03:07, *06:29



Product Insert

101.221-12 – including Taq pol., IFU-01

101.221-12u – without Taq pol., IFU-02

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----	----	----	----	----	----	----	----	*03:08, *06:13:01 = *03:08, *06:29
----	----	----	----	----	----	----	----	*03:17:01, *04:09 = *03:20, *04:09
----	----	----	----	----	----	----	----	*03:23, *06:38 = *03:23, *06:52
----	----	----	----	----	----	----	----	*06:07:02, *06:08:02 = *06:07:02, *06:21
----	----	----	----	----	----	----	----	*06:04:01, *06:30 = *06:04:02, *06:30
----	----	----	----	----	----	----	----	*06:12, *06:30 = *06:41, *06:42
----	----	----	----	----	----	----	----	*06:09:01, *06:41 = *06:12, *06:32
----	----	----	----	----	----	----	----	*06:04:01, *06:41 = *06:04:02, *06:41
----	----	----	----	----	----	----	----	*06:04:01, *06:26N = *06:04:02, *06:26N
----	----	----	----	----	----	----	----	*06:04:01, *06:46 = *06:36, *06:46
----	----	----	----	----	----	----	----	*06:38, *06:51 = *06:51, *06:52
----	----	----	----	----	----	----	----	*06:04:01, *06:11:02 = *06:04:02, *06:11:02
----	----	----	----	----	----	----	----	*06:03:01, *06:14:01 = *06:03:01, *06:14:02
----	----	----	----	----	----	----	----	*06:38, *06:43 = *06:43, *06:52
----	----	----	----	----	----	----	----	*06:01:01, *06:44 = *06:03:01, *06:43 = *06:43, *06:44
----	----	----	----	----	----	----	----	*04:03:02, *06:38 = *04:03:02, *06:52
----	----	----	----	----	----	----	----	*04:02:01, *06:38 = *04:02:01, *06:52
----	----	----	----	----	----	----	----	*04:04, *06:38 = *04:04, *06:52
----	----	----	----	----	----	----	----	*04:01:01, *06:38 = *04:01:01, *06:52
----	----	----	----	----	----	----	----	*04:05, *06:38 = *04:05, *06:52
----	----	----	----	----	----	----	----	*03:03:02:01, *06:38 = *03:03:02:01, *06:52
----	----	----	----	----	----	----	----	*03:03:02:01, *06:31 = *03:31, *06:31
----	----	----	----	----	----	----	----	*03:30, *06:13:01 = *03:30, *06:51
----	----	----	----	----	----	----	----	*03:25, *06:04:01 = *03:25, *06:04:02
----	----	----	----	----	----	----	----	*03:25, *06:03:01 = *03:25, *06:03:02
----	----	----	----	----	----	----	----	*03:25, *06:02:01 = *03:25, *06:02:02
----	----	----	----	----	----	----	----	*03:05:01, *06:38 = *03:05:01, *06:52
----	----	----	----	----	----	----	----	*03:02:01, *06:38 = *03:02:01, *06:52 = *03:45, *06:04:01 = *03:45, *06:38 = *03:45, *06:52
----	----	----	----	----	----	----	----	*03:10, *03:34 = *03:10, *03:38
----	----	----	----	----	----	----	----	*03:05:01, *03:10 = *03:10, *03:20
----	----	----	----	----	----	----	----	*03:01:01:01, *03:42 = *03:01:03, *03:42 = *03:01:08, *03:42 = *03:42, *03:42
----	----	----	----	----	----	----	----	*03:01:04, *03:36 = *03:36, *05:04
----	----	----	----	----	----	----	----	*03:01:04, *03:46 = *03:46, *05:04
----	----	----	----	----	----	----	----	*03:01:04, *03:35 = *03:35, *05:04
----	----	----	----	----	----	----	----	*03:01:04, *03:22 = *03:22, *05:04
----	----	----	----	----	----	----	----	*03:01:04, *03:21 = *03:21, *05:04
----	----	----	----	----	----	----	----	*03:01:04, *03:29 = *03:29, *05:04
----	----	----	----	----	----	----	----	*03:01:01:01, *05:08 = *03:01:04, *05:03:01:01 = *03:01:04, *05:08
----	----	----	----	----	----	----	----	*03:01:01:01, *05:14 = *03:35, *05:02:01 = *03:35, *05:14
----	----	----	----	----	----	----	----	*03:01:01:01, *05:18 = *03:01:04, *05:01:01:01 = *03:01:04, *05:18
----	----	----	----	----	----	----	----	*03:01:01:01, *03:24 = *03:01:03, *03:24 = *03:01:08, *03:24 = *03:24, *03:36
----	----	----	----	----	----	----	----	*03:01:04, *03:13 = *03:01:04, *03:47 = *03:47, *05:04
----	----	----	----	----	----	----	----	*03:01:01:01, *03:27 = *03:01:03, *03:27 = *03:01:08, *03:27 = *03:10, *03:27 = *03:27, *03:27
----	----	----	----	----	----	----	----	*03:10, *03:13 = *03:10, *03:47
----	----	----	----	----	----	----	----	*03:01:04, *03:09 = *03:09, *05:04
----	----	----	----	----	----	----	----	*03:09, *03:13 = *03:09, *03:47
----	----	----	----	----	----	----	----	*03:04, *03:13 = *03:04, *03:47
----	----	----	----	----	----	----	----	*03:01:01:01, *03:14:01 = *03:04, *03:10
----	----	----	----	----	----	----	----	*03:01:01:01, *03:19 = *03:01:03, *03:19 = *03:01:08, *03:19
----	----	----	----	----	----	----	----	*03:01:01:01, *03:39 = *03:01:03, *03:39 = *03:03:02:01, *03:36 = *03:36, *03:39
----	----	----	----	----	----	----	----	*03:01:01:01, *03:34 = *03:01:01:01, *03:38 = *03:01:03, *03:34 = *03:01:03, *03:38 = *03:03:02:01,



Product Insert

101.221-12 – including Taq pol., IFU-01
101.221-12u – without Taq pol., IFU-02

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Lot-specific information

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Table with columns for Lot-specific information and www.olerup-ssp.com. Contains numerous rows of alphanumeric codes and symbols (e.g., *06:02:02, *06:03:02, *04:03:01, *06:38 = *04:03:01, *06:52).



Product Insert

101.221-12 – including *Taq* pol., IFU-01

101.221-12u – without *Taq* pol., IFU-02

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----	+	+	+	+	+	+	+	+	*03:06, *06:04:01 = *03:06, *06:04:02
----	+	+	+	+	+	+	+	+	*06:04:01, *06:44 = *06:04:02, *06:44
----	+	+	+	+	+	+	+	+	*06:03:01, *06:38 = *06:03:01, *06:52
----	+	+	+	+	+	+	+	+	*06:38, *06:47 = *06:47, *06:52
----	+	+	+	+	+	+	+	+	*06:03:02, *06:04:01 = *06:03:02, *06:04:02
----	+	+	+	+	+	+	+	+	*06:02:02, *06:38 = *06:02:02, *06:52
----	+	+	+	+	+	+	+	+	*06:02:02, *06:44 = *06:03:02, *06:47
----	+	+	+	+	+	+	+	+	*06:02:02, *06:31 = *06:03:02, *06:20
----	+	+	+	+	+	+	+	+	*03:30, *06:15:01 = *03:30, *06:46
----	+	+	+	+	+	+	+	+	*03:30, *06:33 = *03:30, *06:37
----	+	+	+	+	+	+	+	+	*03:01:03, *06:38 = *03:01:03, *06:52
----	+	+	+	+	+	+	+	+	*03:01:01:01, *06:42 = *03:22, *06:42
----	+	+	+	+	+	+	+	+	*03:01:01:01, *06:30 = *03:22, *06:30
----	+	+	+	+	+	+	+	+	*03:01:01:01, *06:14:02 = *03:01:04, *06:14:02
----	+	+	+	+	+	+	+	+	*03:01:01:01, *06:10 = *03:01:04, *06:10
----	+	+	+	+	+	+	+	+	*03:01:01:01, *06:24 = *03:22, *06:24
----	+	+	+	+	+	+	+	+	*03:01:01:01, *06:16 = *03:29, *06:16
----	+	+	+	+	+	+	+	+	*03:34, *03:42 = *03:38, *03:42
----	+	+	+	+	+	+	+	+	*03:41, *03:42 = *03:42, *04:03:02
----	+	+	+	+	+	+	+	+	*03:01:01:01, *03:30 = *03:01:03, *03:30 = *03:29, *03:30
----	+	+	+	+	+	+	+	+	*03:24, *03:34 = *03:24, *03:38
----	+	+	+	+	+	+	+	+	*03:27, *03:34 = *03:27, *03:38
----	+	+	+	+	+	+	+	+	*03:01:01:01, *03:06 = *03:01:01:01, *03:25 = *03:01:03, *03:06
----	+	+	+	+	+	+	+	+	*03:01:01:01, *04:09 = *03:01:03, *04:09 = *03:29, *04:09
----	+	+	+	+	+	+	+	+	*03:01:01:01, *06:29 = *03:29, *06:29
----	+	+	+	+	+	+	+	+	*03:22, *03:37 = *03:45, *03:46
----	+	+	+	+	+	+	+	+	*03:28, *03:34 = *03:28, *03:38
----	+	+	+	+	+	+	+	+	*02:03, *03:28 = *02:03, *03:47
----	+	+	+	+	+	+	+	+	*02:01:01, *03:36 = *02:07, *03:36 = *02:09, *03:01:01:01 = *02:09, *03:36
----	+	+	+	+	+	+	+	+	*02:01:01, *03:46 = *02:07, *03:46
----	+	+	+	+	+	+	+	+	*02:01:01, *03:35 = *02:07, *03:35
----	+	+	+	+	+	+	+	+	*02:01:01, *03:22 = *02:07, *03:22
----	+	+	+	+	+	+	+	+	*02:01:01, *03:21 = *02:07, *03:21
----	+	+	+	+	+	+	+	+	*02:01:01, *03:29 = *02:07, *03:29
----	+	+	+	+	+	+	+	+	*02:01:01, *03:01:04 = *02:07, *03:01:04
----	+	+	+	+	+	+	+	+	*02:01:01, *03:47 = *02:07, *03:13 = *02:07, *03:47
----	+	+	+	+	+	+	+	+	*02:01:01, *03:09 = *02:07, *03:09
----	+	+	+	+	+	+	+	+	*02:02:01, *03:13 = *02:10, *03:13
----	+	+	+	+	+	+	+	+	*02:02:01, *03:04 = *02:11, *03:01:03 = *02:11, *03:04
----	+	+	+	+	+	+	+	+	*03:06, *06:03:01 = *03:06, *06:03:02
----	+	+	+	+	+	+	+	+	*03:06, *06:02:01 = *03:06, *06:02:02
----	+	+	+	+	+	+	+	+	*03:06, *03:13 = *03:13, *03:25
----	+	+	+	+	+	+	+	+	*03:06, *06:38 = *03:06, *06:52
----	+	+	+	+	+	+	+	+	*06:38, *06:44 = *06:44, *06:52
----	+	+	+	+	+	+	+	+	*06:03:02, *06:38 = *06:03:02, *06:52
----	+	+	+	+	+	+	+	+	*03:30, *06:38 = *03:30, *06:52
----	+	+	+	+	+	+	+	+	*03:10, *06:38 = *03:10, *06:52
----	+	+	+	+	+	+	+	+	*03:01:01:01, *06:38 = *03:01:01:01, *06:52 = *03:22, *06:04:01 = *03:22, *06:38 = *03:22, *06:52
----	+	+	+	+	+	+	+	+	*03:01:01:01, *06:40 = *03:21, *06:40
----	+	+	+	+	+	+	+	+	*03:22, *06:16 = *03:29, *06:24
----	+	+	+	+	+	+	+	+	*03:01:01:01, *06:34 = *03:47, *06:04:01 = *03:47, *06:34
----	+	+	+	+	+	+	+	+	*03:04, *06:38 = *03:04, *06:52
----	+	+	+	+	+	+	+	+	*03:01:04, *03:06 = *03:01:04, *03:25
----	+	+	+	+	+	+	+	+	*02:02:01, *03:24 = *02:06, *03:24
----	+	+	+	+	+	+	+	+	*02:01:01, *03:42 = *02:07, *03:42
----	+	+	+	+	+	+	+	+	*02:01:01, *03:24 = *02:07, *03:24 = *02:09, *03:24



Product Insert

101.221-12 – including Taq pol., IFU-01

101.221-12u – without Taq pol., IFU-02

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+++++	+-----+	-----	-----	-----	-----	-----	-----	*02:01:01, *03:27 = *02:07, *03:27
+++++	+-----+	-----	-----	-----	-----	-----	-----	*02:02:01, *03:36 = *02:06, *03:01:01:01 = *02:06, *03:36
+++++	+-----+	-----	-----	-----	-----	-----	-----	*02:01:01, *03:28 = *02:02:01, *03:28 = *02:02:01, *03:47 = *02:07, *03:28 = *02:10, *03:01:01:01 = *02:10, *03:28 = *02:10, *03:47
-----	+-----+	-----	-----	-----	-----	-----	-----	*04:09, *06:38 = *04:09, *06:52
-----	+-----+	-----	-----	-----	-----	-----	-----	*03:36, *06:38 = *03:36, *06:52
-----	+-----+	-----	-----	-----	-----	-----	-----	*03:46, *06:38 = *03:46, *06:52
-----	+-----+	-----	-----	-----	-----	-----	-----	*03:35, *06:38 = *03:35, *06:52
-----	+-----+	-----	-----	-----	-----	-----	-----	*03:21, *06:38 = *03:21, *06:52
-----	+-----+	-----	-----	-----	-----	-----	-----	*03:29, *06:38 = *03:29, *06:52
-----	+-----+	-----	-----	-----	-----	-----	-----	*03:01:04, *06:38 = *03:01:04, *06:52
-----	+-----+	-----	-----	-----	-----	-----	-----	*03:01:01:01, *06:14:01 = *03:01:04, *06:14:01
-----	+-----+	-----	-----	-----	-----	-----	-----	*03:24, *06:28 = *03:36, *06:28
-----	+-----+	-----	-----	-----	-----	-----	-----	*03:22, *06:34 = *03:47, *06:38 = *03:47, *06:52
-----	+-----+	-----	-----	-----	-----	-----	-----	*03:09, *06:38 = *03:09, *06:52
-----	+-----+	-----	-----	-----	-----	-----	-----	*03:19, *06:38 = *03:19, *06:52
-----	+-----+	-----	-----	-----	-----	-----	-----	*03:28, *06:04:01 = *03:28, *06:34
+++++	+-----+	-----	-----	-----	-----	-----	-----	*02:06, *03:28 = *02:06, *03:47 = *02:09, *03:28 = *02:10, *03:36
+++++	+-----+	-----	-----	-----	-----	-----	-----	*02:11, *03:28 = *02:11, *03:47
-----	+-----+	-----	-----	-----	-----	-----	-----	*03:42, *06:38 = *03:42, *06:52
-----	+-----+	-----	-----	-----	-----	-----	-----	*03:27, *06:38 = *03:27, *06:52
-----	+-----+	-----	-----	-----	-----	-----	-----	*03:28, *06:38 = *03:28, *06:52

- *02:01:01 = *02:01:01-02:01:08
- *02:02:01 = *02:02:01-02:02:02
- *03:01:01:01 = *03:01:01:01-03:01:02 and 03:01:05-03:01:07
- *03:02:01 = *03:02:01-03:02:05
- *03:03:02:01 = *03:03:02:01-03:03:04
- *03:05:01 = *03:05:01-03:05:04
- *04:01:01 = *04:01:01-04:01:02
- *04:02:01 = *04:02:01-04:02:02
- *05:01:01:01 = *05:01:01:01-05:01:03
- *05:02:01 = *05:02:01 and 05:02:03
- *05:03:01:01 = *05:03:01:01-05:03:05
- *06:01:01 = *06:01:01-06:01:06
- *06:04:01 = *06:04:01 and 06:04:03
- *06:35 = *06:35 and 06:45



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Lot-specific information

www.olerup-ssp.com**SPECIFICITY TABLE****DQB1 high resolution for frequent alleles SSP typing**

Specificities and sizes of the PCR products of the 63+1 primer mixes used for DQB1 high resolution for frequent alleles SSP typing

Primer Mix	Size of spec. PCR product ¹	Size of control band ²	Amplified DQB1 alleles ³
1⁴	120 bp	515 bp	*02:01:01-02:02:02, 02:04-02:11
2^{4,7}	85 bp	430 bp	*02:03
3	145 bp	515 bp	*02:01:01-02:01:08, 02:04-02:05, 02:07-02:09, 03:01:01-03:23, 03:25-03:47, 04:01:01-04:09, 05:01:01-05:13, 05:15-05:18, 06:01:01-06:37, 06:39-06:52
4⁹	140 bp, 195 bp	430 bp	*02:02:01-02:03, 02:06, 02:10-02:11, 03:28
5¹⁰	145 bp, 180 bp	515 bp	*02:04, 05:06-05:07
6⁵	165 bp	515 bp	*03:01:01-03:01:07, 03:04, 03:09, 03:13, 03:16, 03:19, 03:21-03:22, 03:24, 03:27-03:29, 03:35-03:36, 03:42, 03:44, 03:46-03:47, 04:09
7	220 bp	515 bp	*03:01:01-03:01:08, 03:04, 03:09-03:10, 03:13-03:14:01, 03:16, 03:19, 03:21-03:22, 03:24, 03:27-03:29, 03:35-03:36, 03:42, 03:44, 03:46-03:47
8	135 bp	515 bp	*02:01:01-02:02:02, 02:04-02:11, 03:02:01-03:02:05, 03:07-03:08, 03:11, 03:18, 03:32, 03:37, 03:45, 06:29
9^{6,11}	175 bp, 220 bp	515 bp	*02:01:01-02:11, 03:02:01-03:03:04, 03:05:01-03:08, 03:11-03:12, 03:13 [?] -03:14:01 [?] , 03:15, 03:16 [?] -03:17:01 [?] , 03:18-03:20, 03:23, 03:25-03:26, 03:30-03:34, 03:37-03:41, 03:43, 03:44 [?] , 03:45, 04:01:01-04:09
10^{4,7}	125 bp	430 bp	*02:11, 03:04, 03:14:01
11^{4,12}	95 bp, 130 bp	430 bp	*03:05:01-03:05:04, 03:17:01, 03:20, 04:09
12^{4,7,13}	65 bp, 115 bp, 135 bp	430 bp	*03:06, 03:08, 03:25, 03:40, 06:02:02, 06:03:02
13^{4,14}	110 bp, 140 bp	430 bp	*03:07, 03:15-03:16
14^{8,15}	135 bp, 260 bp	430 bp	*03:09, 03:11, 03:26
15¹⁶	135 bp, 250 bp	430 bp	*03:10, 03:12, 03:14:01, 03:27, 06:01:01-06:01:06, 06:43
16	260 bp	515 bp	*03:01:01-03:01:07, 03:04, 03:09-03:10, 03:12-03:14:01, 03:16, 03:19, 03:21-03:22, 03:24, 03:27-03:29, 03:35-03:36, 03:42, 03:44, 03:46-03:47

Product Insert

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Lot No.: **60S**

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17 ^{4,6,17}	110 bp, 165 bp, 205 bp, 300 bp	430 bp	*02:10, 03:13, 03:28, 03:47, 06:23, 06:34
18 ^{6,7, 18}	130 bp, 190 bp, 220 bp	430 bp	*03:18, 03:24, 06:28
19	135 bp	515 bp	*03:01:01:01-03:01:07, 03:02:01-03:15, 03:17:01-03:22, 03:24, 03:26-03:47, 04:09
20 ⁷	130 bp	430 bp	*02:03, 03:01:01:01-03:01:02, 03:01:04-03:01:07, 03:03:02:01-03:03:04, 03:06, 03:09-03:10, 03:12-03:13, 03:15-03:17:01, 03:19-03:24, 03:26-03:31, 03:33-03:36, 03:38-03:44, 03:46-03:47, 04:09
21 ⁷	205 bp	515 bp	*04:01:01-04:01:02, 04:05-04:08
22	205 bp	430 bp	*04:02:01-04:03:01, 04:04, 04:09
23	135 bp	430 bp	*05:01:01:01-05:01:03, 05:07, 05:11-05:12, 05:18
24 ⁴	120 bp	430 bp	*05:02:01-05:02:03, 05:05, 05:14, 05:17
25 ⁴	95 bp	515 bp	*05:02:02, 05:03:01:01-05:03:05, 05:06, 05:08-05:10, 05:13, 05:15-05:16
26 ^{4,5}	115 bp	430 bp	*06:02:01-06:03:02, 06:05:01 [?] -06:07:01 [?] , 06:08:01 [?] -06:08:02 [?] , 06:10 [?] -06:11:02 [?] , 06:13:01 [?] -06:33 [?] , 06:35 [?] , 06:37 [?] , 06:39, 06:40 [?] , 06:44, 06:45 [?] -06:46 [?] , 06:47, 06:48 [?] -06:50 [?]
27	210 bp	430 bp	*06:01:01-06:02:02, 06:05:02 [?] -06:06 [?] , 06:10-06:11:02, 06:13:01, 06:16, 06:18-06:20, 06:24, 06:29, 06:33, 06:35, 06:37, 06:43, 06:45, 06:47-06:51
28	185 bp	430 bp	*06:02:01-06:02:02, 06:14:01-06:16, 06:19-06:20, 06:23-06:24, 06:33, 06:37, 06:46-06:50
29	130 bp	430 bp	*06:03:01-06:03:02, 06:07:01-06:07:02, 06:11:02, 06:14:01, 06:26N, 06:28, 06:30-06:32, 06:40-06:41, 06:44
30 ^{5,19}	160 bp, 245 bp	430 bp	*03:06, 03:23, 03:25, 04:04-04:05, 06:03:01-06:03:02, 06:04:02, 06:07:01, 06:08:01, 06:11:01-06:11:02, 06:26N, 06:28, 06:30-06:32, 06:40-06:41, 06:44
31 ⁷	170 bp	515 bp	*06:03:01-06:03:02, 06:08:01-06:08:02, 06:11:02-06:12, 06:14:01, 06:21, 06:26N, 06:28, 06:31, 06:40-06:41, 06:44
32	210 bp	515 bp	*06:04:01-06:04:03, 06:07:01-06:07:02, 06:17, 06:21, 06:25, 06:34, 06:36, 06:38-06:39, 06:52
33 ⁷	170 bp	430 bp	*06:04:01-06:05:02, 06:06 ^w , 06:07:01-06:07:02, 06:09:01, 06:18, 06:25, 06:27, 06:32, 06:34, 06:36, 06:38-06:39, 06:52
34 ^{4,20}	95 bp, 130 bp	430 bp	*05:07, 06:04:01-06:05:01, 06:06, 06:08:01-06:09:01, 06:12, 06:17-06:18, 06:21, 06:27, 06:34,

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Lot No.:	Lot-specific information	www.olerup-ssp.com
		06:36, 06:38-06:39, 06:42, 06:52
35 ^{7,21}	160 bp, 255 bp	515 bp *03:27, 03:31, 06:05:01, 06:05:02 [?] -06:06 [?] , 06:20, 06:31, 06:35, 06:45
36 ⁷	210 bp	430 bp *06:05:01, 06:05:02 [?] -06:06 [?] , 06:09:01, 06:12, 06:15:01, 06:22:01, 06:42, 06:46
37 ⁵	180 bp	430 bp *06:06
38 ^{4,6,7,22}	100 bp, 130 bp, 185 bp	430 bp *03:01:04, 05:04, 05:08, 05:18, 06:10, 06:14:01-06:14:02
39 ⁷	180 bp	430 bp *03:29-03:30, 04:09, 06:13:01, 06:16, 06:22:01, 06:29
40 ^{4,23}	95 bp, 150 bp	430 bp *03:21, 06:40
41 ^{8,24}	185 bp, 205 bp, 300 bp	430 bp *03:45, 06:17, 06:24, 06:30, 06:38, 06:42, 06:52
42 ^{4,6,7,25}	100 bp, 135 bp, 195 bp	515 bp *02:08, 03:06, 03:25, 03:41, 04:03:01-04:03:02, 04:06, 06:10, 06:25
43 ^{4,6,26}	110 bp, 155 bp, 185 bp, 215 bp, 250 bp	515 bp *02:05, 06:26N, 06:33, 06:37
44 ^{4,27}	110 bp, 160 bp	430 bp *03:42, 06:02:01-06:02:02, 06:10, 06:13:01-06:16, 06:20, 06:23-06:24, 06:29, 06:33, 06:37, 06:46-06:51
45	130 bp	515 bp *06:07:01-06:07:02, 06:15:01, 06:36, 06:46
46 ²⁸	160 bp, 210 bp	515 bp *06:03:01-06:03:02, 06:08:01-06:08:02, 06:14:01-06:14:02, 06:21, 06:27-06:28, 06:30-06:32, 06:40-06:41, 06:44
47 ^{4,5,29}	110 bp, 155 bp	430 bp *03:30, 03:42, 04:01:01-04:03:02, 04:06-04:08, 06:19
48	165 bp	430 bp *03:32, 03:43, 04:07
49 ^{4,30}	110 bp, 155 bp	430 bp *03:33, 03:35, 05:14
50 ³¹	200 bp, 240 bp	430 bp *03:34, 03:37-03:38, 03:46
51 ^{4,32}	125 bp, 245 bp, 270 bp	430 bp *02:06, 02:09, 03:24, 03:36, 03:39
52 ^{4,33}	95 bp	430 bp *03:06 [?] -03:08 [?] , 03:11 [?] -03:18 [?] , 03:19, 03:20 [?] , 03:23 [?] , 03:26 [?] , 03:37 [?] , 03:40 [?] , 03:44 [?] , 04:08
53	190 bp	430 bp *05:09
54 ^{4,34}	105 bp, 190 bp	430 bp *05:10, 05:12, 05:17
55 ^{4,5}	115 bp	515 bp *06:04:01-06:04:03, 06:05:01 [?] -06:07:01 [?] , 06:07:02, 06:08:01 [?] -06:08:02 [?] , 06:09:01, 06:10 [?] -06:11:02 [?] , 06:12, 06:13:01 [?] -06:33 [?] , 06:34, 06:35 [?] , 06:36, 06:37 [?] , 06:38, 06:40 [?] , 06:41-06:42, 06:45 [?] -06:46 [?] , 06:48 [?] -06:50 [?] , 06:52
56 ^{4,35}	100 bp, 220 bp	430 bp *06:43-06:44, 06:47

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Lot No.: **60S**

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Allele	185 bp	430 bp	Allele
57⁵	185 bp	430 bp	*02:07, 03:01:01:01-03:01:08, 03:04, 03:06 [?] -03:08 [?] , 03:09-03:10, 03:11 [?] -03:18 [?] , 03:20 [?] , 03:21-03:22, 03:23 [?] , 03:24, 03:26 [?] , 03:27-03:29, 03:33 [?] -03:34 [?] , 03:35-03:36, 03:37 [?] , 03:40 [?] , 03:42, 03:44 [?] , 03:46-03:47
58	185 bp	430 bp	*05:05, 05:11
59^{4,5}	95 bp	430 bp	*03:44, 05:13
60	190 bp	430 bp	*05:15
61	200 bp	430 bp	*05:16
62	225 bp	430 bp	*03:30, 06:05:02, 06:15:01, 06:22:01, 06:37, 06:48, 06:51
63	180 bp	430 bp	*06:50
64³⁶	Neg. 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 high resolution 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 respective lengths of the HLA-specific PCR product(s) are given for the alleles amplified by these primer mixes. 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 two different control primer pairs give rise to either an internal positive control band of 430 base pairs, for most wells, or a band of 515 base pairs, for some wells.

Well number 1 contains the primer pair giving rise to the longer, 515 bp, internal positive control band in order to help in the correct orientation of the DQB1 high resolution for frequent alleles typing.

In addition, wells number 3, 5 to 9, 16, 19, 21, 25, 31, 32, 35, 42, 43, 45, 46 and 55 contain the primer pair giving rise to the longer, 515 bp, internal positive control band in order to allow kit identification.

In the presence of a specific amplification the intensity of the control 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. We assume that unknown sequences in these regions are conserved within allelic groups.

⁴HLA-specific PCR products shorter than 125 base pairs have a lower intensity and are less sharp than longer PCR products.

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⁵Primer mixes 6, 26, 30, 37, 47, 55, 57 and 59 may give rise to a lower yield of HLA-specific PCR product than the other DQB1 primer mixes, most pronounced are primer mixes 26 and 55.

⁶Primer mixes 9, 17, 18, 38, 42 and 43 have a tendency to giving rise to primer oligomer formation.

⁷Primer mixes 2, 10, 12, 18, 20, 21, 31, 33, 35, 36, 38, 39 and 42 may have tendencies of unspecific amplifications.

⁸In primer mixes 14 and 41 the positive control band may be weaker than for other DQB1*high primer mixes.

⁹Primer mix 4: Specific PCR fragment of 140 bp in the DQB1*02:02:01-02:03, 02:06 and 02:10-02:11 alleles. Specific PCR fragment of 195 bp in the DQB1 *03:28 allele.

¹⁰Primer mix 5: Specific PCR fragment of 145 bp in the DQB1*02:04 allele. Specific PCR fragment of 180 bp in the DQB1*05:06 and 05:07 alleles.

¹¹Primer mix 9: Specific PCR fragment of 175 bp in DQB1*03:05:01-03:05:04, 03:13²-03:14:01², 03:16²-03:17:01², 03:19, 03:44², 04:01:01-04:02:01 and 04:04-04:09 alleles. Specific PCR fragment of 220 bp in the DQB1*02:01:01-02:11 alleles. Specific PCR fragments of 175 and 220 bp in the DQB1*03:02:01-03:03:04, 03:06-03:08, 03:11-03:12, 03:15, 03:18, 03:20, 03:23, 03:25-03:26, 03:30-03:34, 03:37-03:41, 03:43, 03:45 and 04:03:01-04:03:02 alleles. Both specific PCR fragments may not be obtained.

¹²Primer mix 11: Specific PCR fragment of 95 bp in the DQB1*03:20 allele. Specific PCR fragment of 130 bp in the DQB1*03:05:01-03:05:04, 03:17:01 and 04:09 alleles.

¹³Primer mix 12: Specific PCR fragment of 65 bp in the DQB1*03:40 allele. Specific PCR fragment of 115 bp in the DQB1*03:06 and 03:25 alleles. Specific PCR fragment of 135 bp in the DQB1*03:08, 06:02:02 and 06:03:02 alleles.

¹⁴Primer mix 13: Specific PCR fragment of 110 bp in the DQB1*03:15 allele. Specific PCR fragment of 140 bp in the DQB1*03:07 and 03:16 alleles.

¹⁵Primer mix 14: Specific PCR fragment of 135 bp in the DQB1*03:09 allele. Specific PCR fragment of 260 bp in the DQB1*03:11 and 03:26 alleles.

¹⁶Primer mix 15: Specific PCR fragment of 135 bp in the DQB1*03:10, 03:12, 03:14:01, 06:01:01-06:01:06 and 06:43 alleles. Specific PCR fragment of 250 bp in the DQB1*03:27 alleles.

¹⁷Primer mix 17: Specific PCR fragment of 110 bp in the DQB1*06:23 allele. Specific PCR fragment of 165 bp in the DQB1*02:10 and 03:13 alleles. Specific PCR fragment of 205 bp in the DQB1*03:28 and 03:47 alleles. Specific PCR fragment of 300 bp in the DQB1*06:34 allele.

¹⁸Primer mix 18: Specific PCR fragment of 130 bp in the DQB1*03:24 allele. Specific PCR fragment of 190 bp in the DQB1*06:28 allele. Specific PCR fragment of 220 bp in the DQB1*03:18 allele.

¹⁹Primer mix 30: Specific PCR fragment of 160 bp in DQB1*03:23, 06:03:01-06:03:02, 06:04:02, 06:07:01, 06:08:01, 06:11:01-06:11:02, 06:26N, 06:28, 06:30-06:32, 06:40-06:41 and 06:44 alleles. Specific PCR fragment of 245 bp in the DQB1*03:06, 03:25 and 04:04-04:05 alleles.

²⁰Primer mix 34: Specific PCR fragment of 95 bp in DQB1*05:07 allele. Specific PCR fragment of 130 bp in the DQB1*06:04:01-06:05:01, 06:06, 06:08:01-06:09, 06:12, 06:17-06:18, 06:21, 06:27, 06:34, 06:36, 06:38-06:39:01, 06:42 and 06:52 alleles.

²¹Primer mix 35: Specific PCR fragment of 160 bp in DQB1*03:27 and 06:35 allele. Specific PCR fragment of 255 bp in the DQB1*03:31, 06:05:01, 06:05:02?-06:06?, 06:20, 06:31 and 06:45 alleles.

²²Primer mix 38: Specific PCR fragment of 100 bp in DQB1*06:14:01 and 06:14:02 alleles. Specific PCR fragment of 130 bp in the DQB1*03:01:04, 05:04, 05:08 and 05:18 alleles. Specific PCR fragment of 185 bp in the DQB1*06:10 allele.

²³Primer mix 40: Specific PCR fragment of 95 bp in the DQB1*06:40 allele. Specific PCR fragment of 150 bp in the DQB1*03:21 allele.

²⁴Primer mix 41: Specific PCR fragment of 185 bp in the DQB1*03:45, 06:17, 06:24, 06:30, 06:38 and 06:42 alleles. Specific PCR fragment of 205 bp in the DQB1* 06:38 allele. Specific PCR fragment of 300 bp in the DQB1 *06:52 allele.

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²⁵Primer mix 42: Specific PCR fragment of 100 bp in the DQB1*03:41 and 04:06 alleles. Specific PCR fragment of 135 bp in the DQB1*06:10 and 06:25 alleles. Specific PCR fragment of 195 bp in the DQB1*02:08, 03:06, 03:25 and 04:03:01-04:03:02 alleles.

²⁶Primer mix 43: PCR fragment of 110 bp in the DQB1*06:37 allele. Specific PCR fragment of 155 bp in the DQB1*02:05 allele. Specific PCR fragments of 185 and 215 bp in the DQB1*06:26N allele. Specific PCR fragment of 250 bp in the DQB1*06:33 allele.

²⁷Primer mix 44: Specific PCR fragment of 110 bp in the DQB1 *03:42 allele. Specific PCR fragment of 160 bp in the DQB1*06:02:01-06:02:02, 06:10, 06:13:01-06:16, 06:20, 06:23-06:24, 06:29, 06:33, 06:37 and 06:46-06:51 alleles.

²⁸Primer mix 46: Specific PCR fragment of 160 bp in the DQB1*06:21 allele. Specific PCR fragment of 210 bp in the DQB1*06:27, 06:30 and 06:32 alleles. Specific PCR fragment of 160 and 210 bp in the DQB1*06:03:01-06:03:02, 06:08:01-06:08:02, 06:14:01-06:14:02, 06:28, 06:31, 06:40-06:41 and 06:44 alleles (both specific PCR fragments may not be obtained).

²⁹Primer mix 47: Specific PCR fragment of 110 bp in the DQB1*03:42 allele. Specific PCR fragment of 155 bp in the DQB1*03:30, 04:01:01-04:03:02, 04:06-04:08, 06:19 alleles.

³⁰Primer mix 49: PCR fragment of 110 bp in the DQB1*03:33 allele. Specific PCR fragment of 155 bp in the DQB1*03:35 and 05:14 alleles.

³¹Primer mix 50: PCR fragment of 200 bp in the DQB1*03:37-03:38 and 03:46 alleles. Specific PCR fragment of 240 bp in the DQB1*03:34 allele.

³²Primer mix 51: Specific PCR fragment of 125 bp in the DQB1*03:36 and 03:39 alleles. Specific PCR fragment of 245 bp in the DQB1*02:06 and 03:24 alleles. Specific PCR fragment of 270 bp in the DQB1*02:09 allele.

³⁴Primer mix 54: Specific PCR fragment of 105 bp in the DQB1*05:17 allele. Specific PCR fragment of 190 bp in the DQB1*05:10 and 05:12 alleles.

³⁵Primer mix 56: PCR fragment of 100 bp in the DQB1*06:44 and 06:47 alleles. Specific PCR fragment of 220 bp in the DQB1*06:43 allele.

³⁶Primer mix 64 contains a negative control, which will amplify more than 95% of HLA amplicons as well as the amplicons generated by control primer pairs. PCR product sizes range from 75 to 200 base pairs. The PCR product generated by the control primer pair is 430 base pairs.

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

'w', might be weakly amplified.

Lot No.: **60S**

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INTERPRETATION TABLE																																
DQB1 high resolution SSP typing																																
Amplification patterns of the DQB1*02:01 to DQB1*06:52 alleles																																
	Well ^{4,5}																															
	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
Length of spec. PCR product(s)	120	85	145	140	145	165	220	135	175	125	95	65	110	135	135	260	110	130	130	205	205	135	120	95	115	210	185	130	160	170	210	
Length of int. pos. control ¹	515	430	515	430	515	515	515	515	515	430	430	430	430	430	430	515	430	430	515	430	430	430	430	515	430	430	430	430	430	515	515	
Well No.	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
DQB1 allele ²																																
*02:01:01-02:01:08	1		3					8	9																							
*02:02:01-02:02:02	1			4				8	9																							
*02:03		2		4					9											20												
*02:04	1		3		5			8	9																							
*02:05	1		3					8	9																							
*02:06	1			4				8	9																							
*02:07	1		3					8	9																							
*02:08	1		3					8	9																							
*02:09	1		3					8	9																							
*02:10	1			4				8	9								17															
*02:11	1			4				8	9	10																						
*03:01:01:01-03:01:02, 03:01:05-03:01:07, *03:22 ⁶			3			6	7								16				19	20												
*03:01:03			3			6	7								16				19													
*03:01:04			3			6	7								16				19	20												
*03:01:08			3				7																									
*03:02:01-03:02:05			3					8	9										19													
*03:03:02:01-03:03:04			3						9											19	20											
*03:04			3			6	7			10					16				19													
*03:05:01-03:05:04			3						9		11									19												
*03:06			3						9			12								19	20									30		
*03:07			3					8	9				13							19												
*03:08			3					8	9			12								19												
*03:09			3			6	7							14	16					19	20											
*03:10			3				7								15	16				19	20											
Well No.	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



Lot No.: **60S**

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INTERPRETATION TABLE																																																															
DQB1 high resolution SSP typing																																																															
Amplification patterns of the DQB1*02:01 to DQB1*06:52 alleles																																																															
Well ^{4,5}																																																															
33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48	49	50	51	52	53	54	55	56	57	58	59	60	61	62	63	64	Neg. Control																															
170	95	160	210	180	100	180	95	185	100	110	110	130	160	110	165	110	200	125	95	190	105	115	100	185	185	95	190	200	225	180	Length of spec. PCR product(s)																																
430	430	515	430	430	430	430	430	430	515	515	430	515	515	430	430	430	430	430	430	430	430	515	430	430	430	430	430	430	430	430			Length of int. pos. control ¹																														
33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48	49	50	51	52	53	54	55	56	57	58	59	60	61	62	63		64		Well No.																													
																																DQB1 allele ²																															
																																*02:01:01-02:01:08																															
																																*02:02:01-02:02:02																															
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33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48	49	50	51	52	53	54	55	56	57	58	59	60	61	62	63	64	Well No.																															



Product Insert

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Lot No.: **60S**

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Well No.	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	
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*03:16			3			6	7		?				13		16				20														
*03:17:01			3						?		11								19	20													
*03:18			3					8	9									18	19														
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*03:32			3					8	9										19														
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*03:46			3			6	7									16			19	20													
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Lot No.: **60S**

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33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48	49	50	51	52	53	54	55	56	57	58	59	60	61	62	63	64	Well No.						
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33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48	49	50	51	52	53	54	55	56	57	58	59	60	61	62	63	64	Well No.						

Negative Control



Product Insert

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Lot No.: **60S**

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Well No.	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
*05:01:01:01-05:01:03			3																				23									
*05:02:01, 05:02:03			3																				24									
*05:02:02			3																				24	25								
*05:03:01:01-05:03:05			3																						25							
*05:04			3																													
*05:05			3																				24									
*05:06			3		5																				25							
*05:07			3		5																		23									
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*05:18			3																				23									
*06:01:01-06:01:06			3											15												27						
*06:02:01			3																						26	27	28					
*06:02:02			3									12													26	27	28					
*06:03:01			3																						26		29	30	31			
*06:03:02			3									12													26		29	30	31			
*06:04:01, 06:04:03			3																												32	
*06:04:02			3																									30		32		
*06:05:01			3																							?						
*06:05:02			3																							?	?					
*06:06			3																							?	?					
*06:07:01			3																							?		29	30	32		
*06:07:02			3																								?		29		32	
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*06:13:01			3																							?	27					
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*06:16			3																							?	27	28				
*06:17			3																							?						32



Product Insert

101.221-12 – including *Taq* pol., IFU-01
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Lot No.: **60S**

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33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48	49	50	51	52	53	54	55	56	57	58	59	60	61	62	63	64	Well No.	
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33	34																						55									*06:04:01,	
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33	34																						55									*06:04:02	
33	34	35	36																				?									*06:05:01	
33		?	?																				?					62				*06:05:02	
w	34	?	?	37																			?									*06:06	
33												45											?									*06:07:01	
33												45											55									*06:07:02	
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Negative Control



Product Insert

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Well No.	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	
*06:18			3																						?	27							
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*06:21			3																							?				31	32		
*06:22:01			3																							?							
*06:23			3														17									?		28					
*06:24			3																							?	27	28					
*06:25			3																							?							32
*06:26N			3																							?			29	30	31		
*06:27			3																							?							
*06:28			3															18								?			29	30	31		
*06:29			3					8																		?	27						
*06:30			3																							?			29	30			
*06:31			3																							?			29	30	31		
*06:32			3																							?			29	30			
*06:33			3																							?	27	28					
*06:34			3														17																32
*06:35, 06:45 ³			3																							?	27						
*06:36			3																														32
*06:37			3																							?	27	28					
*06:38																																	32
*06:39			3																							26							32
*06:40			3																							?			29	30	31		
*06:41			3																										29	30	31		
*06:42			3																														
*06:43			3												15												27						
*06:44			3																							26			29	30	31		
*06:46			3																							?		28					
*06:47			3																							26	27	28					
*06:48			3																							?	27	28					
*06:49			3																							?	27	28					
*06:50			3																							?	27	28					
*06:51			3																								27						
*06:52			3																														32
DQB1 allele ²																																	
Well No.	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	

¹The internal positive control primer pairs amplify segments of the human growth hormone gene. The two different control primer pairs give rise to either an internal positive control band of 430 base pairs, for most wells, or a band of 515 base pairs, for some wells.

Well number 1 contains the primer pair giving rise to the longer, 515 bp, internal positive control band in order to help in the correct orientation of the DQB1 high resolution for frequent alleles typing.

In addition, wells number 3, 5 to 9, 16, 19, 21, 25, 31, 32, 35, 42, 43, 45, 46 and 55 contain the primer pair giving rise to the longer, 515 bp, internal positive control band in order to allow kit identification.

²The sequence of the DQB1*03031 allele has been shown to be identical to DQB1*03:03:02.

³The DQB1*06:35 and 06:45 alleles may be distinguished by the different sizes of the specific PCR products generated by primer mix 35.

⁴Primer mix 64 contains a negative control, which will amplify more than 95% of HLA amplicons as well as the amplicons generated by control primer pairs. PCR product sizes range from 75 to 200 base pairs. The PCR product generated by the control primer pair is 430 base pairs.



Product Insert

101.221-12 – including *Taq* pol., IFU-01

101.221-12u – without *Taq* pol., IFU-02

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Lot No.: **60S**

Lot-specific information

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33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48	49	50	51	52	53	54	55	56	57	58	59	60	61	62	63	64	Well No.			
33	34																					?												*06:18	
														47									?											*06:19	
		35									44												?											*06:20	
	34												46										?											*06:21	
			36			39																		?				62						*06:22:01	
											44												?											*06:23	
								41			44												?											*06:24	
33									42														?											*06:25	
										43														?											*06:26N
33	34												46										?											*06:27	
													46											?											*06:28
						39					44													?											*06:29
								41					46											?											*06:30
		35											46											?											*06:31
33													46											?											*06:32
										43	44													?											*06:33
33	34																						55											*06:34	
		35																						?											*06:35, 06:45 ³
33	34											45											55											*06:36	
										43	44													?				62							*06:37
33	34							41															55											*06:38	
33	34																																		*06:39
							40						46											?											*06:40
													46										55												*06:41
	34	36						41															55											*06:42	
																								56											*06:43
													46											56											*06:44
		36									44	45												?											*06:46
											44													56											*06:47
											44													?				62							*06:48
											44													?											*06:49
											44													?											*06:50
											44													?				63							*06:51
											44																62								*06:52
33	34							41															55											*06:52	
																																			DQB1 allele ²
33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48	49	50	51	52	53	54	55	56	57	58	59	60	61	62	63	64		Well No.		

⁵Primer mix 4: Specific PCR fragment of 140 bp in the DQB1*02:02:01-02:03, 02:06 and 02:10-02:11 alleles. Specific PCR fragment of 195 bp in the DQB1 *03:28 allele.

Primer mix 5: Specific PCR fragment of 145 bp in the DQB1*02:04 allele. Specific PCR fragment of 180 bp in the DQB1*05:06 and 05:07 alleles.

Primer mix 9: Specific PCR fragment of 175 bp in DQB1*03:05:01-03:05:04, 03:13²-03:14:01², 03:16²-03:17:01², 03:19, 03:44², 04:01:01-04:02:01 and 04:04-04:09 alleles. Specific PCR fragment of 220 bp in the DQB1*02:01:01-02:11 alleles. Specific PCR fragments of 175 and 220 bp in the DQB1*03:02:01-03:03:04, 03:06-03:08, 03:11-03:12, 03:15, 03:18, 03:20, 03:23, 03:25-03:26, 03:30-03:34, 03:37-03:41, 03:43, 03:45 and 04:03:01-04:03:02 alleles. Both specific PCR fragments may not be obtained.

Primer mix 11: Specific PCR fragment of 95 bp in the DQB1*03:20 allele. Specific PCR fragment of 130 bp in the DQB1*03:05:01-03:05:04, 03:17:01 and 04:09 alleles.



Product Insert

101.221-12 – including *Taq pol.*, IFU-01101.221-12u – without *Taq pol.*, IFU-02Visit www.olerup-ssp.com for
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Lot-specific information

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Primer mix 12: Specific PCR fragment of 65 bp in the DQB1*03:40 allele. Specific PCR fragment of 115 bp in the DQB1*03:06 and 03:25 alleles. Specific PCR fragment of 135 bp in the DQB1*03:08, 06:02:02 and 06:03:02 alleles.

Primer mix 13: Specific PCR fragment of 110 bp in the DQB1*03:15 allele. Specific PCR fragment of 140 bp in the DQB1*03:07 and 03:16 alleles.

Primer mix 14: Specific PCR fragment of 135 bp in the DQB1*03:09 allele. Specific PCR fragment of 260 bp in the DQB1*03:11 and 03:26 alleles.

Primer mix 15: Specific PCR fragment of 135 bp in the DQB1*03:10, 03:12, 03:14:01, 06:01:01-06:01:06 and 06:43 alleles. Specific PCR fragment of 250 bp in the DQB1*03:27 alleles.

Primer mix 17: Specific PCR fragment of 110 bp in the DQB1*06:23 allele. Specific PCR fragment of 165 bp in the DQB1*02:10 and 03:13 alleles. Specific PCR fragment of 205 bp in the DQB1*03:28 and 03:47 alleles. Specific PCR fragment of 300 bp in the DQB1*06:34 allele.

Primer mix 18: Specific PCR fragment of 130 bp in the DQB1*03:24 allele. Specific PCR fragment of 190 bp in the DQB1*06:28 allele. Specific PCR fragment of 220 bp in the DQB1*03:18 allele.

Primer mix 30: Specific PCR fragment of 160 bp in DQB1*03:23, 06:03:01-06:03:02, 06:04:02, 06:07:01, 06:08:01, 06:11:01-06:11:02, 06:26N, 06:28, 06:30-06:32, 06:40-06:41 and 06:44 alleles. Specific PCR fragment of 245 bp in the DQB1*03:06, 03:25 and 04:04-04:05 alleles.

Primer mix 34: Specific PCR fragment of 95 bp in DQB1*05:07 allele. Specific PCR fragment of 130 bp in the DQB1*06:04:01-06:05:01, 06:06, 06:08:01-06:09, 06:12, 06:17-06:18, 06:21, 06:27, 06:34, 06:36, 06:38-06:39:01, 06:42 and 06:52 alleles.

Primer mix 35: Specific PCR fragment of 160 bp in DQB1*03:27 and 06:35 allele. Specific PCR fragment of 255 bp in the DQB1*03:31, 06:05:01, 06:05:02?-06:06?, 06:20, 06:31 and 06:45 alleles.

Primer mix 38: Specific PCR fragment of 100 bp in DQB1*06:14:01 and 06:14:02 alleles. Specific PCR fragment of 130 bp in the DQB1*03:01:04, 05:04, 05:08 and 05:18 alleles. Specific PCR fragment of 185 bp in the DQB1*06:10 allele.

Primer mix 40: Specific PCR fragment of 95 bp in the DQB1*06:40 allele. Specific PCR fragment of 150 bp in the DQB1*03:21 allele.

Primer mix 41: Specific PCR fragment of 185 bp in the DQB1*03:45, 06:17, 06:24, 06:30, 06:38 and 06:42 alleles. Specific PCR fragment of 205 bp in the DQB1*06:38 allele. Specific PCR fragment of 300 bp in the DQB1*06:52 allele.

Primer mix 42: Specific PCR fragment of 100 bp in the DQB1*03:41 and 04:06 alleles. Specific PCR fragment of 135 bp in the DQB1*06:10 and 06:25 alleles. Specific PCR fragment of 195 bp in the DQB1*02:08, 03:06, 03:25 and 04:03:01-04:03:02 alleles.

Primer mix 43: PCR fragment of 110 bp in the DQB1*06:37 allele. Specific PCR fragment of 155 bp in the DQB1*02:05 allele. Specific PCR fragments of 185 and 215 bp in the DQB1*06:26N allele. Specific PCR fragment of 250 bp in the DQB1*06:33 allele.

Primer mix 44: Specific PCR fragment of 110 bp in the DQB1*03:42 allele. Specific PCR fragment of 160 bp in the DQB1*06:02:01-06:02:02, 06:10, 06:13:01-06:16, 06:20, 06:23-06:24, 06:29, 06:33, 06:37 and 06:46-06:51 alleles.

Primer mix 46: Specific PCR fragment of 160 bp in the DQB1*06:21 allele. Specific PCR fragment of 210 bp in the DQB1*06:27, 06:30 and 06:32 alleles. Specific PCR fragment of 160 and 210 bp in the DQB1*06:03:01-06:03:02, 06:08:01-06:08:02, 06:14:01-06:14:02, 06:28, 06:31, 06:40-06:41 and 06:44 alleles (both specific PCR fragments may not be obtained).

Primer mix 47: Specific PCR fragment of 110 bp in the DQB1*03:42 allele. Specific PCR fragment of 155 bp in the DQB1*03:30, 04:01:01-04:03:02, 04:06-04:08, 06:19 alleles.

Primer mix 49: PCR fragment of 110 bp in the DQB1*03:33 allele. Specific PCR fragment of 155 bp in the DQB1*03:35 and 05:14 alleles.

Primer mix 50: PCR fragment of 200 bp in the DQB1*03:37-03:38 and 03:46 alleles. Specific PCR fragment of 240 bp in the DQB1*03:34 allele.

Primer mix 51: Specific PCR fragment of 125 bp in the DQB1*03:36 and 03:39 alleles. Specific PCR fragment of 245 bp in the DQB1*02:06 and 03:24 alleles. Specific PCR fragment of 270 bp in the DQB1*02:09 allele.

Primer mix 52: Specific PCR fragment of 95 bp in the DQB1*03:06?-03:08?, 03:11?-03:18?, 03:19, 03:20?, 03:23?, 03:26?, 03:37?, 03:40?, 03:44? and 04:08 alleles. Specific PCR fragment of 260 bp in the DQB1*06:49 allele.

Product Insert

101.221-12 – including *Taq* pol., IFU-01101.221-12u – without *Taq* pol., IFU-02Visit www.olerup-ssp.com for
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Primer mix 54: Specific PCR fragment of 105 bp in the DQB1*05:17 allele. Specific PCR fragment of 190 bp in the DQB1*05:10 and 05:12 alleles.

Primer mix 56: PCR fragment of 100 bp in the DQB1*06:44 and 06:47 alleles. Specific PCR fragment of 220 bp in the DQB1*06:43 allele.

Primer mix 64 contains a negative control, which will amplify more than 95% of HLA amplicons as well as the amplicons generated by control primer pairs. PCR product sizes range from 75 to 200 base pairs. The PCR product generated by the control primer pair is 430 base pairs.

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

‘w’ , might be weakly amplified.

⁶This lot of the DQB1 typing kit cannot distinguish the DQB1*03:01:01:01-03:01:02 and 03:01:05-03:01:07 alleles and the DQB1*03:22 alleles.

Product Insert

101.221-12 – including *Taq* pol., IFU-01

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101.221-12u – without *Taq* pol., IFU-02

“Instructions for Use” (IFU)

Lot No.: **60S**

Lot-specific information

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Primers

Well No.	1	2	3	4	5	6	7	8	9	10	11	12
Length of spec. PCR product(s)	120	85	145	140	145	165	220	135	175	125	95	65
				195	180				220		130	115
												135
Length of int. pos. control ¹	515	430	515	430	515	515	515	515	515	430	430	430
5'-primer(s) ²	30(185) 5'-AAg ^{3'}	57(266) 5'-TgA ^{3'}	135(500) 5'-TgA ^{3'}	26(173) 5'-TTA ^{3'}	39(212) 5'-gCA ^{3'}	45(230) 5'-ggA ^{3'}	26(173) 5'-TTA ^{3'}	26(173) 5'-TCT ^{3'}	26(173) 5'-TCT ^{3'}	26(173) 5'-TTA ^{3'}	26(173) 5'-ggg ^{3'}	38(210) 5'-gCA ^{3'}
				101(400) 5'-TCT ^{3'}	40(216) 5'-TTg ^{3'}				139(514) 5'-CAA ^{3'}	32(193) 5'-ATg ^{3'}	37(208) 5'-ACA ^{3'}	
					135(502) 5'-ACg ^{3'}							
3'-primer(s) ³	57(266) 5'-Cgg ^{3'}	71(309) 5'-CgT ^{3'}	169(604) 5'-gAC ^{3'}	76(325) 5'-CgC ^{3'}	86(353) 5'-ACg ^{3'}	86(353) 5'-gCT ^{3'}	86(353) 5'-gCT ^{3'}	57(266) 5'-Cgg ^{3'}	86(353) 5'-gCT ^{3'}	57(266) 5'-Cgg ^{3'}	55(260) 5'-gCg ^{3'}	45(232) 5'-CAA ^{3'}
	57(266) 5'-CAg ^{3'}			135(500) 5'-ggC ^{3'}	169(604) 5'-gAC ^{3'}		86(353) 5'-gTT ^{3'}	57(266) 5'-CAg ^{3'}	185(650) 5'-CgA ^{3'}			62(282) 5'-CTA ^{3'}
												69(304) 5'-CCC ^{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(s)	110	135	135	260	110	130	135	130	205	205	135	120
	140	260	250		165	190						
					205	220						
					300							
Length of int. pos. control ¹	430	430	430	515	430	430	515	430	515	430	430	430
5'-primer(s) ²	49(242) 5'-ggT ^{3'}	13(136) 5'-gCC ^{3'}	13(134) 5'-ggC ^{3'}	13(134) 5'-ggC ^{3'}	26(173) 5'-ggg ^{3'}	26(175) 5'-TTC ^{3'}	55(260) 5'-gCC ^{3'}	57(266) 5'-TgA ^{3'}	23(164) 5'-gCT ^{3'}	23(164) 5'-gCg ^{3'}	26(173) 5'-ggg ^{3'}	29(184) 5'-gAC ^{3'}
	55(260) 5'-gCA ^{3'}	135(500) 5'-TgA ^{3'}			26(173) 5'-TTA ^{3'}	38(209) 5'-CgT ^{3'}				23(164) 5'-gCg ^{3'}		
	63(285) 5'-Agg ^{3'}				101(400) 5'-TCT ^{3'}	139(514) 5'-CAA ^{3'}						
3'-primer(s) ³	86(353) 5'-gCT ^{3'}	86(353) 5'-gCT ^{3'}	45(230) 5'-CCC ^{3'}	86(353) 5'-gCT ^{3'}	48(240) 5'-gCg ^{3'}	86(353) 5'-gCT ^{3'}	86(353) 5'-gCT ^{3'}	86(353) 5'-gCT ^{3'}	77(327) 5'-ACg ^{3'}	77(327) 5'-ACg ^{3'}	57(266) 5'-CAA ^{3'}	56(265) 5'-gCT ^{3'}
		167(596) 5'-CAT ^{3'}	82(343) 5'-gTg ^{3'}		67(296) 5'-ggT ^{3'}	87(356) 5'-ggA ^{3'}						
					76(325) 5'-CgC ^{3'}	169(604) 5'-gAT ^{3'}						
					84(349) 5'-CAT ^{3'}							
					141(520) 5'-AAT ^{3'}							
					188(661) 5'-CCA ^{3'}							
Well No.	13	14	15	16	17	18	19	20	21	22	23	24



Product Insert

101.221-12 – including *Taq* pol., IFU-01

101.221-12u – without *Taq* pol., IFU-02

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Lot-specific information

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Well No.	25	26	27	28	29	30	31	32	33	34	35	36
Length of spec. PCR product(s)	95	115	210	185	130	160	170	210	170	95	160	210
						245				130	255	
Length of int. pos. control ¹	515	430	430	430	430	430	515	515	430	430	515	430
5'-primer(s) ²	29(184) 5'-gAC 3'	130(485) 5'-CCg 3'	29(184) 5'-gAT 3'	9(122) 5'-gTT 3'	27(177) 5'-gTA 3'	9(122) 5'-gTA 3'	27(177) 5'-gTA 3'	29(184) 5'-gAC 3'	27(177) 5'-gTA 3'	27(177) 5'-gTA 3'	13(136) 5'-gCC 3'	29(184) 5'-gAT 3'
			29(184) 5'-gAT 3'							39(212) 5'-gCA 3'	45(230) 5'-ggA 3'	
											115(442) 5'-TgA 3'	
3'-primer(s) ³	47(237) 5'-CgA 3'	154(558) 5'-AAA 3'	86(353) 5'-ACg 3'	57(266) 5'-CAT 3'	57(266) 5'-CAT 3'	48(240) 5'-gCg 3'	69(304) 5'-CCC 3'	86(353) 5'-ACC 3'	69(304) 5'-CCT 3'	57(266) 5'-CAA 3'	82(343) 5'-gTg 3'	86(353) 5'-ACC 3'
						77(327) 5'-ACg 3'					87(356) 5'-ggA 3'	
											185(650) 5'-CgA 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	48
Length of spec. PCR product(s)	180	100	180	95	185	100	110	110	130	160	110	165
		130		150	205	135	155	160		210	155	
		185			300	195	185					
							215					
							250					
Length of int. pos. control ¹	430	430	430	430	430	515	515	430	515	515	430	430
5'-primer(s) ²	27(177) 5'-gTA 3'	9(122) 5'-gTT 3'	9(122) 5'-gTT 3'	30(187) 5'-ACg 3'	26(173) 5'-TCT 3'	26(173) 5'-TCT 3'	11(129) 5'-TTA 3'	9(122) 5'-gTT 3'	57(266) 5'-TgA 3'	29(184) 5'-gAC 3'	9(122) 5'-gTT 3'	140(517) 5'-CTA 3'
		29(184) 5'-gAT 3'	139(514) 5'-CAA 3'	132(493) 5'-TTT 3'	98(389) 5'-CAT 3'	54(259) 5'-ggT 3'	28(181) 5'-CCT 3'	139(514) 5'-CAA 3'	154(558) 5'-ACT 3'		139(514) 5'-CAA 3'	141(520) 5'-gCC 3'
		135(500) 5'-TgA 3'			130(485) 5'-CCA 3'		38(210) 5'-gTg 3'					144(529) 5'-CCg 3'
					133(494) 5'-TCA 3'		62(282) 5'-AAG 3'					
3'-primer(s) ³	74(317) 5'-CCg 3'	27(177) 5'-gTT 3'	55(260) 5'-gCg 3'	48(240) 5'-gCg 3'	70(307) 5'-ggC 3'	44(229) 5'-CCA 3'	77(326) 5'-CCg 3'	48(240) 5'-gCg 3'	86(353) 5'-ACC 3'	69(304) 5'-CCC 3'	47(237) 5'-CgA 3'	185(650) 5'-CgA 3'
		29(184) 5'-gTg 3'	55(260) 5'-gCg 3'	169(604) 5'-gAC 3'	74(318) 5'-AAG 3'	56(265) 5'-gCT 3'	86(353) 5'-ACg 3'	162(583) 5'-CAC 3'	186(653) 5'-CCg 3'	86(353) 5'-ACg 3'	162(583) 5'-CAC 3'	
		56(265) 5'-gCT 3'	57(266) 5'-CAA 3'		185(650) 5'-Cgg 3'	77(326) 5'-CCT 3'						
		167(596) 5'-CAT 3'	59(274) 5'-gTT 3'			77(327) 5'-ACg 3'						
			182(641) 5'-ggC 3'									
Well No.	37	38	39	40	41	42	43	44	45	46	47	48



Product Insert

101.221-12 – including *Taq* pol., IFU-01

101.221-12u – without *Taq* pol., IFU-02

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Lot No.: **60S**

Lot-specific information

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Well No.	49	50	51	52	53	54	55	56	57	58	59	60
Length of spec. PCR product(s)	110	200	125	95	190	105	115	100	185	185	95	190
Length of int. pos. control ¹	430	430	430	430	430	430	515	430	430	430	430	430
5'-primer(s) ²	128(481) 5'-AAA 3'	19(154) 5'-ACA 3'	23(166) 5'-gCA 3'	13(134) 5'-ggT 3'	36(205) 5'-Agg 3'	26(173) 5'-ggg 3'	130(485) 5'-CCA 3'	13(134) 5'-ggC 3'	30(185) 5'-AAg 3'	38(210) 5'-gCA 3'	13(134) 5'-ggC 3'	29(184) 5'-gAC 3'
	133(494) 5'-TCA 3'	29(184) 5'-gAC 3'	101(400) 5'-TCT 3'	167(596) 5'-gCA 3'		135(500) 5'-TgA 3'		154(558) 5'-ACT 3'	139(514) 5'-CAA 3'	38(210) 5'-gCg 3'	13(136) 5'-gCC 3'	
	146(535) 5'-CCT 3'	30(187) 5'-ACg 3'										
		36(204) 5'-gAC 3'										
3'-primer(s) ³	169(604) 5'-gAC 3'	86(353) 5'-gCT 3'	55(260) 5'-gCg 3'	86(353) 5'-ACg 3'	86(353) 5'-ACg 3'	77(328) 5'-CAA 3'	154(558) 5'-AAA 3'	73(314) 5'-CCA 3'	81(338) 5'-Tgg 3'	86(353) 5'-ACg 3'	32(191) 5'-TAC 3'	80(335) 5'-gTT 3'
			55(260) 5'-gCg 3'	185(650) 5'-CgA 3'		157(566) 5'-ggg 3'		174(618) 5'-ACT 3'	185(650) 5'-Cgg 3'			
			127(477) 5'-TTC 3'			182(642) 5'-ggT 3'						
			169(604) 5'-gAT 3'									
			178(631) 5'-gCg 3'									
Well No.	49	50	51	52	53	54	55	56	57	58	59	60

Well No.	61	62	63	64
Length of spec. PCR product(s)	200	225	180	Negative Control ⁴
Length of int. pos. control ¹	430	430	430	
5'-primer(s) ²	29(184) 5'-gAC 3'	9(122) 5'-gTT 3'	29(184) 5'-gAT 3'	
3'-primer(s) ³	82(341) 5'-AgC 3'	69(304) 5'-CCT 3'	75(322) 5'-gTg 3'	
Well No.	61	62	63	
	61	62	63	

¹The internal positive control primer pairs amplify segments of the human growth hormone gene. The two different control primer pairs give rise to either an internal positive control band of 430 base pairs, for most wells, or a band of 515 base pairs, for some wells.

Well number 1 contains the primer pair giving rise to the longer, 515 bp, internal positive control band in order to help in the correct orientation of the DQB1 high resolution for frequent alleles typing. In addition, wells number 3, 5 to 9, 16, 19, 21, 25, 31, 32, 35, 42, 43, 45, 46 and 55 contain the primer pair giving rise to the longer, 515 bp, internal positive control band in order to allow kit identification.

²The codon, and in parenthesis the nucleotide, in the 2nd or 3rd exon, matching the specificity-determining 3'-end of the primer is given. Codon and nucleotide numbering as on the



Product Insert

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Lot-specific information

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www.ebi.ac.uk/imgt/hla web site. The sequence of the 3 terminal nucleotides of the primer is given.

³The codon, and in parenthesis the nucleotide, in the 2nd or 3rd exon, matching the specificity-determining 3'-end of the primer is given in the anti-sense direction. Codon and 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.

⁴Primer mix 64 contains a negative control, which will amplify more than 95% of HLA amplicons as well as the amplicons generated by control primer pairs. PCR product sizes range from 75 to 200 base pairs. The PCR product generated by the control primer pair is 430 base pairs.

Product Insert

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Lot No.: **60S**

Lot-specific information

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CELL LINE VALIDATION SHEET																			
DQB1 high resolution primer set																			
				Well															
				1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
				201321401	201185002	201185003	201185004	201210205	201210206	201321407	201321408	201185009	201321410	201210211	201210212	201185013	201185014	201185015	201185016
IHCW cell line		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		-	-	+	-	-	-	-	-	-	-	-	-	-	-	-



Product Insert

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Lot No.: **60S**

Lot-specific information

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CELL LINE VALIDATION SHEET																			
DQB1 high resolution primer set																			
				Well															
				17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32
				201321417	201202618	201185019	201185020	201202621	201185022	201185023	201185024	201185025	201210226	201185027	201185028	201185029	201185030	201185031	201185032
	IHWC cell line	DQB1	Production No.																
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		-	-	-	-	-	-	-	+	-	-	-	-	-	-	-	-



Product Insert

101.221-12 – including *Taq* pol., IFU-01

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“Instructions for Use” (IFU)

Lot No.: **60S**

Lot-specific information

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CELL LINE VALIDATION SHEET																			
DQB1 high resolution primer set																			
				Well															
				33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48
				201185033	201185034	201321435	201185036	201210237	201185038	201210239	201185040	201321441	201321442	201185043	201210244	201185045	201185046	201210247	201210248
IHW C cell line		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		-	-	-	-	-	-	-	-	-	-	-	-	-	-	



Product Insert

101.221-12 – including *Taq* pol., IFU-01

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“Instructions for Use” (IFU)

Lot No.: **60S**

Lot-specific information

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CELL LINE VALIDATION SHEET																		
DQB1 high resolution primer set																		
				Well														
				49	50	51	52	53	54	55	56	57	58	59	60	61	62	63
				201202649	201321450	201321451	201210252	201202653	201321454	201210255	201202656	201210257	201210258	201210259	201210260	201210261	201210262	201210263
IHC cell line		DQB1																
1	9001	SA	*05:01	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
2	9280	LK707	*06:01	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
3	9011	E4181324	*06:01	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
4	9275	GU373	*02:01	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
5	9009	KAS011	*05:02	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
6	9353	SM	*03:02	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
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	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
18	9257	32367	*06:02	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
19	9038	BM16	*03:01	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
20	9059	SLE005	*06:04	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
21	9064	AMALA	*03:01	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
22	9056	KOSE	*05:03	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
23	9124	IHL	*05:03	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
24	9035	JBUSH	*03:01	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
25	9049	IBW9	*02:02	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
26	9285	WT49	*02:01	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
27	9191	CH1007	*04:01	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
28	9320	BEL5GB	*02:02	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
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	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
40	9134	WHONP199	*02:02	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
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	-	-	-	-	-	-	-	-	-	-	-	-	-	-	



Product Insert

101.221-12 – including *Taq* pol., IFU-01101.221-12u – without *Taq* pol., IFU-02Visit www.olerup-ssp.com for

“Instructions for Use” (IFU)

Lot No.: **60S**

Lot-specific information

www.olerup-ssp.com**CERTIFICATE OF ANALYSIS****Olerup SSP® DQB1 high resolution for frequent alleles SSP**Product number: 101.221-12 – including *Taq* polymerase101.221-12u – without *Taq* polymeraseLot number: **60S**Expiry date: **2016-February-01**Number of tests: **12 tests**Number of wells per test: **63+ 1****Well specifications:**

Well No.	Production No.	Well No.	Production No.	Well No.	Production No.
1	2013-214-01	25	2011-850-25	49	2012-026-49
2	2011-850-02	26	2012-102-26	50	2013-214-50
3	2011-850-03	27	2011-850-27	51	2013-214-51
4	2011-850-04	28	2011-850-28	52	2012-102-52
5	2012-102-05	29	2011-850-29	53	2012-026-53
6	2012-102-06	30	2011-850-30	54	2013-214-54
7	2013-214-07	31	2011-850-31	55	2012-102-55
8	2013-214-08	32	2011-850-32	56	2012-026-56
9	2011-850-09	33	2011-850-33	57	2012-102-57
10	2013-214-10	34	2011-850-34	58	2012-102-58
11	2012-102-11	35	2013-214-35	59	2012-102-59
12	2012-102-12	36	2011-850-36	60	2012-102-60
13	2011-850-13	37	2012-102-37	61	2012-102-61
14	2011-850-14	38	2011-850-38	62	2012-102-62
15	2011-850-15	39	2012-102-39	63	2012-102-63
16	2011-850-16	40	2011-850-40		
17	2013-214-17	41	2013-214-41		
18	2012-026-18	42	2013-214-42		
19	2011-850-19	43	2011-850-43		
20	2011-850-20	44	2012-102-44		
21	2012-026-21	45	2011-850-45		
22	2011-850-22	46	2011-850-46		
23	2011-850-23	47	2012-102-47		
24	2011-850-24	48	2012-102-48		

The specificity of each primer solution of the kit has been tested against 48 well characterized IHWC cell line DNAs.

No DNAs carrying the alleles to be amplified by primer solutions 2, 5, 12-14, 17, 18, 37-43, 45, 48-51, 53, 54, 56 and 58 to 63 were available.

The specificities of the primers in primer solutions 2, 12, 14, 17, 18, 37-39, 41, 42, 45, 50, 51, 53 and 58 and 62 were tested by separately adding additional 5'-primers, respectively additional 3'-primers.

In primer solution 5, 13, 40, 43, 48 and 49 it was only possible to test the 3'-primers, the 5'-primers were not possible to test.

Product Insert

101.221-12 – including *Taq* pol., IFU-01101.221-12u – without *Taq* pol., IFU-02Visit www.olerup-ssp.com for
“Instructions for Use” (IFU)Lot No.: **60S**

Lot-specific information

www.olerup-ssp.com

In primer solution 54, 56, 59 to 61 and 63 it was only possible to test the 5'-primers, the 3'-primers were not possible to test.

In primer solutions 10, 11, 18, 22, 34, 41, 42, 50, 51 and 52 one to three 5'-primers were not possible to test.

In primer solutions 1, 4, 7, 8, 12, 14, 15, 17, 18, 35, 38, 39, 41, 42, 44, 45, 47, 51 and 57 one to three 3'-primers were not possible to test.

Additional primers in primer solutions 4, 30, 35, 44, 46, 47, 52 and 57 were tested by separately adding one additional 5'-primer, respectively one additional 3'-primer.

The negative control primer pairs, **Production No. 2013-165-01**, can detect contamination with PCR products diluted 10^{-7} .

Results: No false positive or false negative amplifications were obtained.

Date of approval: 2013-August-30

Approved by:

Production Quality Control

Product Insert

101.221-12 – including *Taq pol.*, IFU-01101.221-12u – without *Taq pol.*, IFU-02Visit www.olerup-ssp.com for
“Instructions for Use” (IFU)Lot No.: **60S**

Lot-specific information

www.olerup-ssp.com**Declaration of Conformity****Product name:** *Olerup* SSP® DQB1High**Product number:** 101.221-12/12u**Lot number:** 60S**Intended use:** DQB1 high resolution histocompatibility testing**Manufacturer:** *Olerup* SSP AB
Franzengatan 5
SE-112 51 Stockholm, Sweden
Phone: +46-8-717 88 27
Fax: +46-8-717 88 18

We, *Olerup* SSP AB, hereby declare that this product, to which this Declaration of Conformity relates is in conformity with the following Standard(s) and other normative document(s) ISO 9001:2008 and ISO 13485:2012, following the provisions of the 98/79/EC Directive on *in vitro* diagnostic medical devices, Annex III, as transposed into the national laws of the Member States of the European Union.

The Technical Documentation File is maintained at *Olerup* SSP AB, Franzengatan 5, SE-112 51 Stockholm, Sweden.

Notified Body: Lloyd's Register Quality Assurance Limited, Hiramford, Middlemarch Office Village, Siskin Drive, Coventry CV3 4FJ, United Kingdom. (Notified Body number: 0088.)

Stockholm, Sweden
2014-September-02

Daniel Malica
Head of QA and Regulatory Affairs

Product Insert

101.221-12 – including *Taq* pol., IFU-01

101.221-12u – without *Taq* pol., IFU-02

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Lot No.: **60S**

Lot-specific information

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Product Insert

101.221-12 – including *Taq* pol., IFU-01

101.221-12u – without *Taq* pol., IFU-02

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101.221-12 – including *Taq* pol., IFU-01

101.221-12u – without *Taq* pol., IFU-02

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101.221-12 – including *Taq* pol., IFU-01

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Lot No.: **60S**

Lot-specific information

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