

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.: **85N**

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:	85N
Expiry date:	2014-December-01
Number of tests:	12 tests
Number of wells per test:	59 + 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. 85N.

**CHANGES COMPARED TO THE PREVIOUS OLERUP SSP[®]
DQB1 HIGH RESOLUTION LOT (10M)**

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. 10M**).

Twelve wells have been added to the DQB1 high resolution for frequent alleles kit, wells **49 to 60**.

The Lot-specific information for DQB1 high resolution for frequent alleles including and without *Taq* polymerase is now 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
5	Moved	Moved	Exchanged positive control primer pair, primer pair moved to well 58 for decreased primer oligomer formation.
18	Added	-	Primer added for increased yield of HLA-specific PCR product.
26	Modified	Modified	Increased yield of HLA-specific PCR product.
35	Added	-	Primer added for increased yield of HLA-specific PCR product.

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37	Moved	Moved	Primer pair moved to well 57 for decreased primer oligomer formation.
48	Moved, added	Moved, added	Negative control moved to well 60, new primer pairs for the DQB1*03:32 and 04:07 alleles.
49	New	New	New primer pairs for the DQB1*03:33, 03:35 and 05:14 alleles.
50	New	New	New primer pairs for the DQB1*03:34, 03:38 and 03:37 alleles.
51	New	New	New primer pairs for the DQB1*02:06, *03:36 and 03:39 alleles.
52	New	New	New primer pair for the DQB1*04:08 allele.
53	New	New	New primer pair for the DQB1*05:09 allele.
54	New	New	New primer pairs for the DQB1*05:10 and 05:12 alleles.
55	New	New	New primer pair for the DQB1*06:41 allele.
56	New	New	New primer pairs for the DQB1*06:43, 06:44 and 06:47 alleles.
57	New	New	Primer pair from well 37.
58	New, modified	New	Primer pair from well 5, modified 5'-primers for improved specificity and yield of HLA-specific PCR product.
59	New	New	New primer pair for the DQB1*05:13 allele.
60	New	New	Negative control from well 48.

Change in revision R01 compared to R00:

1. The DQB1*03:05:02 and 03:05:04 alleles are not amplified by primer mix 11. This has been corrected in the Specificity and Interpretation Tables.

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Well 60 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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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*06:47 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 60 PCR reactions in a 64 well cut PCR plate. Wells 61 to 64 are empty

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

Wells 1 to 59 – DQB1 primers.

Well 60 – 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. ‘85N’.

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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UNIQUELY IDENTIFIED ALLELES

All the phenotypically different DQB1 alleles, i.e. DQB1*02:01 to 02:06, DQB1*03:01 to 03:39, DQB1*04:01 to 04:08, DQB1*05:01 to 05:14 and DQB1*06:01 to 06:47, recognized by the HLA Nomenclature Committee in January 2012¹ will give rise to unique amplification patterns by the primers in the DQB1 high resolution for frequent alleles typing kit.

The DQB1*06:33 and 06:37 alleles may be distinguished by the different sizes of the specific PCR products generated by primer mix 43.

The DQB1 typing kit cannot distinguish the following silent mutations: the DQB1*02:01:01-02:01:04 alleles, the DQB1*03:01:01:01-03:01:02 and 03:01:05-03:01:06 alleles, the DQB1*03:02:01-03:02:05 alleles, the DQB1*03:03:02:01-03:03:04 alleles, the DQB1*03:05:01-03:05:04 alleles, the *04:01:01-04:01:02 alleles, the DQB1*04:02:01-04:02:02 alleles, the DQB1*05:01:01:01-05:01:03 alleles, the DQB1*05:02:01 and 05:02:03 alleles, the DQB1*05:03:01:01-05:03:05 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 2012-January-12, release 3.7.0, www.ebi.ac.uk/imgt/hla.

RESOLUTION IN HOMO- AND HETEROZYGOTES

A total of 165 alleles generate 123 amplification patterns that can be combined in 7626 homozygous and heterozygous combinations. 799 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 7 columns: 6 columns of dashes representing alleles and 1 column of asterisks representing PCR product sizes. The table lists various combinations of alleles and their corresponding unique amplification patterns.



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--+-----	-----	-----	-----	-----	-----	*06:13, *06:14:02 = *06:14:02, *06:16
--+-----	-----	-----	-----	-----	-----	*06:13, *06:15 = *06:15, *06:16
--+-----	-----	-----	-----	-----	-----	*06:14:02, *06:20 = *06:14:02, *06:35
--+-----	-----	-----	-----	-----	-----	*06:15, *06:20 = *06:15, *06:35
--+-----	-----	-----	-----	-----	-----	*06:08:02, *06:36 = *06:21, *06:36
--+-----	-----	-----	-----	-----	-----	*06:08:02, *06:38 = *06:21, *06:38
--+-----	-----	-----	-----	-----	-----	*06:11:02, *06:33 = *06:32, *06:33
--+-----	-----	-----	-----	-----	-----	*06:30, *06:38 = *06:32, *06:38
--+-----	-----	-----	-----	-----	-----	*06:14:01, *06:41 = *06:14:02, *06:41
--+-----	-----	-----	-----	-----	-----	*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
--+-----	-----	-----	-----	-----	-----	*06:14:01, *06:31 = *06:14:02, *06:31
--+-----	-----	-----	-----	-----	-----	*06:13, *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
--+-----	-----	-----	-----	-----	-----	*06:13, *06:29 = *06:29, *06:29
--+-----	-----	-----	-----	-----	-----	*06:13, *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
--+-----	-----	-----	-----	-----	-----	*06:14:01, *06:28 = *06:14:02, *06:28
--+-----	-----	-----	-----	-----	-----	*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, *05:05 = *05:05, *05:05
--+-----	-----	-----	-----	-----	-----	*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
--+-----	-----	-----	-----	-----	-----	*05:03:01:01, *05:06 = *05:06, *05:06
--+-----	-----	-----	-----	-----	-----	*03:13, *06:04:01 = *03:13, *06:34
--+-----	-----	-----	-----	-----	-----	*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, *05:13 = *05:02:02, *05:13
--+-----	-----	-----	-----	-----	-----	*05:02:02, *05:05 = *05:03:01:01, *05:05
--+-----	-----	-----	-----	-----	-----	*05:02:01, *05:10 = *05:02:02, *05:10
--+-----	-----	-----	-----	-----	-----	*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
--+-----	-----	-----	-----	-----	-----	*05:01:01:01, *05:10 = *05:03:01:01, *05:12 = *05:10, *05:12
--+-----	-----	-----	-----	-----	-----	*05:01:01:01, *05:05 = *05:02:01, *05:11 = *05:05, *05:11
--+-----	-----	-----	-----	-----	-----	*06:01:01, *06:43 = *06:43, *06:43
--+-----	-----	-----	-----	-----	-----	*05:04, *05:06 = *05:06, *05:08
--+-----	-----	-----	-----	-----	-----	*05:02:01, *05:06 = *05:02:02, *05:06
--+-----	-----	-----	-----	-----	-----	*05:01:01:01, *05:07 = *05:07, *05:07
--+-----	-----	-----	-----	-----	-----	*06:04:01, *06:04:01 = *06:04:01, *06:05:02
--+-----	-----	-----	-----	-----	-----	*04:02:01, *04:03:01 = *04:02:01, *04:03:02 = *04:03:01, *04:03:01 = *04:03:01, *04:03:02
--+-----	-----	-----	-----	-----	-----	*04:01:01, *04:08 = *04:08, *04:08
--+-----	-----	-----	-----	-----	-----	*04:01:01, *04:07 = *04:07, *04:07
--+-----	-----	-----	-----	-----	-----	*04:01:01, *04:03:02 = *04:01:01, *04:06 = *04:03:02, *04:06 = *04:06, *04:06
--+-----	-----	-----	-----	-----	-----	*03:03:02:01, *03:39 = *03:39, *03:39



Product Insert

101.221.12 – including Taq pol., IFU-01

101.221.12u – without Taq pol., IFU-02

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--+-----	+-----	---+-----	-----	-----	-----	-----	-----	*03:03:02:01, *03:34 = *03:03:02:01, *03:38 = *03:38, *03:38
--+-----	+-----	---+-----	-----	-----	-----	-----	-----	*03:03:02:01, *03:31 = *03:31, *03:31
--+-----	+-----	---+-----	-----	-----	-----	-----	-----	*03:03:02:01, *03:05:01 = *03:03:02:01, *03:17 = *03:03:02:01, *03:20 = *03:05:01, *03:17 = *03:05:01, *03:20
--+-----	+-----	---+-----	-----	-----	-----	-----	-----	*03:02:01, *03:32 = *03:32, *03:32
--+-----	+-----	---+-----	-----	-----	-----	-----	-----	*05:03:01:01, *05:07 = *05:06, *05:07
+-----	+-----	-----	-----	-----	-----	-----	-----	*02:02, *02:06 = *02:06, *02:06
+-----	+-----	-----	-----	-----	-----	-----	-----	*02:01:01, *02:05 = *02:05, *02:05
+-----	+-----	-----	-----	-----	-----	-----	-----	*02:01:01, *02:04 = *02:04, *02:04
--+-----	+-----	---+-----	-----	-----	-----	-----	-----	*03:34, *03:34 = *03:34, *03:38
--+-----	+-----	---+-----	-----	-----	-----	-----	-----	*03:17, *03:20 = *03:20, *03:20
--+-----	+-----	---+-----	-----	-----	-----	-----	-----	*06:04:01, *06:36 = *06:36, *06:36
--+-----	+-----	---+-----	-----	-----	-----	-----	-----	*06:04:01, *06:17 = *06:04:01, *06:38
--+-----	+-----	---+-----	-----	-----	-----	-----	-----	*06:04:01, *06:04:02 = *06:04:02, *06:04:02 = *06:04:02, *06:05:02
--+-----	+-----	---+-----	-----	-----	-----	-----	-----	*06:02:01, *06:47 = *06:47, *06:47
--+-----	+-----	---+-----	-----	-----	-----	-----	-----	*06:02:01, *06:13 = *06:02:01, *06:16
--+-----	+-----	---+-----	-----	-----	-----	-----	-----	*06:02:01, *06:20 = *06:02:01, *06:35
--+-----	+-----	---+-----	-----	-----	-----	-----	-----	*05:03:01:01, *06:14:02 = *05:08, *06:14:02
--+-----	+-----	---+-----	-----	-----	-----	-----	-----	*05:03:01:01, *06:10 = *05:08, *06:10
--+-----	+-----	---+-----	-----	-----	-----	-----	-----	*06:04:01, *06:34 = *06:34, *06:34
--+-----	+-----	---+-----	-----	-----	-----	-----	-----	*06:02:01, *06:02:02 = *06:02:02, *06:02:02
--+-----	+-----	---+-----	-----	-----	-----	-----	-----	*04:03:01, *04:04 = *04:03:02, *04:04
--+-----	+-----	---+-----	-----	-----	-----	-----	-----	*04:03:02, *04:08 = *04:06, *04:08
--+-----	+-----	---+-----	-----	-----	-----	-----	-----	*04:03:02, *04:07 = *04:06, *04:07
--+-----	+-----	---+-----	-----	-----	-----	-----	-----	*04:03:02, *04:05 = *04:05, *04:06
--+-----	+-----	---+-----	-----	-----	-----	-----	-----	*04:01:01, *04:03:01 = *04:02:01, *04:06 = *04:03:01, *04:06
--+-----	+-----	---+-----	-----	-----	-----	-----	-----	*04:01:01, *04:04 = *04:02:01, *04:05
--+-----	+-----	---+-----	-----	-----	-----	-----	-----	*03:03:02:01, *03:30 = *03:30, *03:30
--+-----	+-----	---+-----	-----	-----	-----	-----	-----	*03:31, *03:34 = *03:31, *03:38
--+-----	+-----	---+-----	-----	-----	-----	-----	-----	*03:03:02:01, *06:35 = *03:31, *06:35
--+-----	+-----	---+-----	-----	-----	-----	-----	-----	*03:05:01, *03:34 = *03:05:01, *03:38
--+-----	+-----	---+-----	-----	-----	-----	-----	-----	*03:02:01, *03:34 = *03:02:01, *03:38 = *03:03:02:01, *03:37
--+-----	+-----	---+-----	-----	-----	-----	-----	-----	*03:02:01, *03:26 = *03:03:02:01, *03:11
--+-----	+-----	---+-----	-----	-----	-----	-----	-----	*03:02:01, *03:15 = *03:03:02:01, *03:07
--+-----	+-----	---+-----	-----	-----	-----	-----	-----	*03:02:01, *03:17 = *03:02:01, *03:20
+-----	+-----	-----	-----	-----	-----	-----	-----	*02:01:01, *05:06 = *02:04, *05:03:01:01 = *02:04, *05:06
--+-----	+-----	---+-----	-----	-----	-----	-----	-----	*03:33, *03:34 = *03:33, *03:38
--+-----	+-----	---+-----	-----	-----	-----	-----	-----	*03:33, *05:02:01 = *03:33, *05:14
--+-----	+-----	---+-----	-----	-----	-----	-----	-----	*03:23, *03:34 = *03:23, *03:38
--+-----	+-----	---+-----	-----	-----	-----	-----	-----	*03:26, *03:34 = *03:26, *03:38
--+-----	+-----	---+-----	-----	-----	-----	-----	-----	*03:15, *03:34 = *03:15, *03:38
--+-----	+-----	---+-----	-----	-----	-----	-----	-----	*03:17, *03:39 = *03:20, *03:39
--+-----	+-----	---+-----	-----	-----	-----	-----	-----	*03:17, *03:34 = *03:17, *03:38 = *03:20, *03:34 = *03:20, *03:38
--+-----	+-----	---+-----	-----	-----	-----	-----	-----	*03:17, *03:33 = *03:20, *03:33
--+-----	+-----	---+-----	-----	-----	-----	-----	-----	*03:17, *03:31 = *03:20, *03:31
--+-----	+-----	---+-----	-----	-----	-----	-----	-----	*03:17, *03:23 = *03:20, *03:23
--+-----	+-----	---+-----	-----	-----	-----	-----	-----	*03:17, *03:26 = *03:20, *03:26
--+-----	+-----	---+-----	-----	-----	-----	-----	-----	*03:15, *03:17 = *03:15, *03:20
--+-----	+-----	---+-----	-----	-----	-----	-----	-----	*06:13, *06:47 = *06:16, *06:47
--+-----	+-----	---+-----	-----	-----	-----	-----	-----	*06:20, *06:47 = *06:35, *06:47
--+-----	+-----	---+-----	-----	-----	-----	-----	-----	*06:04:01, *06:42 = *06:09, *06:17 = *06:09, *06:38 = *06:38, *06:42
--+-----	+-----	---+-----	-----	-----	-----	-----	-----	*06:04:01, *06:08:02 = *06:04:01, *06:21
--+-----	+-----	---+-----	-----	-----	-----	-----	-----	*06:04:02, *06:17 = *06:04:02, *06:38
--+-----	+-----	---+-----	-----	-----	-----	-----	-----	*06:04:01, *06:07:02 = *06:07:02, *06:36
--+-----	+-----	---+-----	-----	-----	-----	-----	-----	*06:04:01, *06:11:01 = *06:04:02, *06:11:01 =



Product Insert

101.221.12 – including Taq pol., IFU-01

101.221.12u – without Taq pol., IFU-02

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--+-----	-----	-----	-----	-----	-----	*06:14:01, *06:44 = *06:14:02, *06:44
--+-----	-----	-----	-----	-----	-----	*06:07:02, *06:08:01 = *06:36, *06:41
--+-----	-----	-----	-----	-----	-----	*06:04:01, *06:40 = *06:04:02, *06:40
--+-----	-----	-----	-----	-----	-----	*06:04:01, *06:31 = *06:04:02, *06:31
--+-----	-----	-----	-----	-----	-----	*06:03:01, *06:04:01 = *06:03:01, *06:04:02 = *06:39, *06:41
--+-----	-----	-----	-----	-----	-----	*06:02:01, *06:44 = *06:03:01, *06:47 = *06:44, *06:47
--+-----	-----	-----	-----	-----	-----	*06:02:01, *06:31 = *06:03:01, *06:20
--+-----	-----	-----	-----	-----	-----	*06:04:01, *06:28 = *06:04:02, *06:28
--+-----	-----	-----	-----	-----	-----	*06:03:02, *06:14:01 = *06:03:02, *06:14:02
--+-----	-----	-----	-----	-----	-----	*06:02:01, *06:03:02 = *06:02:02, *06:03:01 = *06:02:02, *06:03:02
--+-----	-----	-----	-----	-----	-----	*03:01:01:01, *06:17 = *03:22, *06:17
--+-----	-----	-----	-----	-----	-----	*03:01:01:01, *06:13 = *03:29, *06:13
--+-----	-----	-----	-----	-----	-----	*03:01:04, *03:24 = *03:24, *05:04
--+-----	-----	-----	-----	-----	-----	*03:01:04, *03:27 = *03:27, *05:04
--+-----	-----	-----	-----	-----	-----	*03:27, *06:01:01 = *03:27, *06:35
--+-----	-----	-----	-----	-----	-----	*03:34, *03:36 = *03:36, *03:38
--+-----	-----	-----	-----	-----	-----	*03:33, *03:36 = *03:35, *03:39
--+-----	-----	-----	-----	-----	-----	*03:34, *03:35 = *03:35, *03:38
--+-----	-----	-----	-----	-----	-----	*03:22, *03:34 = *03:22, *03:38
--+-----	-----	-----	-----	-----	-----	*03:21, *03:34 = *03:21, *03:38
--+-----	-----	-----	-----	-----	-----	*03:29, *03:34 = *03:29, *03:38
--+-----	-----	-----	-----	-----	-----	*03:01:01:01, *03:30 = *03:01:03, *03:30 = *03:29, *03:30
--+-----	-----	-----	-----	-----	-----	*03:01:04, *03:34 = *03:01:04, *03:38
--+-----	-----	-----	-----	-----	-----	*03:19, *04:01:01 = *03:19, *04:08
--+-----	-----	-----	-----	-----	-----	*03:03:02:01, *03:24 = *03:24, *03:39
--+-----	-----	-----	-----	-----	-----	*03:03:02:01, *03:27 = *03:27, *03:31
--+-----	-----	-----	-----	-----	-----	*03:09, *03:34 = *03:09, *03:38
--+-----	-----	-----	-----	-----	-----	*03:01:04, *03:05:01 = *03:01:04, *03:20
--+-----	-----	-----	-----	-----	-----	*03:05:01, *03:09 = *03:09, *03:20
--+-----	-----	-----	-----	-----	-----	*03:04, *03:34 = *03:04, *03:38
--+-----	-----	-----	-----	-----	-----	*03:01:01:01, *03:11 = *03:02:01, *03:09 = *03:09, *03:11
--+-----	-----	-----	-----	-----	-----	*03:01:04, *03:28 = *03:28, *05:04
--+-----	-----	-----	-----	-----	-----	*02:03, *03:01:01:01 = *02:03, *03:01:03
--+-----	-----	-----	-----	-----	-----	*03:06, *06:08:01 = *03:06, *06:08:02
--+-----	-----	-----	-----	-----	-----	*03:08, *06:03:01 = *03:08, *06:03:02
--+-----	-----	-----	-----	-----	-----	*06:20, *06:44 = *06:31, *06:47
--+-----	-----	-----	-----	-----	-----	*03:18, *03:24 = *03:18, *03:36
--+-----	-----	-----	-----	-----	-----	*03:06, *06:04:01 = *03:06, *06:04:02
--+-----	-----	-----	-----	-----	-----	*06:04:01, *06:44 = *06:04:02, *06:44
--+-----	-----	-----	-----	-----	-----	*06:03:02, *06:04:01 = *06:03:02, *06:04:02
--+-----	-----	-----	-----	-----	-----	*06:02:02, *06:44 = *06:03:02, *06:47
--+-----	-----	-----	-----	-----	-----	*06:02:02, *06:31 = *06:03:02, *06:20
--+-----	-----	-----	-----	-----	-----	*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
--+-----	-----	-----	-----	-----	-----	*03:24, *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, *06:29 = *03:29, *06:29
--+-----	-----	-----	-----	-----	-----	*03:28, *03:34 = *03:28, *03:38
--+-----	-----	-----	-----	-----	-----	*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
--+-----	-----	-----	-----	-----	-----	*03:01:01:01, *06:38 = *03:22, *06:04:01 = *03:22,



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---	----	-----	-----	-----	-----	-----	---	*06:38
---	----	-----	-----	-----	-----	-----	---	*03:01:01:01, *06:40 = *03:21, *06:40
---	----	-----	-----	-----	-----	-----	---	*03:22, *06:16 = *03:29, *06:24
---	----	-----	-----	-----	-----	-----	---	*03:01:04, *03:06 = *03:01:04, *03:25
+	----	-----	-----	-----	-----	-----	---	*02:02, *03:24 = *02:06, *03:24
+	----	-----	-----	-----	-----	-----	---	*02:02, *03:36 = *02:06, *03:01:01:01 = *02:06, *03:36
+	----	-----	-----	-----	-----	-----	---	*02:01:01, *03:28 = *02:02, *03:28
---	----	-----	-----	-----	-----	-----	---	*03:01:01:01, *06:14:01 = *03:01:04, *06:14:01
---	----	-----	-----	-----	-----	-----	---	*03:24, *06:28 = *03:36, *06:28
---	----	-----	-----	-----	-----	-----	---	*03:28, *06:04:01 = *03:28, *06:34

*02:01:01 = *02:01:01-02:01:04

*03:01:01:01 = *03:01:01:01-03:01:02 and 03:01:05-03:01:06

*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

*06:33 = *06:33 and 06:37



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

Specificities and sizes of the PCR products of the 59+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, 02:04-02:06
2⁴	85 bp	430 bp	*02:03
3	145 bp	515 bp	*02:01:01-02:01:04, 02:04-02:05, 03:01:01-01-03:23, 03:25-03:39, 04:01:01-04:08, 05:01:01-01-05:13, 06:01:01-06:37, 06:39-06:44, 06:47
4⁸	140 bp, 195 bp	430 bp	*02:02-02:03, 02:06, 03:28
5⁹	145 bp, 180 bp	515 bp	*02:04, 05:06-05:07
6⁵	165 bp	515 bp	*03:01:01-01-03:01:06, 03:04, 03:09, 03:13, 03:16, 03:19, 03:21-03:22, 03:24, 03:27-03:29, 03:35-03:36
7	220 bp	515 bp	*03:01:01-01-03:01:06, 03:04, 03:09-03:10, 03:13-03:14, 03:16, 03:19, 03:21-03:22, 03:24, 03:27-03:29, 03:35-03:36
8	135 bp	515 bp	*02:01:01-02:02, 02:04-02:06, 03:02:01-03:02:05, 03:07-03:08, 03:11, 03:18, 03:32, 03:37, 06:29
9^{6,10}	175 bp, 220 bp	515 bp	*02:01:01-02:06, 03:02:01-03:03:04, 03:05:01-03:08, 03:11-03:12, 03:13 [?] -03:14 [?] , 03:15, 03:16 [?] -03:17 [?] , 03:18-03:20, 03:23, 03:25-03:26, 03:30-03:34, 03:37-03:39, 04:01:01-04:08
10⁷	135 bp	430 bp	*03:04, 03:14
11^{4,11}	95 bp, 130 bp	430 bp	*03:05:01, 03:05:03, 03:17, 03:20
12^{4,12}	115 bp, 135 bp	430 bp	*03:06, 03:08, 03:25, 06:02:02, 06:03:02
13^{4,13}	110 bp, 140 bp	430 bp	*03:07, 03:15-03:16
14¹⁴	135 bp, 260 bp	430 bp	*03:09, 03:11, 03:26
15¹⁵	135 bp, 250 bp	430 bp	*03:10, 03:12, 03:14, 03:27, 06:01:01-06:01:06, 06:43
16	260 bp	515 bp	*03:01:01-01-03:01:06, 03:04, 03:09-03:10, 03:12-03:14, 03:16, 03:19, 03:21-03:22, 03:24, 03:27-03:29, 03:35-03:36
17^{4,8,16}	110 bp, 165 bp, 195 bp, 300 bp	430 bp	*03:13, 03:28, 06:23, 06:34

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18^{7,17}	130 bp, 190 bp, 220 bp	430 bp	*03:18, 03:24, 06:28
19	135 bp	515 bp	*03:01:01:01-03:15, 03:17-03:22, 03:24, 03:26-03:39
20⁷	130 bp	430 bp	*02:03, 03:01:01:01-03:01:02, 03:01:04- 03:01:06, 03:03:02:01-03:03:04, 03:06, 03:09-03:10, 03:12-03:13, 03:15-03:17, 03:19-03:24, 03:26-03:31, 03:33-03:36, 03:38-03:39
21⁷	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
23	135 bp	430 bp	*05:01:01:01-05:01:03, 05:07, 05:11- 05:12
24⁴	120 bp	430 bp	*05:02:01-05:02:03, 05:05, 05:14
25⁴	95 bp	515 bp	*05:02:02, 05:03:01:01-05:03:05, 05:06, 05:08-05:10, 05:13
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 [?] -06:33 [?] , 06:35 [?] , 06:37 [?] , 06:39, 06:40 [?] , 06:44, 06:47
27	210 bp	430 bp	*06:01:01-06:02:02, 06:05:02 [?] -06:06 [?] , 06:10-06:11:02, 06:13, 06:16, 06:18- 06:20, 06:24, 06:29, 06:33, 06:35, 06:37, 06:43, 06:47
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, 06:47
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^{5,18}	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	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
33⁷	170 bp	430 bp	*06:04:01-06:05:02, 06:06 ^w , 06:07:01- 06:07:02, 06:09, 06:18, 06:25, 06:27, 06:32, 06:34, 06:36, 06:38-06:39

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34 ^{4,19}	95 bp, 130 bp	430 bp	*05:07, 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, 06:42
35 ²⁰	160 bp, 255 bp	515 bp	*03:27, 03:31, 06:05:01, 06:05:02 [?] -06:06 [?] , 06:20, 06:31, 06:35
36	210 bp	430 bp	*06:05:01, 06:05:02 [?] -06:06 [?] , 06:09, 06:12, 06:15, 06:22, 06:42
37 ⁵	180 bp	430 bp	*06:06
38 ^{4,6,21}	100 bp, 130 bp, 185 bp	430 bp	*03:01:04, 05:04, 05:08, 06:10, 06:14:01-06:14:02
39	180 bp	430 bp	*03:29-03:30, 06:13, 06:16, 06:22, 06:29
40 ^{4,22}	95 bp, 150 bp	430 bp	*03:21, 06:40
41 ^{6,23}	185 bp, 205 bp	430 bp	*03:22, 06:17, 06:24, 06:30, 06:38, 06:42
42 ^{4,24}	110 bp, 135 bp, 195 bp	515 bp	*03:06, 03:25, 04:03:01-04:03:02, 04:06, 06:10, 06:25
43 ^{4,6,25}	110 bp, 155 bp, 185 bp, 215 bp, 250 bp	515 bp	*02:05, 06:26N, 06:33, 06:37
44	160 bp	430 bp	*06:02:01-06:02:02, 06:10, 06:13-06:16, 06:20, 06:23-06:24, 06:29, 06:33, 06:37, 06:47
45	130 bp	515 bp	*06:07:01-06:07:02, 06:15, 06:36
46 ²⁶	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 ⁵	155 bp	430 bp	*03:30, 04:01:01-04:03:02, 04:06-04:08, 06:19
48 ⁷	165 bp	430 bp	*03:32, 04:07
49 ^{4,27}	110 bp, 155 bp	430 bp	*03:33, 03:35, 05:14
50 ²⁸	200 bp, 240 bp	430 bp	*03:34, 03:37-03:38
51 ^{4,29}	125 bp, 245 bp	430 bp	*02:06, 03:24, 03:36, 03:39
52 ⁴	95 bp	430 bp	*03:06 [?] -03:08 [?] , 03:11 [?] -03:18 [?] , 03:19, 03:20 [?] , 03:23 [?] , 03:26 [?] , 03:37 [?] , 04:08
53	190 bp	430 bp	*05:09
54	190 bp	430 bp	*05:10, 05:12
55 ⁴	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, 06:10 [?] -06:11:02 [?] , 06:12, 06:13 [?] -06:33 [?] , 06:34, 06:35 [?] , 06:36, 06:37 [?] , 06:38, 06:40 [?] , 06:41-06:42
56 ^{4,30}	100 bp, 220 bp	430 bp	*06:43-06:44, 06:47

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57⁵	175 bp	430 bp	*03:01:01:01-03:01:06, 03:04, 03:06 ² -03:08 ² , 03:09-03:10, 03:11 ² -03:18 ² , 03:20 ² , 03:21-03:22, 03:23 ² , 03:24, 03:26 ² , 03:27-03:29, 03:33 ² -03:34 ² , 03:35-03:36, 03:37 ²	
58	185 bp	430 bp	*05:05, 05:11	
59⁴	95 bp	430 bp	*05:13	
60³¹	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 specific PCR products of more than one length this is indicated if the size difference is 20 base pairs or more. Size differences shorter than 20 base pairs are not given. For high resolution SSP kits the respective lengths of the specific PCR product(s) of the alleles amplified by these primer mixes are given.

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 DQB alleles only second exon nucleotide sequences are 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 of codons 87 to 92 are conserved within allelic groups.

⁴Specific PCR fragments shorter than 125 base pairs are less intense and not as sharp as longer specific bands.

⁵Primer mixes 6, 26, 30, 37, 47 and 57 may yield less specific PCR products than the other DQB1 primer mixes, most pronounced in primer mix 26.

⁶Primer mixes 9, 38, 41 and 43 may give rise to primer oligomer formation.

⁷Primer mixes 10, 18, 20, 21, 33 and 48 may have a tendency of nonspecific amplifications.

⁸Primer mix 4: Specific PCR fragment of 140 bp in the DQB1*02:02-02:03 and 02:06 alleles. Specific PCR fragment of 185 bp in the DQB1 *03:28 allele.

⁹Primer mix 5: Specific PCR fragment of 145 bp in the DQB1*02:04 allele. Specific PCR fragment of 180 bp in the DQB1*05:06-05:07 alleles.

¹⁰Primer mix 9: Specific PCR fragment of 175 bp in DQB1*03:05:01-03:05:04, 03:13²-03:14², 03:16²-03:17², 03:19, 04:01:01-04:02 and 04:04-04:08 alleles. Specific PCR fragment of 220 bp in the DQB1*02:01:01-02:06 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,

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03:30-03:34, 03:37-03:39 and 04:03:01-04:03:02 alleles (both specific PCR fragments may not be obtained).

¹¹Primer 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, 03:05:03 and 03:17 alleles.

¹²Primer mix 12: 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.

¹³Primer 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.

¹⁴Primer 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.

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

¹⁶Primer mix 17: Specific PCR fragment of 110 bp in the DQB1*06:23 allele. Specific PCR fragment of 165 bp in the DQB1*03:13 allele. Specific PCR fragment of 195 bp in the DQB1*03:28 allele. Specific PCR fragment of 300 bp in the DQB1*06:34 allele.

¹⁷Primer 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.

¹⁸Primer 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.

¹⁹Primer 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 and 06:42 alleles.

²⁰Primer 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 and 06:31 alleles.

²¹Primer 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 and 05:08 alleles. Specific PCR fragment of 185 bp in the DQB1*06:10 allele.

²²Primer 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.

²³Primer mix 41: Specific PCR fragment of 185 bp in the DQB1*06:17, 06:24, 06:30, 06:38 and 06:42 alleles. Specific PCR fragment of 205 bp in the DQB1*03:22 allele.

²⁴Primer mix 42: Specific PCR fragment of 110 bp in the DQB1*04:06 allele. Specific PCR fragment of 135 bp in the DQB1*06:10 and 06:25 alleles. Specific PCR fragment of 195 bp in the DQB1*03:06, 03:25 and 04:03:01- 04:03:02 alleles.

²⁵Primer 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.

²⁶Primer 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 *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).

²⁷Primer 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.

²⁸Primer mix 50: PCR fragment of 200 bp in the DQB1*03:37-03:38 allele. Specific PCR fragment of 240 bp in the DQB1*03:34 allele.

²⁹Primer mix 51: 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 allele.

³⁰Primer 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.

³¹Primer mix 60 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.: **85N**

Lot-specific information

www.olerup-ssp.com

INTERPRETATION TABLE																																
DQB1 high resolution SSP typing																																
Amplification patterns of the DQB1*02:01 to DQB1*06:47 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	135	95	115	110	135	135	260	260	195	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	515	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																																
*02:01:01-02:01:04	1		3					8	9																							
*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																							
*03:01:01-03:01:02, 03:01:05-03:01:06			3			6	7									16				19	20											
*03:01:03			3			6	7									16				19												
*03:01:04			3			6	7									16				19	20											
*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, 03:05:03			3						9		11									19												
*03:05:02, 03:05:04			3						9											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											
*03:11			3					8	9					14						19												
*03:12			3						9						15	16				19	20											
*03:13			3			6	7		?						16	17				19	20											
*03:14			3				7		?	10					15	16				19												
*03:15			3						9				13							19	20											
*03:16			3			6	7		?				13		16					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.: **85N**

Lot-specific information

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INTERPRETATION TABLE																																																											
DQB1 high resolution SSP typing																																																											
Amplification patterns of the DQB1*02:01 to DQB1*06:47 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	Neg. Control																															
170				180				205	185			130	160	155	165	155	110		95	190	190	115	220	100	175	185	95	Length of spec. PCR product(s)																															
	130	255	210		130	180	150			195	135		210				240	245											Length of int. pos. control ¹																														
										250	215																		Well No. DQB1 allele ²																														
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	*02:01:01-02:01:04																																	
																												*02:02																															
																												*02:03																															
																												*02:04																															
										43																		*02:05																															
																		51										*02:06																															
																												*03:01:01:01-03:01:02, 03:01:05-03:01:06																															
																										57			*03:01:03																														
																										57			*03:01:04																														
																												*03:02:01-03:02:05																															
																												*03:03:02:01-03:03:04																															
																										57			*03:04																														
																												*03:05:01, 03:05:03																															
																												*03:05:02, 03:05:04																															
										42																		*03:06																															
																												*03:07																															
																												*03:08																															
																												*03:09																															
																												*03:10																															
																												*03:11																															
																												*03:12																															
																												*03:13																															
																												*03:14																															
																												*03:15																															
																												*03:16																															
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	Well No.																															



Product Insert

101.221.12 – including *Taq* pol., IFU-01

Visit www.olerup-ssp.com for

101.221.12u – without *Taq* pol., IFU-02

“Instructions for Use” (IFU)

Lot No.: **85N**

Lot-specific information

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Length of spec. PCR product(s)	120	85	145	140	145	165	220	135	175	135	95	115	110	135	135	260	110	130	135	130	205	205	135	120	95	115	210	185	130	160	170	210	
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	
			3						?		11									19	20												
*03:17			3						8	9										18	19												
*03:18			3			6	7		9							16				19	20												
*03:19			3						9		11										19	20											
*03:20			3			6	7		9							16				19	20												
*03:21			3			6	7		9							16				19	20												
*03:22			3			6	7		9							16				19	20												
*03:23			3						9												20									30			
*03:24			3			6	7		9		12					16			18	19	20												
*03:25			3						9																						30		
*03:26			3						9				14							19	20												
*03:27			3			6	7		9						15	16				19	20												
*03:28			3	4		6	7		9							16	17			19	20												
*03:29			3			6	7		9							16				19	20												
*03:30			3						9											19	20												
*03:31			3						9											19	20												
*03:32			3					8	9											19													
*03:33			3						9											19	20												
*03:34			3						9											19	20												
*03:35			3			6	7		9							16				19	20												
*03:36			3			6	7		9							16				19	20												
*03:37			3					8	9											19													
*03:38			3						9											19	20												
*03:39			3						9											19	20												
*04:01:01-04:01:02			3						9													21											
*04:02:01-04:02:02			3						9														22										
*04:03:01			3						9														22										
*04:03:02			3						9																								
*04:04			3						9														22								30		
*04:05			3						9													21									30		
*04:06			3						9													21											
*04:07			3						9													21											
*04:08			3						9													21											
*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							
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	



Product Insert

101.221.12 – including *Taq* pol., IFU-01

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“Instructions for Use” (IFU)

Lot No.: **85N**

Lot-specific information

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170	95	160	210	180	100	180	95	185	110	110	160	130	160	155	165	110	200	125	95	190	190	115	100	175	185	95	Neg. Control	Length of spec. PCR product(s)	
	130	255			130		150	205	135	110			210			155	240	245					220						
					185				195	185																			
									250	215																			
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	Well No.	
																		?						?				*03:17	
																		?						?				*03:18	
																		52										*03:19	
																		?						?				*03:20	
							40																	57				*03:21	
								41																57				*03:22	
																		?						?				*03:23	
																	51							57				*03:24	
									42																			*03:25	
																		?						?				*03:26	
	35																							57				*03:27	
																								57				*03:28	
								39																57				*03:29	
							39							47														*03:30	
	35																											*03:31	
															48													*03:32	
																49										?		*03:33	
																	50									?		*03:34	
																49								57				*03:35	
																		51						57				*03:36	
																	50	?						?				*03:37	
																	50											*03:38	
																		51										*03:39	
														47														*04:01:01-04:01:02	
														47														*04:02:01-04:02:02	
									42					47														*04:03:01	
									42					47														*04:03:02	
																												*04:04	
																												*04:05	
									42					47														*04:06	
														47	48													*04:07	
														47					52									*04:08	
																												*05:01:01:01-05:01:03	
																												*05:02:01, 05:02:03	
																												*05:02:02	
																												*05:03:01:01-05:03:05	
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	Well No.	



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.: **85N**

Lot-specific information

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Length of spec. PCR product(s)	www.olerup-ssp.com																															
	120	85	145	140	145	165	220	135	175	135	95	115	110	135	135	260	110	130	135	130	205	205	135	120	95	115	210	185	130	160	170	210
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
*05:04			3																													
*05:05			3																					24								
*05:06			3		5																					25						
*05:07			3		5																			23								
*05:08			3																							25						
*05:09			3																							25						
*05:10			3																							25						
*05:11			3																								23					
*05:12			3																								23					
*05:13			3																								25					
*05:14																									24							
*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
*06:08:01			3																								?			30	31	
*06:08:02			3																								?				31	
*06:09			3																													
*06:10			3																								?	27				
*06:11:01			3																								?	27		30		
*06:11:02			3																								?	27	29	30	31	
*06:12			3																												31	
*06:13			3																								?	27				
*06:14:01			3																								?	28	29		31	
*06:14:02			3																								?	28				
*06:15			3																								?	28				
*06:16			3																								?	27	28			
*06:17			3																									?				32
*06:18			3																									?	27			
*06:19			3																								?	27	28			
*06:20			3																								?	27	28			
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



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.: **85N**

Lot-specific information

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170	95	160	210	180	100	180	95	185	110	110	160	130	160	155	165	110	200	125	95	190	190	115	100	175	185	95	Neg. Control	Length of spec. PCR product(s)	
	130	255			130		150	205	135	155			210			155	240	245					220						
					185				195	185																			
									250	215																			
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	Well No.	
					38																								*05:04
																									58				*05:05
																													*05:06
	34																												*05:07
					38																								*05:08
																					53								*05:09
																						54							*05:10
																									58				*05:11
																						54							*05:12
																										59			*05:13
																49													*05:14
																													*06:01:01-06:01:06
											44																		*06:02:01
											44																		*06:02:02
													46																*06:03:01
													46																*06:03:02
33	34																						55					*06:04:01, 06:04:03	
33	34																						55					*06:04:02	
33	34	35	36																				?					*06:05:01	
33	?	?																					?					*06:05:02	
w	34	?	?	37																			?					*06:06	
33													45										?					*06:07:01	
33													45										55					*06:07:02	
	34												46										?					*06:08:01	
	34												46										?					*06:08:02	
33	34		36																				55					*06:09	
					38				42	44													?					*06:10	
																							?					*06:11:01	
																							?					*06:11:02	
	34		36																				55					*06:12	
						39					44												?					*06:13	
					38						44		46										?					*06:14:01	
					38						44		46										?					*06:14:02	
			36								44	45											?					*06:15	
						39					44												?					*06:16	
	34							41															?					*06:17	
33	34																						?					*06:18	
														47									?					*06:19	
		35									44												?					*06:20	
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	Well No.	



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.: **85N**

Lot-specific information

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Length of spec. PCR product(s)	120	85	145	140	145	165	220	135	175	135	95	115	110	135	135	260	110	130	135	130	205	205	135	120	95	115	210	185	130	160	170	210
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
*06:21			3																								?				31	32
*06:22			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, 06:37 ³			3																								?	27	28			
*06:34			3														17															32
*06:35			3																								?	27				
*06:36			3																													32
*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	
*06:47			3																								26	27	28			
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



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.: **85N**

Lot-specific information

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

Primer mix 9: Specific PCR fragment of 175 bp in DQB1*03:05:01-03:05:04, 03:13[?]-03:14[?], 03:16[?]-03:17[?], 03:19, 04:01:01-04:02 and 04:04-04:08 alleles. Specific PCR fragment of 220 bp in the DQB1*02:01:01-02:06 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, 03:37-03:39 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, 03:05:03 and 03:17 alleles.

Primer mix 12: 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, 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*03:13 allele. Specific PCR fragment of 195 bp in the DQB1*03:28 allele. 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 and 06:42 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 and 06:31 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 and 05:08 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*06:17, 06:24, 06:30, 06:38 and 06:42 alleles. Specific PCR fragment of 205 bp in the DQB1*03:22 allele.

Primer mix 42: Specific PCR fragment of 110 bp in the DQB1*04:06 allele. Specific PCR fragment of 135 bp in the DQB1*06:10 and 06:25 alleles. Specific PCR fragment of 195 bp in the DQB1*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 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 *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 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 allele. Specific PCR fragment of 240 bp in the DQB1*03:34 allele.

Primer mix 51: 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 allele.

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.

'w', might be weakly amplified.

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

Product Insert

101.221.12 – including *Taq* pol., IFU-01

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“Instructions for Use” (IFU)

Lot No.: **85N**

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	135	95	115
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'		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'	62(282) 5'-CTA 3'
				135(500) 5'-ggC 3'	169(604) 5'-gAC 3'				185(650) 5'-CgA 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
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'-TTA 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'-ggg 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'						
					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

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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'					86(353) 5'-ACC 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	110	110	160	130	160	155	165
		130		150	205	135	155			210		
		185				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'	130(485) 5'-CCA 3'	54(259) 5'-ggT 3'	28(181) 5'-CCT 3'		154(558) 5'-ACT 3'			144(529) 5'-CCg 3'
		135(500) 5'-TgA 3'			133(494) 5'-TCA 3'		38(210) 5'-gTg 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'	56(265) 5'-gCT 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'	185(650) 5'-Cgg 3'	77(327) 5'-ACg 3'	86(353) 5'-ACg 3'		186(653) 5'-CCg 3'	86(353) 5'-ACg 3'		
		56(265) 5'-gCT 3'	57(266) 5'-CAA 3'									
		167(596) 5'-CAT 3'	59(274) 5'-gTT 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.: **85N**

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	190	115	100	175	185	95	
Length of int. pos. control ¹	430	430	430	430	430	430	515	430	430	430	430	
5'-primer(s) ²	128(481) 5'-AAA 3'	19(154) 5'-ACA 3'	23(166) 5'-gCA 3'	167(596) 5'-gCA 3'	36(205) 5'-Agg 3'	26(173) 5'-ggg 3'	130(485) 5'-CCA 3'	13(134) 5'-ggC 3'	139(514) 5'-CAA 3'	38(210) 5'-gCA 3'	13(136) 5'-gCC 3'	
						135(500) 5'-TgA 3'		154(558) 5'-ACT 3'		38(210) 5'-gCg 3'		
3'-primer(s) ³	169(604) 5'-gAC 3'	86(353) 5'-gCT 3'	55(260) 5'-gCg 3'	185(650) 5'-CgA 3'	86(353) 5'-ACg 3'	77(328) 5'-CAA 3'	154(558) 5'-AAA 3'	73(314) 5'-CCA 3'	185(650) 5'-Cgg 3'	86(353) 5'-ACg 3'	32(191) 5'-TAC 3'	
			55(260) 5'-gCg 3'			182(642) 5'-ggT 3'		174(618) 5'-ACT 3'				
			127(477) 5'-TTC 3'									
			169(604) 5'-gAT 3'									
Well No.	49	50	51	52	53	54	55	56	57	58	59	60

Negative Control⁴

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 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 60 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.



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“Instructions for Use” (IFU)

Lot No.: **85N**

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
				201185001	201185002	201185003	201185004	201202605	201185006	201185007	201185008	201185009	201185010	201185011	201185012	201185013	201185014	201185015	201185016
IHC 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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101.221.12u – without *Taq* pol., IFU-02

“Instructions for Use” (IFU)

Lot No.: **85N**

Lot-specific information

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CELL LINE VALIDATION SHEET				Well															
DQB1 high resolution primer set																			
			Production No.	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48
	IHW C cell line		DQB1	201185033	201185034	201202635	201185036	201202637	201185038	201185039	201185040	201185041	201185042	201185043	201185044	201185045	201185046	201185047	201202648
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

Visit www.olerup-ssp.com for

101.221.12u – without *Taq* pol., IFU-02

“Instructions for Use” (IFU)

Lot No.: **85N**

Lot-specific information

www.olerup-ssp.com

CELL LINE VALIDATION SHEET														
DQB1 high resolution primer set														
				Well										
				49	50	51	52	53	54	55	56	57	58	59
				201202649	201202650	201202651	201202652	201202653	201202654	201202655	201202656	201202657	201202658	201202659
IHWC 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		-	-	-	-	-	-	-	-	-	-



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.: **85N**

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* polymerase

Lot number: 85N

Expiry date: 2014-December-01

Number of tests: 12 tests

Number of wells per test: 59 + 1

Well specifications:

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

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, 58 and 59 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 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.

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

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

Product Insert

101.221.12 – including *Taq* pol., IFU-01

101.221.12u – without *Taq* pol., IFU-02

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

Lot No.: **85N**

Lot-specific information

www.olerup-ssp.com

In primer solutions 4, 14, 15, 17, 18, 35, 38, 39, 41, 45 and 51 one or three 3'-primer was not possible to test.

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

The negative control primer pairs, **Production No. 2012-002-01**, can detect contamination with PCR products diluted 10^{-7} .

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

Date of approval: 2012-July-06

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.: **85N**

Lot-specific information

www.olerup-ssp.com**Declaration of Conformity****Product name:** *Olerup* SSP® DQB1High**Product number:** 101.221-12/12u**Lot number:** 85N**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 13485:2003, 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
2012-July-06

Ann-Cathrin Jareman
Head of QA and Regulatory Affairs

DQB1 high resolution for frequent alleles

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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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“Instructions for Use” (IFU)

Lot No.: **85N**

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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Product Insert

101.221.12 – including *Taq* pol., IFU-01

101.221.12u – without *Taq* pol., IFU-02

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Product Insert

101.221.12 – including *Taq* pol., IFU-01

101.221.12u – without *Taq* pol., IFU-02

Visit www.olerup-ssp.com for
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Lot No.: **85N**

Lot-specific information

www.olerup-ssp.com

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For information on *Olerup* SSP distributors worldwide, contact **Olerup GmbH**.