

DQB1 high resolution for frequent alleles  
101.221-12 – licensed for PCR  
101.221-12u – not licensed for PCR  
Lot No.: **Y37**

1

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## **Olerup SSP™ DQB1 high resolution for frequent alleles**

**Product number:** 101.221-12 – licensed for PCR  
101.221-12u – not licensed for PCR  
**Lot number:** Y37  
**Expiry date:** 2009-September-01  
**Number of tests:** 12 tests  
**Number of tubes per test:** 47 + 1  
**Storage - pre-aliquoted primers:** dark at -20°C  
- PCR Master Mix: -20°C

**This Product Description is only valid for Lot No. Y37.**

### **CHANGES COMPARED TO THE PREVIOUS *OLERUP SSP™* DQB1 HIGH RESOLUTION LOT**

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 (**Lot No. V24**) was made.

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

<b>Tube</b>	<b>5'-primer</b>	<b>3'-primer</b>	<b>rationale</b>
4	Added	Added	Primer pair added for the DQB1*0205 allele.
5	Added	Added	Primer pair added for the DQB1*0505 allele.
8	-	Modified	Increased yield of specific PCR product.
9	Added	Added	Primer pair added for the DQB1*0319 allele.
10	-	Modified	Increased yield of specific PCR product.
11	Added	Added	Primer pair added for the DQB1*0330 allele.
17	Added	Added	Primer pair added for the DQB1*0634 allele.
43	Added	-	Primer added for the DQB1*0633 allele.
47		Modified	Increased yield of specific PCR product.

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Well **48** 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
<b>5'-primer<sup>1</sup></b>	<b>164</b>	<b>340</b>	<b>440</b>	<b>45</b>	<b>45</b>	<b>43</b>
	5'-CAC <sup>3'</sup>	5'-Agg <sup>3'</sup>	5'-TTA <sup>3'</sup>	5'-Tg g <sup>3'</sup>	5'-Tg g <sup>3'</sup>	5'-Tg g <sup>3'</sup>
<b>3'-primer<sup>2</sup></b>	<b>231</b>	<b>2<sup>nd</sup> I</b>	<b>507</b>	<b>59</b>	<b>58</b>	<b>57</b>
	5'-TgC <sup>3'</sup>	5'-AAA <sup>3'</sup>	5'-TTg <sup>3'</sup>	5'-CTC <sup>3'</sup>	5'-ggC <sup>3'</sup>	5'-CTC <sup>3'</sup>
<b>A*</b>	<b>+</b>	<b>+</b>	<b>+</b>			
<b>B*</b>	<b>+</b>	<b>+</b>	<b>+</b>			
<b>Cw*</b>	<b>+</b>	<b>+</b>	<b>+</b>			
<b>DRB1</b>				<b>+</b>	<b>+</b>	
<b>DRB3</b>				<b>+</b>	<b>+</b>	
<b>DRB5</b>				<b>+</b>		
<b>DQB1</b>					<b>+</b>	
<b>DPB1</b>						<b>+</b>

<sup>1</sup>The nucleotide position for HLA class I genes and the codon for HLA class II genes, in the 2<sup>nd</sup> or 3<sup>rd</sup> exon or the 2<sup>nd</sup> intron, matching the specificity-determining 3'-end of the primer is given. Nucleotide numbering as in *Tissue Antigens* 1998, 51:II, 417-466. The sequence of the 3 terminal nucleotides of the primer is given.

<sup>2</sup>The nucleotide position for HLA class I genes and the codon for HLA class II genes, in the 2<sup>nd</sup> or 3<sup>rd</sup> exon, matching the specificity-determining 3'-end of the primer is given in the anti-sense direction. Nucleotide numbering as in *Tissue Antigens* 1998, 51:II, 417-466. The sequence of the 3 terminal nucleotides of the primer is given.

## PRODUCT DESCRIPTION

### DQB1 SSP typing

#### CONTENT

The primer set contains 5'- and 3'-primers for identifying the DQB1\*0201 to DQB1\*0634 alleles.

The primer solutions are pre-aliquoted into 0.2 ml PCR tubes. Each tube in the set contains a dried primer solution consisting of a specific primer mix, i.e. allele- and group-specific primers as well as a **control primer pair** matching non-allelic sequences.

**PCR Master Mix complete with Taq**, Taq polymerase, nucleotides, buffer, glycerol and cresol red, as well as PCR lids are included in the licensed kit.

**PCR Master Mix without Taq**, nucleotides, buffer, glycerol and cresol red, as well as PCR lids are included in the unlicensed kit.

48 PCR reactions with a reaction volume of 10 µl are performed per sample.

**Note:** The pellets in the tubes may vary in form and colour. This does not affect the performance of the product.

*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 48 PCR reactions in a 48 well cut PCR plate.

1	2	3	4	5	6	7	8
9	10	11	12	13	14	15	16
17	18	19	20	21	22	23	24
25	26	27	28	29	30	31	32
33	34	35	36	37	38	39	40
41	42	43	44	45	46	47	48

Wells 1 to 47 – DQB1 primers.

Well 48 – Negative Control.

The 48 well cut PCR plate is marked with 'DQB1 "high" Y37'.

Well No. 1 is marked with '1'.

The PCR plates are covered with a PCR-compatible foil.

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

#### INTERPRETATION

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

<sup>61</sup>*Nomenclature for factors of the HLA system, 1998. Tissue Antigens 1999; 53: 407-446.*

DQB1 alleles listed on the IMGT/HLA web page 2007-October-05, release 2.19.0, www.ebi.ac.uk/imgt/hla.

### RESOLUTION IN HOMO- AND HETEROZYGOTES

The 66 DQB1 alleles generate 72 amplification patterns, the DQB1\*030101/02 and 030103, the DQB1\*050201 and 050201, the DQB1\*060401 and 060402, the DQB1\*060501 and 060502, the DQB1\*060801 and 060802, and the DQB1\*061101 and 061102 alleles generate different amplification patterns, can be combined in 2 628 homozygous and heterozygous combinations. 469 of these genotypes do not give rise to unique amplification patterns. (The different lengths of the specific PCR products in lanes 4, 5, 9, 11, 13, 14, 17, 18, 35, 38, 43 and 46 were not considered in these calculations.)

++++---+ +-----	-----	-----	-----	-----	-----	0201,0203 = 0203,0205
+-----+ +-----	-----	-----	-----	-----	-----	0202,0505 = 0205,0505
+-----+ +-----	-----	-----	-----	-----	-----	0202,0204 = 0204,0205
+-----+ +-----	-----	-----	-----	-----	-----	0202,0304 = 0205,0304
+-----+ +-----	-----	-----	-----	-----	-----	0202,0316 = 0205,0316
+-----+ +-----	-----	-----	-----	-----	-----	0202,0309 = 0205,0309
+-----+ +-----	-----	-----	-----	-----	-----	0202,0313 = 0205,0313
+-----+ +-----	-----	-----	-----	-----	-----	0202,0301 = 0202,0319 = 0205,0301 = 0205,0319
+-----+ +-----	-----	-----	-----	-----	-----	0202,030103 = 0205,030103
+-----+ +-----	-----	-----	-----	-----	-----	0202,0314 = 0205,0314
+-----+ +-----	-----	-----	-----	-----	-----	0202,0310 = 0205,0310
+-----+ +-----	-----	-----	-----	-----	-----	0202,0317 = 0202,0320 = 0205,0317 = 0205,0320
+-----+ +-----	-----	-----	-----	-----	-----	0202,0305 = 0205,0305
+-----+ +-----	-----	-----	-----	-----	-----	0202,0306 = 0205,0306
+-----+ +-----	-----	-----	-----	-----	-----	0202,0308 = 0205,0308
+-----+ +-----	-----	-----	-----	-----	-----	0202,0315 = 0205,0315
+-----+ +-----	-----	-----	-----	-----	-----	0202,0307 = 0205,0307
+-----+ +-----	-----	-----	-----	-----	-----	0202,0311 = 0205,0311
+-----+ +-----	-----	-----	-----	-----	-----	0202,0312 = 0205,0312
+-----+ +-----	-----	-----	-----	-----	-----	0202,0601 = 0205,0601
+-----+ +-----	-----	-----	-----	-----	-----	0202,0634 = 0205,0634
+-----+ +-----	-----	-----	-----	-----	-----	0202,0318 = 0205,0318
+-----+ +-----	-----	-----	-----	-----	-----	0202,0628 = 0205,0628
+-----+ +-----	-----	-----	-----	-----	-----	0202,0303 = 0205,0303
+-----+ +-----	-----	-----	-----	-----	-----	0202,0302 = 0205,0302
+-----+ +-----	-----	-----	-----	-----	-----	0202,0401 = 0205,0401
+-----+ +-----	-----	-----	-----	-----	-----	0202,0402 = 0205,0402
+-----+ +-----	-----	-----	-----	-----	-----	0202,0501 = 0205,0501
+-----+ +-----	-----	-----	-----	-----	-----	0202,050202 = 0205,050202
+-----+ +-----	-----	-----	-----	-----	-----	0202,050201 = 0205,050201
+-----+ +-----	-----	-----	-----	-----	-----	0202,0503 = 0205,0503
+-----+ +-----	-----	-----	-----	-----	-----	0202,0504 = 0205,0504
+-----+ +-----	-----	-----	-----	-----	-----	0202,0620 = 0205,0620
+-----+ +-----	-----	-----	-----	-----	-----	0202,0616 = 0205,0616
+-----+ +-----	-----	-----	-----	-----	-----	0202,0624 = 0205,0624
+-----+ +-----	-----	-----	-----	-----	-----	0202,0633 = 0205,0633
+-----+ +-----	-----	-----	-----	-----	-----	0202,0602 = 0205,0602
+-----+ +-----	-----	-----	-----	-----	-----	0202,0619 = 0205,0619
+-----+ +-----	-----	-----	-----	-----	-----	0202,061102 = 0205,061102
+-----+ +-----	-----	-----	-----	-----	-----	0202,061101 = 0205,061101
+-----+ +-----	-----	-----	-----	-----	-----	0202,0618 = 0205,0618
+-----+ +-----	-----	-----	-----	-----	-----	0202,0610 = 0205,0610
+-----+ +-----	-----	-----	-----	-----	-----	0202,0613 = 0205,0613
+-----+ +-----	-----	-----	-----	-----	-----	0202,0629 = 0205,0629
+-----+ +-----	-----	-----	-----	-----	-----	0202,0614 = 0205,0614

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+++++	+-----	-----	---+---	---+---	-----	0202,0615 = 0205,0615
+++++	+-----	-----	---+---	-----	---+---	0202,0623 = 0205,0623
+++++	+-----	-----	---+---	---+---	-----	0202,0631 = 0205,0631
+++++	+-----	-----	---+---	-----	---+---	0202,0626N = 0205,0626N
+++++	+-----	-----	---+---	-----	---+---	0202,0603 = 0205,0603
+++++	+-----	-----	---+---	+-----	---+---	0202,0607 = 0205,0607
+++++	+-----	-----	---+---	+-----	---+---	0202,0632 = 0205,0632
+++++	+-----	-----	---+---	-----	+-----	0202,0630 = 0205,0630
+++++	+-----	-----	---+---	+-----	-----	0202,060801 = 0205,060801
+++++	+-----	-----	---+---	++-----	-----	0202,060402 = 0205,060402
+++++	+-----	-----	---+---	+-----	-----	0202,0621 = 0205,0621
+++++	+-----	-----	---+---	++++---	-----	0202,0612 = 0205,0612
+++++	+-----	-----	---+---	+-----	-----	0202,060802 = 0205,060802
+++++	+-----	-----	---+---	++-----	-----	0202,0604 = 0205,0604
+++++	+-----	-----	---+---	+-----	+-----	0202,0625 = 0205,0625
+++++	+-----	-----	---+---	+-----	+-----	0202,0617 = 0205,0617
+++++	+-----	-----	---+---	++++---	-----	0202,0606 = 0205,0606
+++++	+-----	-----	---+---	++++---	-----	0202,060501 = 0205,060501
+++++	+-----	-----	---+---	++++---	-----	0202,0609 = 0205,0609
+++++	+-----	-----	---+---	++-----	-----	0202,0627 = 0205,0627
+++++	+-----	-----	---+---	++++---	-----	0202,060502 = 0205,060502
+++++	+-----	-----	---+---	++++---	-----	0202,0622 = 0205,0622
+++++	+-----	-----	---+---	-----	-----	0201,0202 = 0201,0205 = 0202,0205 = 0205,0205
+++++	+-----	---+---	-----	-----	-----	0204,0301 = 0204,0319
+++++	+-----	---+---	-----	-----	-----	0204,0317 = 0204,0320
+++++	+-----	---+---	-----	-----	-----	0201,0505 = 0204,050201 = 0204,0505
+++++	+-----	-----	-----	-----	-----	0201,0204 = 0204,0204
+++++	+-----	---+---	-----	-----	-----	0201,0301 = 0201,0319
+++++	+-----	---+---	-----	-----	-----	0201,0317 = 0201,0320
+++++	+-----	---+---	-----	-----	-----	0203,0301 = 0203,0319
+++++	+-----	---+---	-----	-----	-----	0203,0317 = 0203,0320
+++++	+-----	---+---	-----	-----	-----	050202,0505 = 0503,0505
+++++	+-----	---+---	-----	-----	-----	050201,0505 = 0505,0505
+++++	+-----	---+---	-----	-----	-----	0301,0308 = 0308,0319
+++++	+-----	---+---	-----	-----	-----	0301,0307 = 0307,0319
+++++	+-----	---+---	-----	-----	-----	030103,0307 = 0302,0316 = 0307,0316
+++++	+-----	---+---	-----	-----	-----	0301,0311 = 0302,0309 = 0309,0311 = 0311,0319
+++++	+-----	---+---	-----	-----	-----	0301,0318 = 0318,0319
+++++	+-----	---+---	-----	-----	-----	0301,0302 = 0302,0319
+++++	+-----	---+---	-----	-----	-----	0304,0312 = 0314,0319
+++++	+-----	---+---	-----	-----	-----	0303,0304 = 0304,0319
+++++	+-----	---+---	-----	-----	-----	0305,0309 = 0309,0320
+++++	+-----	---+---	-----	-----	-----	0305,0313 = 0313,0320
+++++	+-----	---+---	-----	-----	-----	0301,0305 = 0301,0320 = 030103,0320 = 0305,0319 = 0317,0319 = 0319,0320
+++++	+-----	---+---	-----	-----	-----	0301,0306 = 030103,0306 = 0306,0319
+++++	+-----	---+---	-----	-----	-----	0301,0315 = 030103,0315 = 0303,0316 = 0315,0316 = 0315,0319 = 0316,0319
+++++	+-----	---+---	-----	-----	-----	0303,0309 = 0309,0319
+++++	+-----	---+---	-----	-----	-----	0301,0312 = 030103,0312 = 0310,0319 = 0312,0319
+++++	+-----	---+---	-----	-----	-----	0303,0313 = 0313,0319
+++++	+-----	---+---	-----	-----	-----	0301,0401 = 0319,0401
+++++	+-----	---+---	-----	-----	-----	0301,0402 = 0319,0402
+++++	+-----	---+---	-----	-----	-----	0301,0303 = 0301,0319 = 030103,0303 = 030103,0319 = 0303,0319 = 0319,0319
+++++	+-----	---+---	-----	-----	-----	0301,0314 = 0304,0310
+++++	+-----	---+---	-----	-----	-----	030103,0314 = 0304,0314
+++++	+-----	---+---	-----	-----	-----	030103,0304 = 0304,0304
+++++	+-----	---+---	-----	-----	-----	0301,0317 = 030103,0317
+++++	+-----	---+---	-----	-----	-----	0301,0309 = 030103,0309 = 0309,0309
+++++	+-----	---+---	-----	-----	-----	0301,0310 = 030103,0310
+++++	+-----	---+---	-----	++-----	-----	0301,0634 = 0313,0604 = 0313,0634



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--+-----	-----+	+--+-----	-----	-----	-----	0301,0313 = 030103,0313 = 0313,0313
--+-----	-----+	+--+-----	-----	-----	-----	0301,0301 = 0301,030103
--+-----	++-----++	+--+-----	-----	-----	-----	0303,0314 = 0312,0314
--+-----	++-----++	+--+-----	-----	-----	-----	0305,0310 = 0310,0320
--+-----	++-----++	+--+-----	-----	-----	-----	0303,0310 = 0310,0312
--+-----	++-----++	+--+-----	-----	-----	-----	0308,0317 = 0308,0320
--+-----	++-----++	+--+-----	-----	-----	-----	0307,0317 = 0307,0320
--+-----	++-----++	+--+-----	-----	-----	-----	0311,0317 = 0311,0320
--+-----	++-----++	+--+-----	-----	-----	-----	0317,0318 = 0318,0320
--+-----	++-----++	+--+-----	-----	-----	-----	0302,0317 = 0302,0320
--+-----	++-----++	+--+-----	-----	-----	-----	0306,0307 = 0308,0315
--+-----	++-----++	+--+-----	-----	-----	-----	0302,0306 = 0303,0308 = 0306,0308
--+-----	++-----++	+--+-----	-----	-----	-----	0302,0308 = 0308,0308
--+-----	++-----++	+--+-----	-----	-----	-----	0302,0315 = 0303,0307 = 0307,0315
--+-----	++-----++	+--+-----	-----	-----	-----	0302,0307 = 0307,0307
--+-----	++-----++	+--+-----	-----	-----	-----	0302,0311 = 0311,0311
--+-----	++-----++	+--+-----	-----	-----	-----	0302,0628 = 0318,0603 = 0318,0628
--+-----	++-----++	+--+-----	-----	-----	-----	0302,0318 = 0318,0318
--+-----	++-----++	+--+-----	-----	-----	-----	0305,0306 = 0306,0317 = 0306,0320
--+-----	++-----++	+--+-----	-----	-----	-----	0305,0315 = 0315,0317 = 0315,0320
--+-----	++-----++	+--+-----	-----	-----	-----	0305,0312 = 0312,0317 = 0312,0320
--+-----	++-----++	+--+-----	-----	-----	-----	0317,0401 = 0320,0401
--+-----	++-----++	+--+-----	-----	-----	-----	0317,0402 = 0320,0402
--+-----	++-----++	+--+-----	-----	-----	-----	0303,0305 = 0303,0317 = 0303,0320 =
--+-----	++-----++	+--+-----	-----	-----	-----	0305,0317 = 0305,0320 = 0317,0320 =
--+-----	++-----++	+--+-----	-----	-----	-----	0320,0320
--+-----	++-----++	+--+-----	-----	-----	-----	0303,0306 = 0306,0306
--+-----	++-----++	+--+-----	-----	-----	-----	0303,0315 = 0315,0315
--+-----	++-----++	+--+-----	-----	-----	-----	0303,0312 = 0312,0312
--+-----	++-----++	+--+-----	-----	-----	-----	060802,0634 = 0621,0634
--+-----	++-----++	+--+-----	-----	-----	-----	060501,0634 = 060502,0634
--+-----	++-----++	+--+-----	-----	-----	-----	0604,0634 = 0634,0634
--+-----	++-----++	+--+-----	-----	-----	-----	061101,0628 = 061102,0628
--+-----	++-----++	+--+-----	-----	-----	-----	0604,0628 = 060402,0628
--+-----	++-----++	+--+-----	-----	-----	-----	060801,0628 = 060802,0628
--+-----	++-----++	+--+-----	-----	-----	-----	0603,0628 = 0628,0628
--+-----	++-----++	+--+-----	-----	-----	-----	050201,050202 = 050201,0503 =
--+-----	++-----++	+--+-----	-----	-----	-----	050202,050202 = 050202,0503
--+-----	++-----++	+--+-----	-----	-----	-----	0602,0631 = 0603,0620 = 0620,0631
--+-----	++-----++	+--+-----	-----	-----	-----	061101,0614 = 061102,0614
--+-----	++-----++	+--+-----	-----	-----	-----	0602,0626N = 061102,0633 = 0626N,0633
--+-----	++-----++	+--+-----	-----	-----	-----	0602,0630 = 0624,0630
--+-----	++-----++	+--+-----	-----	-----	-----	0613,0614 = 0614,0616
--+-----	++-----++	+--+-----	-----	-----	-----	0602,0617 = 0617,0624
--+-----	++-----++	+--+-----	-----	-----	-----	0602,0606 = 0606,0620
--+-----	++-----++	+--+-----	-----	-----	-----	0602,060501 = 060501,0620 = 0609,0620
--+-----	++-----++	+--+-----	-----	-----	-----	0602,060502 = 060502,0620
--+-----	++-----++	+--+-----	-----	-----	-----	0613,0620 = 0616,0620
--+-----	++-----++	+--+-----	-----	-----	-----	0602,0620 = 0620,0620
--+-----	++-----++	+--+-----	-----	-----	-----	0613,0615 = 0615,0616
--+-----	++-----++	+--+-----	-----	-----	-----	0602,0622 = 0616,0622
--+-----	++-----++	+--+-----	-----	-----	-----	0613,0623 = 0616,0623
--+-----	++-----++	+--+-----	-----	-----	-----	0613,0624 = 0616,0624
--+-----	++-----++	+--+-----	-----	-----	-----	0613,0633 = 0616,0633
--+-----	++-----++	+--+-----	-----	-----	-----	0613,0619 = 0616,0619
--+-----	++-----++	+--+-----	-----	-----	-----	0602,0613 = 0602,0616 = 0613,0616 =
--+-----	++-----++	+--+-----	-----	-----	-----	0616,0616
--+-----	++-----++	+--+-----	-----	-----	-----	0602,0624 = 0624,0624
--+-----	++-----++	+--+-----	-----	-----	-----	0602,0633 = 0633,0633
--+-----	++-----++	+--+-----	-----	-----	-----	0604,061102 = 060402,061102
--+-----	++-----++	+--+-----	-----	-----	-----	0603,0618 = 061102,0627
--+-----	++-----++	+--+-----	-----	-----	-----	060801,061102 = 060802,061102
--+-----	++-----++	+--+-----	-----	-----	-----	061101,0631 = 061102,0631
--+-----	++-----++	+--+-----	-----	-----	-----	061101,0626N = 061102,0626N
--+-----	++-----++	+--+-----	-----	-----	-----	0603,061101 = 0603,061102



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--+----- ----- ----- --+----- ----- ----- 061101,061102 = 061102,061102
--+----- ----- ----- --+----- --+----- ----- 060801,061101 = 060802,061101
--+----- ----- ----- --+----- ++----- ----- 0604,061101 = 060402,061101 = 060402,061101
--+----- ----- ----- --+----- +----- ----- 060501,0618 = 060502,0618
--+----- ----- ----- ----- +----- +----- ----- 0604,0631 = 060402,0631
--+----- ----- ----- ----- +----- +----- ----- 0604,0626N = 060402,0626N
--+----- ----- ----- ----- +----- +----- ----- 0607,060801 = 0607,060802 = 0607,0621
--+----- ----- ----- ----- +----- +----- ----- 0603,0604 = 0603,060402 = 0621,0632
--+----- ----- ----- ----- +----- +----- +----- 0603,0617 = 0621,0630
--+----- ----- ----- ----- +----- +----- +----- 0603,0606 = 0606,0631
--+----- ----- ----- ----- +----- +----- +----- 0603,060501 = 060501,0631 = 0609,0631
--+----- ----- ----- ----- +----- +----- +----- 0603,0609 = 0612,0632
--+----- ----- ----- ----- +----- +----- +----- 0603,0627 = 060801,0632 = 060802,0632
--+----- ----- ----- ----- +----- +----- +----- 0603,060502 = 060502,0631
--+----- ----- ----- ----- +----- +----- +----- 060801,0631 = 060802,0631
--+----- ----- ----- ----- +----- +----- +----- 060801,0630 = 060802,0630
--+----- ----- ----- ----- +----- +----- +----- 060801,0626N = 060802,0626N
--+----- ----- ----- ----- +----- +----- +----- 0603,060801 = 0603,060802
--+----- ----- ----- ----- +----- +----- +----- 0603,0631 = 0631,0631
--+----- ----- ----- ----- +----- +----- +----- 0604,0630 = 060402,0630 = 0617,0632
--+----- ----- ----- ----- +----- +----- +----- 0604,0607 = 060402,0607
--+----- ----- ----- ----- +----- +----- +----- 0604,0632 = 060402,0632
--+----- ----- ----- ----- +----- +----- +----- 0604,060801 = 060402,060801 =
060402,060802 = 060402,0621
--+----- ----- ----- ----- +----- +----- +----- 060501,060801 = 060502,060801
--+----- ----- ----- ----- +----- +----- +----- 060801,060801 = 060801,060802
--+----- ----- ----- ----- +----- +----- +----- 060402,060501 = 060402,060502
--+----- ----- ----- ----- +----- +----- +----- 0604,060402 = 060402,060402
--+----- ----- ----- ----- +----- +----- +----- 060501,0621 = 060502,0621
--+----- ----- ----- ----- +----- +----- +----- 060802,0625 = 0621,0625
--+----- ----- ----- ----- +----- +----- +----- 0604,060802 = 0604,0621 = 0621,0627
--+----- ----- ----- ----- +----- +----- +----- 060802,0617 = 0617,0621
--+----- ----- ----- ----- +----- +----- +----- 060802,0621 = 0621,0621
--+----- ----- ----- ----- +----- +----- +----- 060501,060802 = 060502,060802
--+----- ----- ----- ----- +----- +----- +----- 060501,0612 = 060502,0612
--+----- ----- ----- ----- +----- +----- +----- 060802,0609 = 0612,0627
--+----- ----- ----- ----- +----- +----- +----- 060501,0617 = 060502,0617
--+----- ----- ----- ----- +----- +----- +----- 0604,060501 = 0604,060502
--+----- ----- ----- ----- +----- +----- +----- 060501,0606 = 060502,0606 = 0606,0606 =
0606,0609
--+----- ----- ----- ----- +----- +----- +----- 060501,0627 = 060502,0627
--+----- ----- ----- ----- +----- +----- +----- 060501,060501 = 060501,060502 =
060501,0609 = 060502,0609
```



## LICENSES

### 101.221-12 – licensed for PCR.

#### Notice to purchaser: Limited License.

The purchase price of this product includes limited, non-transferable rights under U.S. Patents 4,683,202, 4,683,195 and 4,965,188 and their foreign counterparts, owned by Roche Molecular Systems, Inc. and F. Hoffman-La Roche Ltd (“Roche”), to use only this amount of the product to practice the Polymerase Chain Reaction (“PCR”) Process described in said patents solely for the HLA Typing applications of the purchaser solely for organ or tissue or bone marrow transplantation, and explicitly excludes analysis of forensic evidence or parentage determination. The rights to use this product to perform and to offer commercial service for HLA Typing for organ or tissue transplantation using PCR, including reporting the results of the purchaser’s activities for a fee or other commercial consideration, is also hereby granted. Further information on purchasing licenses to practice PCR may be obtained by contacting in the United States, the Director of Licensing at Roche Molecular Systems, inc., 1145 Atlantic Avenue, Alameda, California 94501, and outside the United States, the PCR Licensing Manager, F. Hoffmann-La Roche Ltd, Grenzacherstr. 124, CH-4070 Basel, Switzerland.

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### 101.221-12 and 101.221-12u

These products use ARMS™ technology and is sold under license from Zeneca Limited. ARMS is the subject of European Patent No. 0332435, US Patent No. 5595890 and corresponding world-wide patents. ARMS is a trademark of Zeneca Limited.

## GUARANTEE

Olerup SSP AB guarantees that the primers in the DQB1 high resolution for frequent alleles typing kit have the specificities given in the Specificity and Interpretation Tables of the product insert and in the GenoVision version of the HELMBERG-SCORE™ software.

When stored at –20°C, the dried primers are stable for 22 months from the date of manufacture.

When stored at –20°C, the PCR Master Mix complete with *Taq* and the PCR Master Mix without *Taq* are stable for 24 months from the date of manufacture.

The kit is shipped at ambient temperature.



## PROTOCOL

### DNA EXTRACTION

Extracted, highly pure DNA is needed for SSP typings. We recommend isolation of DNA using GenoPrep B200 or GenoPrep B350 cartridges on the GenoM™-6 robotic workstation (GenoVision Europe Tel: +43 1 710 15 00 or GenoVision Inc. USA Tel: +1 610 430 88 41; <http://www.genovision.com>). Using GenoM™-6-extracted DNA ACD, EDTA and heparinised blood can be used as starting material. Because of its high purity, GenoM™-6-extracted DNA can be diluted when used in combination with Olerup SSP™ products. The recommended DNA concentration is 15 ng/μl. Alternatively – BUT DO NOT USE HEPARINISED BLOOD WITH THESE METHODS - the DNA can be extracted using trimethylammoniumbromide salts (DTAB/CTAB) or by salting out. Dissolve the extracted DNA in dH<sub>2</sub>O.

#### IMPORTANT:

Optimal DNA concentration using: GenoM™-6-extracted DNA, 15 ng/μl .  
DNA extracted by other methods, 30 ng/μl.

Concentration exceeding 50 ng/μl will increase the risk for nonspecific amplifications and weak extra bands, especially for HLA Class I high resolution SSP typings.

### PCR AMPLIFICATION

#### 101.221-12 – licensed for PCR

For one DQB1 high resolution for frequent alleles typing, begin by adding to well No. 48, i.e. the well with the negative control primer pairs:

7 μl dH<sub>2</sub>O

3 μl PCR Master Mix complete with *Taq*

then add at room temperature in a 2.0 ml tube:

52 x 2 μl = 104 μl DNA (30 ng/μl)

52 x 3 μl = 156 μl PCR Master Mix complete with *Taq* – mix well before taking your aliquot

52 x 5 μl = 260 μl dH<sub>2</sub>O

Mix well, dispense 10 μl of the DNA-PCR Master Mix-H<sub>2</sub>O mixture into each of wells 1 to 47 of a DQB1 high resolution typing. **Well No. 1 of the 48 well PCR plate is marked with '1'**. Close the 48 well PCR plate with the provided lids.

#### 101.221-12u – not licensed for PCR

For one DQB1 high resolution for frequent alleles typing, begin by adding at room temperature in a 2.0 ml tube:

53 x 3 μl = 159 μl PCR Master Mix without *Taq* – mix well before taking your aliquot

4.3 μl *Taq* polymerase (5 units/μl)

Mix well, dispense 3 μl of the PCR Master Mix-*Taq* mixture from the 2.0 ml tube into well No. 48, i.e. the well with the negative control primer pairs. Then add 7 μl dH<sub>2</sub>O to well 48.

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Then add at room temperature to the 2.0 ml tube with the PCR Master Mix-*Taq* mixture:

$$52 \times 2 \mu\text{l} = 104 \mu\text{l DNA (30 ng}/\mu\text{l)}$$

$$52 \times 5 \mu\text{l} - 4.3 \mu\text{l} = 255.7 \mu\text{l dH}_2\text{O}$$

Mix well, dispense 10  $\mu\text{l}$  of the DNA-PCR Master Mix-*Taq*-H<sub>2</sub>O mixture into wells 1 to 47 of a DQB1 high resolution typing. **Well No. 1 of the 48 well PCR plate is marked with '1'**. Close the 48 well PCR plate with the provided lids.

Use a 96 well thermal cycler with a heated lid. The temperature gradient across the heating block should be < 1°C.

#### PCR cycling parameters:

1. 1 cycle	94°C	2 min	denaturation
2. 10 cycles	94°C	10 sec.	denaturation
	65°C	60 sec.	annealing and extension
3. 20 cycles	94°C	10 sec.	denaturation
	61°C	50 sec.	annealing
	72°C	30 sec.	extension

**The same PCR cycling parameters are used for all the Olerup SSP kits.**

#### AGAROSE GEL ELECTROPHORESIS

Prepare a 2% (w/v) agarose gel in 0.5 x TBE buffer. Dissolve the agarose by boiling in a microwave oven. Let the gel solution cool to 60°C. Stain the gel prior to casting with ethidium bromide (10 mg/ml), 5  $\mu\text{l}$  per 100 ml gel solution. For maximal ease of handling use our ethidium bromide dropper bottles (Product No. 103.301-10), 1 drop of ethidium bromide solution per 50-75 ml of gel. **Note: Ethidium bromide is a powerful carcinogen.**

Load the PCR products, preferably using an 8-channel pipette. Load a DNA size marker (100 base pair ladder, Product No. 103.201-100) in one well per row.

Run the gel in 0.5 x TBE buffer, without re-circulation of the buffer, for 15-20 minutes at 8-10 V/cm.

#### DOCUMENTATION AND INTERPRETATION

Put the gel on a UV transilluminator and document by photography.

Record the presence and absence of specific PCR products. The relative lengths of the specific PCR products are helpful in the interpretation of the results.

Record the presence and relative lengths of the internal positive control bands. The differently sized control bands will help in the correct orientation of the typing as well as in kit identification.

Lanes without either control band or specific PCR products should be repeated.

Interpret the typings with the **lot-specific Interpretation and Specificity Tables**.

## INTERPRETATION SOFTWARE

The interpretation software (Product No. 110.101) can be helpful in the interpretation of the typings.

## PCR MASTER MIXES

The PCR Master Mix complete with *Taq* contains:

<i>Taq</i> polymerase	0.4 unit per 10 µl SSP reaction
nucleotides	final concentration of each dNTP is 200 µM
PCR buffer	final concentrations: 50 mM KCl, 1.5 mM MgCl <sub>2</sub> , 10 mM Tris-HCl pH 8.3, 0.001% w/v gelatin
glycerol	final concentration of glycerol is 5%
cresol red	final concentration of cresol red is 100 µg/ml

**The same PCR Master Mix complete with *Taq* is used for all the licensed Olerup SSP kits.**

The PCR Master Mix without *Taq* contains:

nucleotides	final concentration of each dNTP is 200 µM
PCR buffer	final concentrations: 50 mM KCl, 1.5 mM MgCl <sub>2</sub> , 10 mM Tris-HCl pH 8.3, 0.001% w/v gelatin
glycerol	final concentration of glycerol is 5%
cresol red	final concentration of cresol red is 100 µg/ml

**The same PCR Master Mix without *Taq* is used for all the unlicensed Olerup SSP kits.**

The PCR Master Mix complete with *Taq* and the PCR Master Mix without *Taq* can be shipped at ambient temperature.

When stored at –20°C, the PCR Master Mix complete with *Taq* and the PCR Master Mix without *Taq* are stable for 24 months from the date of manufacture.

Vials with the PCR Master Mixes can be kept at +4°C for 4 weeks, but the PCR Master Mixes are then no longer stable for 24 months.

## SPECIFICITY TABLE

### DQB1 high resolution for frequent alleles SSP typing

Specificities and sizes of the PCR products of the 47 primer mixes used for DQB1 high resolution for frequent alleles SSP typing

Primer Mix	Approx. size of spec. PCR product <sup>1</sup>	Size of control band <sup>2</sup>	Amplified DQB1 alleles
<b>1</b> <sup>4</sup>	120 bp	<b>515 bp</b>	020101-0202, 0204, 0205
<b>2</b> <sup>4</sup>	85 bp	430 bp	0203
<b>3</b>	145 bp	<b>515 bp</b>	020101-020102, 0204, 0205, 030101-030204, 030302-0320, 0401, 0402, 050101-0505, 060101-0634
<b>4</b> <sup>6</sup>	140, 180 bp	430 bp	0202, 0203, 0205
<b>5</b> <sup>7</sup>	145, 185 bp	430 bp	0204, 0505
<b>6</b> <sup>3</sup>	165 bp	<b>515 bp</b>	030101-030103, 0304, 0309, 0313, 0316, 0319
<b>7</b> <sup>3</sup>	220 bp	<b>515 bp</b>	030101-030103, 0304, 0309, 0310, 0313, 0314, 0316, 0319
<b>8</b> <sup>3</sup>	135 bp	<b>515 bp</b>	020101-0202, 0204, 0205, 030201-030204, 0307, 0308, 0311, 0318, 0629
<b>9</b> <sup>3,8</sup>	190, 220 bp	<b>515 bp</b>	020101-0205, 030201-030204, 030302-030303, 030501-0308, 0311, 0312, 0315, 0318-0320, 0401, 0402
<b>10</b>	135 bp	430 bp	0304, 0314
<b>11</b> <sup>4,9</sup>	95, 130 bp	430 bp	030501-030504, 0317, 0320
<b>12</b> <sup>4</sup>	125 bp	430 bp	0306, 0308
<b>13</b> <sup>4,10</sup>	110, 140 bp	430 bp	0307, 0315, 0316
<b>14</b> <sup>11</sup>	135, 260 bp	430 bp	0309, 0311
<b>15</b> <sup>3</sup>	135 bp	430 bp	0310, 0312, 0314, 060101-060103
<b>16</b> <sup>3</sup>	260 bp	<b>515 bp</b>	030101-030103, 0304, 0309, 0310, 0312-0314, 0316, 0319
<b>17</b> <sup>12</sup>	165, 300 bp	430 bp	0313, 0634
<b>18</b> <sup>5,13</sup>	190, 220 bp	<b>515 bp</b>	0318, 0628
<b>19</b>	135 bp	<b>515 bp</b>	030101-030204, 030302-0315, 0317-0320
<b>20</b>	130 bp	430 bp	030101-030102, 030302-030303, 0306, 0309, 0310, 0312, 0313, 0315, 0317, 0319, 0320
<b>21</b>	205 bp	<b>515 bp</b>	0401
<b>22</b> <sup>3</sup>	205 bp	430 bp	0402
<b>23</b>	135 bp	430 bp	050101-050102

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<b>24<sup>4</sup></b>	120 bp	430 bp	050201-050202, 0505
<b>25<sup>4</sup></b>	95 bp	<b>515 bp</b>	050202-050302
<b>26<sup>4</sup></b>	120 bp	430 bp	0504
<b>27</b>	210 bp	430 bp	060101-0602, 060502 <sup>?</sup> , 0606 <sup>?</sup> , 0610-061102, 0613, 0616, 0618-0620, 0624, 0629, 0633
<b>28</b>	185 bp	430 bp	0602, 0614-0616, 0619, 0620, 0623, 0624, 0633
<b>29</b>	130 bp	430 bp	060301-060302, 0607, 061102, 0614, 0626N, 0628, 0630-0632
<b>30</b>	160 bp	430 bp	060301-060302, 060402, 0607, 060801, 061101-061102, 0626N, 0628, 0630-0632
<b>31</b>	170 bp	<b>515 bp</b>	060301-060302, 060801-060802, 061102, 0612, 0614, 0621, 0626N, 0628, 0631
<b>32</b>	210 bp	<b>515 bp</b>	060401-060403, 0607, 0617, 0621, 0625, 0634
<b>33</b>	170 bp	430 bp	060401-0607, 0609, 0618, 0625, 0627, 0632, 0634
<b>34</b>	130 bp	430 bp	060401-060501, 0606, 060801-0609, 0612, 0617, 0618, 0621, 0627, 0634
<b>35</b>	190, 260 bp	<b>515 bp</b>	060501, 060502 <sup>?</sup> , 0606 <sup>?</sup> , 0620, 0631
<b>36</b>	210 bp	430 bp	060501, 060502 <sup>?</sup> , 0606 <sup>?</sup> , 0609, 0612, 0615, 0622
<b>37</b>	180 bp	430 bp	0606
<b>38<sup>4,14</sup></b>	95, 185 bp	430 bp	0610, 0614
<b>39</b>	190 bp	430 bp	0613, 0616, 0622
<b>40</b>	110 bp	430 bp	0623
<b>41</b>	175 bp	430 bp	0617, 0624, 0630
<b>42</b>	135 bp	430 bp	0610, 0625
<b>43<sup>15</sup></b>	215, 265 bp	<b>515 bp</b>	0626N, 0633
<b>44</b>	160 bp	430 bp	0602, 0610, 0613-0616, 0620, 0623, 0624, 0629, 0633
<b>45</b>	130 bp	<b>515 bp</b>	0607, 0615
<b>46<sup>16</sup></b>	160, 210 bp	<b>515 bp</b>	060301-060302, 060801-060802, 0614, 0621, 0627, 0628, 0630-0632
<b>47<sup>3</sup></b>	155 bp	430 bp	0401, 0402, 0619

<sup>1</sup> Alleles 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 for frequent alleles SSP 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 bp or more. Size differences shorter than 20 bp are not 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 band may sometimes be observed. Such bands can be disregarded and do not influence the interpretation of the SSP typings.

<sup>2</sup> The 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 tubes, or a band of 515 base pairs, for some tubes.

Tube 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, tubes number 3, 6, 7, 8, 9, 16, 18, 19, 21, 25, 31, 32, 35, 43, 45 and 46 contain the primer pair giving rise to the longer, 515 bp, internal positive control band in order to allow kit identification.

**PLEASE NOTE:** All the SSP kits, except the B\*37, B\*41, B\*42, B\*46, B\*47, B\*48, B\*49, B\*50, B\*53, B\*67, B\*78, B\*81 and B\*82 kits and the Cw\*01, Cw\*02, Cw\*08, Cw\*12, Cw\*14, Cw\*15, Cw\*16, Cw\*17 and Cw\*18 kits, from *Olerup* SSP AB can be uniquely identified by the number of tubes and the kit-specific pattern of the two differently sized control bands.

In the presence of a specific amplification the intensity of the control band often decreases.

<sup>3</sup> Primer mixes 6, 7, 8, 9, 15, 16, 22 and 47 may yield less specific PCR products than the other DQB1 primer mixes.

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

<sup>5</sup> Primer mix 18 may give rise to primer oligomer formation.

<sup>6</sup> Primer mix 4: Specific PCR fragment of 140 bp in the DQB1\*0202 and 0203 alleles. Specific PCR fragment of 180 bp in the DQB1\*0205 allele.

<sup>7</sup> Primer mix 5: Specific PCR fragment of 145 bp in the DQB1\*0205 allele. Specific PCR fragment of 185 bp in the DQB1\*0505 allele.

<sup>8</sup> Primer mix 9: Specific PCR fragment of 190 bp in DQB1\*030501-030504, 0319 and the DQB1\*0401-0402 alleles. Specific PCR fragment of 220 bp in the DQB1\*0306-0308, 0311, 01312, 0315, 0318, 0320 and the DQB1\*020201-0205 alleles. Specific PCR fragments of 190 and 220 bp (both specific PCR fragments may not be obtained) in the DQB1\*030201-030204 and DQB1\*030302-030303 alleles.

<sup>9</sup> Primer mix 11: Specific PCR fragment of 95 bp in the DQB1\*0320 allele. Specific PCR fragment of 130 bp in the DQB1\*030501-030504 and 0317 alleles.

<sup>10</sup> Primer mix 13: Specific PCR fragment of 110 bp in the DQB1\*0315 allele. Specific PCR fragment of 140 bp in the DQB1\*0307 and 0316 alleles.

<sup>11</sup> Primer mix 14: Specific PCR fragment of 135 bp in the DQB1\*0309 allele. Specific PCR fragment of 260 bp in the DQB1\*0311 allele.

<sup>12</sup> Primer mix 17: Specific PCR fragment of 165 bp in the DQB1\*0313 allele. Specific PCR fragment of 300 bp in the DQB1\*0634 allele.

<sup>13</sup> Primer mix 18: Specific PCR fragment of 190 bp in the DQB1\*0628 allele. Specific PCR fragment of 220 bp in the DQB1\*0318 allele.

<sup>14</sup> Primer mix 38: Specific PCR fragment of 95 bp in DQB1\*0614 allele. Specific PCR fragment of 185 bp in the DQB1\*0610 allele.

<sup>15</sup> Primer mix 43: Specific PCR fragment of 215 bp in the DQB1\*0626N allele. Specific PCR fragment of 265 bp in the DQB1\*0633 allele.

<sup>16</sup> Primer mix 46: Specific PCR fragment of 160 bp in the DQB1\*060301-060302, 060801-060802, 0614, 0621, 0628 and 0630 to 0632 alleles. Specific PCR fragment of 210 bp in the DQB1\*0627 allele.

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

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<b>INTERPRETATION TABLE</b>																								
<b>DQB1 high resolution SSP typing</b>																								
<b>Amplification patterns of the DQB1*0201 to DQB1*0628 alleles</b>																								
	<b>Tube<sup>6</sup></b>																							
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24
<b>Length of spec. PCR product</b>	120	85	145	140	145	165	220	135	190	135	95	125	110	135	135	260	165	190	135	130	205	205	135	120
<b>Length of int. pos. control<sup>1</sup></b>	515	430	515	430	430	515	515	515	515	430	430	430	430	430	430	515	430	515	515	430	515	430	430	430
<b>5'-primer(s)<sup>2</sup></b>	30	57	135	30	38	45	26	26	26	26	26	38	49	14	13	13	26	27	55	57	23	23	26	30
	5'-A Ag <sup>3</sup>	5'-T gA <sup>3</sup>	5'-T gA <sup>3</sup>	5'-A Ag <sup>3</sup>	5'-C gC <sup>3</sup>	5'-g gA <sup>3</sup>	5'-T TA <sup>3</sup>	5'-T CT <sup>3</sup>	5'-T CT <sup>3</sup>	5'-T TA <sup>3</sup>	5'-g gg <sup>3</sup>	5'-g CA <sup>3</sup>	5'-g gT <sup>3</sup>	5'-gC C <sup>3</sup>	5'-g gC <sup>3</sup>	5'-g gC <sup>3</sup>	5'-T TA <sup>3</sup>	5'-T TC <sup>3</sup>	5'-g CC <sup>3</sup>	5'-T gA <sup>3</sup>	5'-g CT <sup>3</sup>	5'-g Cg <sup>3</sup>	5'-g gg <sup>3</sup>	5'-gA C <sup>3</sup>
				102	136				135		38		55	135			102	38						
				5'-TC T <sup>3</sup>	5'-AC g <sup>3</sup>				5'-TgA <sup>3</sup>		5'-AC A <sup>3</sup>		5'-g cA <sup>3</sup>	5'-T gA <sup>3</sup>			5'-TC T <sup>3</sup>	5'-C gT <sup>3</sup>						
													63											
													5'-Agg <sup>3</sup>											
<b>3'-primer(s)<sup>3</sup></b>	57	71	170	77	86	86	86	57	86	57	55	62	86	86	45	86	67	86	86	86	77	77	57	57
	5'-C gg <sup>3</sup>	5'-Cg T <sup>3</sup>	5'-gAC <sup>3</sup>	5'-CC g <sup>3</sup>	5'-AC g <sup>3</sup>	5'-g CT <sup>3</sup>	5'-g CT <sup>3</sup>	5'-C gg <sup>3</sup>	5'-g CT <sup>3</sup>	5'-C gg <sup>3</sup>	5'-C g <sup>3</sup>	5'-CT A <sup>3</sup>	5'-g CT <sup>3</sup>	5'-g CT <sup>3</sup>	5'-CC C <sup>3</sup>	5'-g CT <sup>3</sup>	5'-g gT <sup>3</sup>	5'-g CT <sup>3</sup>	5'-g CT <sup>3</sup>	5'-g CT <sup>3</sup>	5'-AC g <sup>3</sup>	5'-AC g <sup>3</sup>	5'-C AA <sup>3</sup>	5'-gCT <sup>3</sup>
				135	170				185			70		167			189	87						
				5'-g gC <sup>3</sup>	5'-gAC <sup>3</sup>				5'-Cg A <sup>3</sup>			5'-CCC <sup>3</sup>		5'-C AT <sup>3</sup>			5'-C CA <sup>3</sup>	5'-g gA <sup>3</sup>						
<b>Tube No.</b>	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24
<b>DQB1 allele<sup>4</sup></b>																								
<b>*020101-020102</b>	+		+					+	+															
<b>*0202</b>	+			+				+	+															
<b>*0203</b>		+		+					+															
<b>*0204</b>	+		+		+			+	+															
<b>*0205</b>	+		+	+				+	+															
<b>*030101-030102</b>			+			+	+									+				+	+			
<b>*030103</b>			+			+	+									+				+				
<b>*030201-030204</b>			+					+	+											+				
<b>*030302-030303</b>			+						+											+	+			
<b>*0304</b>			+			+	+			+						+				+				
<b>*030501-030504</b>			+						+		+									+				
<b>*0306</b>			+						+			+								+	+			
<b>Tube No.</b>	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24





<b>INTERPRETATION TABLE</b>																							
<b>DQB1 high resolution SSP typing</b>																							
<b>Amplification patterns of the DQB1*0201 to DQB1*0628 alleles</b>																							
<b>Tube<sup>6</sup></b>																							
25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	
95	120	210	185	130	160	170	210	170	130	260	210	180	95	190	110	175	135	215	160	130	160	155	<b>Length of spec. PCR product</b>
													185					265				210	
515	430	430	430	430	430	515	515	430	430	515	430	430	430	430	430	430	430	515	430	515	515	430	<b>Length of int. pos. control<sup>1</sup></b>
30	30	30	9	27	9	27	30	27	27	14	30	27	9	9	26	27	26	11	9	57	30	9	
5'-gA C <sup>3'</sup>	5'-gA T <sup>3'</sup>	5'-gA T <sup>3'</sup>	5'-g TT <sup>3'</sup>	5'-gTA <sup>3'</sup>	5'-g TA <sup>3'</sup>	5'-gTA <sup>3'</sup>	5'-gA C <sup>3'</sup>	5'-gTA <sup>3'</sup>	5'-gTA <sup>3'</sup>	5'-gC C <sup>3'</sup>	5'-gA T <sup>3'</sup>	5'-gTA <sup>3'</sup>	5'-g TT <sup>3'</sup>	5'-g TT <sup>3'</sup>	5'-g gg <sup>3'</sup>	5'-gTA <sup>3'</sup>	5'-T CT <sup>3'</sup>	5'-TTA <sup>3'</sup>	5'-g TT <sup>3'</sup>	5'-T gA <sup>3'</sup>	5'-gA C <sup>3'</sup>	5'-g TT <sup>3'</sup>	
		30								38									29				
		5'-gA T <sup>3'</sup>								5'-C gT <sup>3'</sup>								5'-CC T <sup>3'</sup>					
47	57	86	57	57	48	70	86	70	57	86	86	74	27	57	48	71	57	86	48	86	70	47	<b>3'-primer(s)<sup>3</sup></b>
5'-Cg A <sup>3'</sup>	5'-gCT <sup>3'</sup>	5'-A Cg <sup>3'</sup>	5'-C AT <sup>3'</sup>	5'-C AT <sup>3'</sup>	5'-gC g <sup>3'</sup>	5'-CCC <sup>3'</sup>	5'-A CC <sup>3'</sup>	5'-CCT <sup>3'</sup>	5'-C AA <sup>3'</sup>	5'-A CC <sup>3'</sup>	5'-A CC <sup>3'</sup>	5'-C Cg <sup>3'</sup>	5'-gT T <sup>3'</sup>	5'-C AA <sup>3'</sup>	5'-gC g <sup>3'</sup>	5'-ggT <sup>3'</sup>	5'-gC T <sup>3'</sup>	5'-A Cg <sup>3'</sup>	5'-gC g <sup>3'</sup>	5'-A CC <sup>3'</sup>	5'-CCC <sup>3'</sup>	5'-Cg A <sup>3'</sup>	
										87			57	60							86		
										5'-g gA <sup>3'</sup>			5'-gC T <sup>3'</sup>	5'-gTT <sup>3'</sup>							5'-A Cg <sup>3'</sup>		
25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	<b>Tube No.</b>
																							<b>DQB1 allele<sup>4</sup></b>
																							*020101-020102
																							*0202
																							*0203
																							*0204
																							*0205
																							*030101-030102
																							*030103
																							*030201-030204
																							*030302-030303
																							*0304
																							*030501-030504
																							*0306
25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	<b>Tube No.</b>

Length of spec. PCR	120	85	145	140	145	165	220	135	190	135	95	125	110	135	135	260	165	190	135	130	205	205	135	120
Tube 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
*0307			+					+	+				+							+				
*0308			+					+	+			+								+				
*0309			+			+	+							+		+				+	+			
*0310			+				+								+	+				+	+			
*0311			+					+	+					+						+				
*0312			+						+						+	+				+	+			
*0313			+			+	+									+	+			+	+			
*0314			+				+			+					+	+				+				
*0315			+						+				+							+	+			
*0316			+			+	+						+			+								
*0317			+								+									+	+			
*0318			+					+	+										+	+				
*0319			+			+	+		+							+				+	+			
*0320			+						+		+									+	+			
*0401			+						+													+		
*0402			+						+														+	
*050101-050102			+																					+
*050201			+																					+
*050202			+																					+
*050301-050302			+																					
*0504			+																					
*0505			+		+																			+
*060101-060103			+												+									
*0602			+																					
*060301-060302			+																					
*060401, 060403			+																					
*060402			+																					
*060501			+																					
*060502			+																					
*0606			+																					
*0607			+																					
*060801			+																					
*060802			+																					
*0609			+																					
*0610			+																					
*061101			+																					
*061102			+																					
*0612			+																					
*0613			+																					
Tube 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

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95	120	210	185	130	160	170	210	170	130	260	210	180	95	190	110	175	135	215	160	130	160	155	Length of spec. PCR
													185					265			210		Tube No.
																							*0307
																							*0308
																							*0309
																							*0310
																							*0311
																							*0312
																							*0313
																							*0314
																							*0315
																							*0316
																							*0317
																							*0318
																							*0319
																							*0320
																						+	*0401
																						+	*0402
																							*050101-050102
																							*050201
+																							*050202
+																							*050301-050302
	+																						*0504
																							*0505
		+																					*060101-060103
		+	+																+				*0602
				+	+	+															+		*060301-060302
							+	+	+														*060401, 060403
					+		+	+	+														*060402
								+	+	+	+												*060501
		?						+		?	?												*060502
		?						+	+	?	?	+											*0606
				+	+		+	+													+		*0607
					+	+			+													+	*060801
						+			+													+	*060802
								+	+		+												*0609
		+											+				+		+				*0610
		+			+																		*061101
		+		+	+	+																	*061102
						+			+		+												*0612
		+												+						+			*0613
25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	Tube No.



Length of spec. PCR	120	85	145	140	145	165	220	135	190	135	95	125	110	135	135	260	165	190	135	130	205	205	135	120
Tube 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
*0614			+																					
*0615			+																					
*0616			+																					
*0617			+																					
*0618			+																					
*0619			+																					
*0620			+																					
*0621			+																					
*0622			+																					
*0623			+																					
*0624			+																					
*0625			+																					
*0626N			+																					
*0627			+																					
*0628			+																+					
*0629			+					+																
*0630			+																					
*0631			+																					
*0632			+																					
*0633			+																					
*0634			+															+						
DQB1 allele <sup>4</sup>																								
Tube 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

<sup>1</sup>The 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 tubes, or a band of 515 base pairs, for some tubes.

Tube 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, tubes number 3, 6, 7, 8, 9, 16, 18, 19, 21, 25, 31, 32, 35, 43, 45 and 46 contain the primer pair giving rise to the longer, 515 bp, internal positive control band in order to allow kit identification.

<sup>2</sup>The codon, in the 2<sup>nd</sup> or 3<sup>rd</sup> exon, matching the specificity-determining 3'-end of the primer is given. Codon numbering as in *Tissue Antigens* 1998, **51:II**, 467-507. The sequence of the 3 terminal nucleotides of the primer is given. Empty spaces indicate codon boundaries.

<sup>3</sup>The codon, in the 2<sup>nd</sup> or 3<sup>rd</sup> exon, matching the specificity-determining 3'-end of the primer is given in the anti-sense direction. Codon numbering as in *Tissue Antigens* 1998, **51:II**, 467-507. The sequence of the 3 terminal nucleotides of the primer is given. Empty spaces indicate codon boundaries.

<sup>4</sup>The sequence of the DQB1\*03031 allele has been shown to be identical to DQB1\*030302.

<sup>5</sup>Primer mix 4: Specific PCR fragment of 140 bp in the DQB1\*0202 and 0203 alleles. Specific PCR fragment of 180 bp in the DQB1\*0205 allele.

Primer mix 5: Specific PCR fragment of 145 bp in the DQB1\*0205 allele. Specific PCR fragment of 185 bp in the DQB1\*0505 allele.

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95	120	210	185	130	160	170	210	170	130	260	210	180	95	190	110	175	135	215	160	130	160	155	Length of spec. PCR	
													185					265				210		
25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	Tube No.	
			+	+		+							+						+		+		*0614	
			+								+								+	+			*0615	
		+	+											+					+				*0616	
							+		+							+							*0617	
		+						+	+														*0618	
		+	+																			+	*0619	
		+	+							+									+				*0620	
						+	+		+													+	*0621	
											+			+									*0622	
			+												+				+				*0623	
		+	+													+			+				*0624	
							+	+										+					*0625	
				+	+	+												+					*0626N	
								+	+													+	*0627	
				+	+	+																+	*0628	
		+																	+				*0629	
				+	+											+						+	*0630	
				+	+	+				+												+	*0631	
				+	+				+													+	*0632	
		+	+															+	+				*0633	
							+	+	+														*0634	
																							DQB1 allele <sup>4</sup>	
25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	Tube No.	

Primer mix 9: Specific PCR fragment of 190 bp in DQB1\*030501-030504, 0319 and the DQB1\*0401-0402 alleles. Specific PCR fragment of 220 bp in the DQB1\*0306-0308, 0311, 01312, 0315, 0318, 0320 and the DQB1\*020201-0205 alleles. Specific PCR fragments of 190 and 220 bp (both specific PCR fragments may not be obtained) in the DQB1\*030201-030204 and DQB1\*030302-030303 alleles.

Primer mix 11: Specific PCR fragment of 95 bp in the DQB1\*0320 allele. Specific PCR fragment of 130 bp in the DQB1\*030501-030504 and 0317 alleles.

Primer mix 13: Specific PCR fragment of 110 bp in the DQB1\*0315 allele. Specific PCR fragment of 140 bp in the DQB1\*0307 and 0316 alleles.

Primer mix 14: Specific PCR fragment of 135 bp in the DQB1\*0309 allele. Specific PCR fragment of 260 bp in the DQB1\*0311 allele.

Primer mix 17: Specific PCR fragment of 165 bp in the DQB1\*0313 allele. Specific PCR fragment of 300 bp in the DQB1\*0634 allele.

Primer mix 18: Specific PCR fragment of 190 bp in the DQB1\*0628 allele. Specific PCR fragment of 220 bp in the DQB1\*0318 allele.

Primer mix 38: Specific PCR fragment of 95 bp in DQB1\*0614 allele. Specific PCR fragment of 185 bp in the DQB1\*0610 allele.

Primer mix 43: Specific PCR fragment of 215 bp in the DQB1\*0626N allele. Specific PCR fragment of 265 bp in the DQB1\*0633 allele.

Primer mix 46: Specific PCR fragment of 160 bp in the DQB1\*060301-060302, 060801-060802, 0614, 0621, 0628 and 0630 to 0632 alleles. Specific PCR fragment of 210 bp in the DQB1\*0627 allele.

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



DQB1 high resolution for frequent alleles  
 101.221-12 – licensed for PCR  
 101.221-12u – not licensed for PCR

Lot No.: Y37

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CELL LINE VALIDATION SHEET																			
DQB1 high resolution primer set																			
				Tube															
				1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
				200618901	200618902	200618903	200738304	200738305	200618906	200618907	200738308	200738309	200739310	200738311	200618912	200618913	200618914	200618915	200618916
	cell line	DQB1	Production No.																
1	9001 SA	*0501		-	-	+	-	-	-	-	-	-	-	-	-	-	-	-	-
2	9280 LK707	*0601	*0202	+	-	+	+	-	-	-	+	+	-	-	-	-	-	+	-
3	9011 E4181324	*0601		-	-	+	-	-	-	-	-	-	-	-	-	-	-	+	-
4	9275 GU373	*0201		+	-	+	-	-	-	-	+	+	-	-	-	-	-	-	-
5	9009 KAS011	*0502		-	-	+	-	-	-	-	-	-	-	-	-	-	-	-	-
6	9353 SM	*0302	*0601	-	-	+	-	-	-	-	+	+	-	-	-	-	-	+	-
7	9020 QBL	*0201		+	-	+	-	-	-	-	+	+	-	-	-	-	-	-	-
8	9007 DEM	*0302	*0502	-	-	+	-	-	-	-	+	+	-	-	-	-	-	-	-
9	9026 YAR	*0302		-	-	+	-	-	-	-	+	+	-	-	-	-	-	-	-
10	9107 LKT3	*0401		-	-	+	-	-	-	-	-	-	-	-	-	-	-	-	-
11	9051 PITOUT	*0202		+	-	-	+	-	-	-	+	+	-	-	-	-	-	-	-
12	9052 DBB	*0303		-	-	+	-	-	-	-	-	+	-	-	-	-	-	-	-
13	9067 BTB	*0402		-	-	+	-	-	-	-	-	-	-	-	-	-	-	-	-
14	9071 OLGA	*0402		-	-	+	-	-	-	-	-	-	-	-	-	-	-	-	-
15	9075 DKB	*0303		-	-	+	-	-	-	-	-	+	-	-	-	-	-	-	-
16	9037 SWEIG007	*0301		-	-	+	-	-	+	+	-	-	-	-	-	-	-	-	+
17	9008 WILJON	*0602	*0603	-	-	+	-	-	-	-	-	-	-	-	-	-	-	-	-
18	9257 32367	*0602	*0202	+	-	+	+	-	-	-	+	+	-	-	-	-	-	-	-
19	9038 BM16	*0301		-	-	+	-	-	+	+	-	-	-	-	-	-	-	-	+
20	9059 SLE005	*0604		-	-	+	-	-	-	-	-	-	-	-	-	-	-	-	-
21	9064 AMALA	*0301		-	-	+	-	-	+	+	-	-	-	-	-	-	-	-	+
22	9056 KOSE	*0503	*0604	-	-	+	-	-	-	-	-	-	-	-	-	-	-	-	-
23	9124 IHL	*0503	*0601	-	-	+	-	-	-	-	-	-	-	-	-	-	-	+	-
24	9035 JBUSH	*0301		-	-	+	-	-	+	+	-	-	-	-	-	-	-	-	+
25	9049 IBW9	*0202		+	-	-	+	-	-	-	+	+	-	-	-	-	-	-	-
26	9285 WT49	*0201		+	-	+	-	-	-	-	+	+	-	-	-	-	-	-	-
27	9191 CH1007	*0401	*0501	-	-	+	-	-	-	-	-	-	-	-	-	-	-	-	-
28	9320 BEL5GB	*0202	*0301	+	-	+	+	-	+	+	+	+	-	-	-	-	-	-	+
29	9050 MOU	*0202		+	-	-	+	-	-	-	+	+	-	-	-	-	-	-	-
30	9021 RSH	*0402		-	-	+	-	-	-	-	-	-	-	-	-	-	-	-	-
31	9019 DUCAF	*0201		+	-	+	-	-	-	-	+	+	-	-	-	-	-	-	-
32	9297 HAG	*0301		-	-	+	-	-	+	+	-	-	-	-	-	-	-	-	+
33	9098 MT14B	*0302		-	-	+	-	-	-	-	+	+	-	-	-	-	-	-	-
34	9104 DHIF	*0301		-	-	+	-	-	+	+	-	-	-	-	-	-	-	-	+
35	9302 SSTO	*0305		-	-	+	-	-	-	-	-	+	-	+	-	-	-	-	-
36	9024 KT17	*0302		-	-	+	-	-	-	-	+	+	-	-	-	-	-	-	-
37	9065 HHKB	*0603		-	-	+	-	-	-	-	-	-	-	-	-	-	-	-	-
38	9099 LZL	*0301		-	-	+	-	-	+	+	-	-	-	-	-	-	-	-	+
39	9315 CML	*0201	*0301	+	-	+	-	-	+	+	+	+	-	-	-	-	-	-	+
40	9134 WHONP199	*0202	*0303	+	-	+	+	-	-	-	+	+	-	-	-	-	-	-	-
41	9055 H0301	*0609		-	-	+	-	-	-	-	-	-	-	-	-	-	-	-	-
42	9066 TAB089	*0601		-	-	+	-	-	-	-	-	-	-	-	-	-	-	+	-
43	9076 T7526	*0303		-	-	+	-	-	-	-	-	+	-	-	-	-	-	-	-
44	9057 TEM	*0503		-	-	+	-	-	-	-	-	-	-	-	-	-	-	-	-
45	9239 SHJO	*0202		+	-	-	+	-	-	-	+	+	-	-	-	-	-	-	-
46	9013 SCHU	*0602		-	-	+	-	-	-	-	-	-	-	-	-	-	-	-	-
47	9045 TUBO	*0301		-	-	+	-	-	+	+	-	-	-	-	-	-	-	-	+
48	9303 TER-ND	*0501		-	-	+	-	-	-	-	-	-	-	-	-	-	-	-	-



DQB1 high resolution for frequent alleles  
 101.221-12 – licensed for PCR  
 101.221-12u – not licensed for PCR

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CELL LINE VALIDATION SHEET																					
DQB1 high resolution primer set																					
				Production No.	Tube																
					17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	
					200738317	200618918	200618919	200618920	200618921	200618922	200618923	200618924	200618925	200618926	200618927	200618928	200618929	200618930	200618931	200618932	
	cell line		DQB1																		
1	9001 SA		*0501		-	-	-	-	-	-	+	-	-	-	-	-	-	-	-	-	-
2	9280 LK707		*0601	*0202	-	-	-	-	-	-	-	-	-	-	+	-	-	-	-	-	-
3	9011 E4181324		*0601		-	-	-	-	-	-	-	-	-	-	+	-	-	-	-	-	-
4	9275 GU373		*0201		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
5	9009 KAS011		*0502		-	-	-	-	-	-	-	+	-	-	-	-	-	-	-	-	-
6	9353 SM		*0302	*0601	-	-	+	-	-	-	-	-	-	-	+	-	-	-	-	-	-
7	9020 QBL		*0201		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
8	9007 DEM		*0302	*0502	-	-	+	-	-	-	-	+	-	-	-	-	-	-	-	-	-
9	9026 YAR		*0302		-	-	+	-	-	-	-	-	-	-	-	-	-	-	-	-	-
10	9107 LKT3		*0401		-	-	-	-	+	-	-	-	-	-	-	-	-	-	-	-	-
11	9051 PITOUT		*0202		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
12	9052 DBB		*0303		-	-	+	+	-	-	-	-	-	-	-	-	-	-	-	-	-
13	9067 BTB		*0402		-	-	-	-	-	+	-	-	-	-	-	-	-	-	-	-	-
14	9071 OLGA		*0402		-	-	-	-	-	+	-	-	-	-	-	-	-	-	-	-	-
15	9075 DKB		*0303		-	-	+	+	-	-	-	-	-	-	-	-	-	-	-	-	-
16	9037 SWEIG007		*0301		-	-	+	+	-	-	-	-	-	-	-	-	-	-	-	-	-
17	9008 WILJON		*0602	*0603	-	-	-	-	-	-	-	-	-	-	+	+	+	+	+	-	-
18	9257 32367		*0602	*0202	-	-	-	-	-	-	-	-	-	-	+	+	-	-	-	-	-
19	9038 BM16		*0301		-	-	+	+	-	-	-	-	-	-	-	-	-	-	-	-	-
20	9059 SLE005		*0604		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	+
21	9064 AMALA		*0301		-	-	+	+	-	-	-	-	-	-	-	-	-	-	-	-	-
22	9056 KOSE		*0503	*0604	-	-	-	-	-	-	-	-	+	-	-	-	-	-	-	-	+
23	9124 IHL		*0503	*0601	-	-	-	-	-	-	-	-	+	-	+	-	-	-	-	-	-
24	9035 JBUSH		*0301		-	-	+	+	-	-	-	-	-	-	-	-	-	-	-	-	-
25	9049 IBW9		*0202		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
26	9285 WT49		*0201		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
27	9191 CH1007		*0401	*0501	-	-	-	-	+	-	+	-	-	-	-	-	-	-	-	-	-
28	9320 BEL5GB		*0202	*0301	-	-	+	+	-	-	-	-	-	-	-	-	-	-	-	-	-
29	9050 MOU		*0202		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
30	9021 RSH		*0402		-	-	-	-	-	+	-	-	-	-	-	-	-	-	-	-	-
31	9019 DUCAF		*0201		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
32	9297 HAG		*0301		-	-	+	+	-	-	-	-	-	-	-	-	-	-	-	-	-
33	9098 MT14B		*0302		-	-	+	-	-	-	-	-	-	-	-	-	-	-	-	-	-
34	9104 DHIF		*0301		-	-	+	+	-	-	-	-	-	-	-	-	-	-	-	-	-
35	9302 SSTO		*0305		-	-	+	-	-	-	-	-	-	-	-	-	-	-	-	-	-
36	9024 KT17		*0302		-	-	+	-	-	-	-	-	-	-	-	-	-	-	-	-	-
37	9065 HHKB		*0603		-	-	-	-	-	-	-	-	-	-	-	-	+	+	+	-	-
38	9099 LZL		*0301		-	-	+	+	-	-	-	-	-	-	-	-	-	-	-	-	-
39	9315 CML		*0201	*0301	-	-	+	+	-	-	-	-	-	-	-	-	-	-	-	-	-
40	9134 WHONP199		*0202	*0303	-	-	+	+	-	-	-	-	-	-	-	-	-	-	-	-	-
41	9055 H0301		*0609		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
42	9066 TAB089		*0601		-	-	-	-	-	-	-	-	-	-	+	-	-	-	-	-	-
43	9076 T7526		*0303		-	-	+	+	-	-	-	-	-	-	-	-	-	-	-	-	-
44	9057 TEM		*0503		-	-	-	-	-	-	-	-	+	-	-	-	-	-	-	-	-
45	9239 SHJO		*0202		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
46	9013 SCHU		*0602		-	-	-	-	-	-	-	-	-	-	+	+	-	-	-	-	-
47	9045 TUBO		*0301		-	-	+	+	-	-	-	-	-	-	-	-	-	-	-	-	-
48	9303 TER-ND		*0501		-	-	-	-	-	-	+	-	-	-	-	-	-	-	-	-	-



CELL LINE VALIDATION SHEET																			
DQB1 high resolution primer set																			
				Tube															
				33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	
				200618933	200618934	200618935	200618936	200618937	200618938	200618939	200618940	200618941	200618942	200738343	200618944	200618945	200618946	200738347	
	cell line	DQB1	Production No.																
1	9001 SA	*0501		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
2	9280 LK707	*0601	*0202	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
3	9011 E4181324	*0601		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
4	9275 GU373	*0201		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
5	9009 KAS011	*0502		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
6	9353 SM	*0302	*0601	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
7	9020 QBL	*0201		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
8	9007 DEM	*0302	*0502	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
9	9026 YAR	*0302		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
10	9107 LKT3	*0401		-	-	-	-	-	-	-	-	-	-	-	-	-	-	+	
11	9051 PITOUT	*0202		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
12	9052 DBB	*0303		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
13	9067 BTB	*0402		-	-	-	-	-	-	-	-	-	-	-	-	-	-	+	
14	9071 OLGA	*0402		-	-	-	-	-	-	-	-	-	-	-	-	-	-	+	
15	9075 DKB	*0303		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
16	9037 SWEIG007	*0301		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
17	9008 WILJON	*0602	*0603	-	-	-	-	-	-	-	-	-	-	-	-	+	+	-	
18	9257 32367	*0602	*0202	-	-	-	-	-	-	-	-	-	-	-	+	-	-	-	
19	9038 BM16	*0301		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
20	9059 SLE005	*0604		+	+	-	-	-	-	-	-	-	-	-	-	-	-	-	
21	9064 AMALA	*0301		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
22	9056 KOSE	*0503	*0604	+	+	-	-	-	-	-	-	-	-	-	-	-	-	-	
23	9124 IHL	*0503	*0601	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
24	9035 JBUSH	*0301		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
25	9049 IBW9	*0202		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
26	9285 WT49	*0201		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
27	9191 CH1007	*0401	*0501	-	-	-	-	-	-	-	-	-	-	-	-	-	-	+	
28	9320 BEL5GB	*0202	*0301	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
29	9050 MOU	*0202		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
30	9021 RSH	*0402		-	-	-	-	-	-	-	-	-	-	-	-	-	-	+	
31	9019 DUCAF	*0201		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
32	9297 HAG	*0301		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
33	9098 MT14B	*0302		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
34	9104 DHIF	*0301		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
35	9302 SSTO	*0305		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
36	9024 KT17	*0302		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
37	9065 HHKB	*0603		-	-	-	-	-	-	-	-	-	-	-	-	-	+	-	
38	9099 LZL	*0301		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
39	9315 CML	*0201	*0301	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
40	9134 WHONP199	*0202	*0303	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
41	9055 H0301	*0609		+	+	-	+	-	-	-	-	-	-	-	-	-	-	-	
42	9066 TAB089	*0601		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
43	9076 T7526	*0303		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
44	9057 TEM	*0503		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
45	9239 SHJO	*0202		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
46	9013 SCHU	*0602		-	-	-	-	-	-	-	-	-	-	-	+	-	-	-	
47	9045 TUBO	*0301		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
48	9303 TER-ND	*0501		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	



## CERTIFICATE OF ANALYSIS

### Olerup SSP™ DQB1 high resolution for frequent alleles SSP

Product number: 101.221-12 – licensed for PCR  
101.221-12u – not licensed for PCR  
Lot number: Y37  
Expiry date: 2009-September-01  
Number of tests: 12 tests  
Number of tubes per test: 47 + 1

#### Tube specifications:

Tube No.	Production No.	Tube No.	Production No.	Tube No.	Production No.
1	2006-189-01	17	2007-383-17	33	2006-189-33
2	2006-189-02	18	2006-189-18	34	2006-189-34
3	2006-189-03	19	2006-189-19	35	2006-189-35
4	2007-383-04	20	2006-189-20	36	2006-189-36
5	2007-383-05	21	2006-189-21	37	2006-189-37
6	2006-189-06	22	2006-189-22	38	2006-189-38
7	2006-189-07	23	2006-189-23	39	2006-189-39
8	2007-383-08	24	2006-189-24	40	2006-189-40
9	2007-383-09	25	2006-189-25	41	2006-189-41
10	2007-383-10	26	2006-189-26	42	2006-189-42
11	2007-393-11	27	2006-189-27	42	2007-383-43
12	2006-189-12	28	2006-189-28	43	2006-189-44
13	2006-189-13	29	2006-189-29	45	2006-189-45
14	2006-189-14	30	2006-189-30	46	2006-189-46
15	2006-189-15	31	2006-189-31	47	2007-383-47
16	2006-189-16	32	2006-189-32		

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

No DNAs carrying the alleles to be amplified by primer solutions 2, 5, 10, 12, 13, 14, 17, 18, 26, 35, 37-43 and 45 were available. The specificities of the primers in primer solutions 2, 10, 12, 14, 26, 35, 37, 38, 39, 40, 42 and 45 were tested by separately adding one additional 5'-primer, respectively one additional 3'-primer. In primer solutions 17 and 41 it was only possible to test the 5'-primers, the 3'-primers were not possible to test. In primer solution 5, 13, 18 and 43 it was only possible to test the 3'-primers, the 5'-primers were not possible to test.

The negative control primer pairs, **Production No. 2006-148-01**, can detect contamination with PCR products diluted  $10^{-7}$ .

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

**Date of approval:** 2007-November-23

**Approved by:**

**Quality Control, Supervisor**

## Declaration of Conformity

**Product name:** Olerup SSP™ DQB1  
**Product number:** 101.221-12, 101.221-12u  
**Lot number:** Y37

**Intended use:** DQB1 high resolution histocompatibility testing

**Manufacturer:** Olerup SSP AB  
Hasselstigen 1  
SE-133 33 Saltsjöbaden, 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 9001:2000, ISO 17025:1999 and ISO 13485:2000, following the provisions of the 98/79/EC Directive on *in vitro* diagnostic medical devices, Annex III.

The Technical Construction File is maintained at Olerup SSP AB, Hasselstigen 1, SE-133 33 Saltsjöbaden, Sweden.

The Authorized Representative located within the Community is: Olerup SSP AB.

Saltsjöbaden, Sweden  
2007-November-23

Olle Olerup  
Managing Director

## WARRANTY

*Olerup* SSP AB warrants its products to the original purchaser against defects in materials and workmanship under normal use and application. *Olerup* SSP AB's sole obligation under this warranty shall be to replace, at no charge, any product that does not meet the performance standards stated on the product specification sheet.

This warranty applies only to products that have been handled and stored in accordance with *Olerup* SSP AB's recommendations, and does not apply to products that have been the subject of alternation, misuse, or abuse.

All claims under this warranty must be directed to *Olerup* SSP AB in writing and must be accompanied by a copy of the purchaser's invoice. This warranty is in lieu of all other warranties, expressed or implied, including the warranties of merchantability and fitness for a particular purpose. In no case shall *Olerup* SSP AB be liable for incidental or consequential damages.

This product may not be reformulated, repacked or resold in any form without the written consent of *Olerup* SSP AB, Hasselstigen 1, SE-133 33 Saltsjöbaden, Sweden.

Handle all samples as if capable of transmitting disease. All work should be performed wearing gloves and appropriate protection.

*Olerup* SSP™ is a trademark of *Olerup* SSP AB.  
PCR™ is a trademark of F. Hoffmann-La Roche Ltd.  
ARMS™ is a trademark of Zeneca Ltd.

DQB1 high resolution for frequent alleles  
101.221-12 – licensed for PCR  
101.221-12u – not licensed for PCR

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Lot No.: **Y37**

[www.olerup.com](http://www.olerup.com)

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