

Lot No.: **43E**

Lot-specific information

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Olerup SSP[®] DQB1 high resolution for frequent alleles

Product number: 101.221-12 – including *Taq* polymerase
101.221-12u – without *Taq* polymerase

Lot number: 43E

Expiry date: 2010-April-01

Number of tests: 12 tests

Number of wells per test: 47 + 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. 43E.

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. Y37**) was made.

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

Well	5'-primer	3'-primer	rationale
6	Modified	-	Increased primer specificity.
7	Modified	-	Increased yield of specific PCR product.
18	-	-	Change of control primer pair for decreased primer dimer formation tendency.
19	Modified	-	Increased yield of specific PCR product.
20	Modified	-	Increased yield of specific PCR product.
40	Added	Added	Primer pair added for the DQB1*0321 allele.
47	-	-	Change of control primer pair for decreased primer dimer formation tendency.

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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
5'-primer¹	164	340	440	45	45	43
	5'-CAC ^{3'}	5'-Agg ^{3'}	5'-TTA ^{3'}	5'-Tg g ^{3'}	5'-Tg g ^{3'}	5'-Tg g ^{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*	+	+	+			
Cw*	+	+	+			
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.

PRODUCT DESCRIPTION

DQB1 SSP typing

CONTENT

The primer set contains 5'- and 3'-primers for identifying the DQB1*0201 to DQB1*0634 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 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"'.
Well No. 1 is marked with the Lot No. '43E'.

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.

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

All the phenotypically different DQB1 alleles, i.e. DQB1*0201 to 0205, DQB1*0301 to 0321, DQB1*0401 to 0402, DQB1*0501 to 0504 and DQB1*0601 to 0634, recognized by the HLA Nomenclature Committee in January 2008¹ will give rise to unique amplification patterns by the primers in the DQB1 high resolution for frequent alleles typing kit.

The DQB1 typing kit cannot distinguish the DQB1*020101 and 020102 alleles, the DQB1*030101, 030102 and 030104 alleles, the DQB1*030201 to 030204 alleles, the DQB1*030302 and 030303 alleles, the DQB1*030501 to 030504 alleles, the DQB1*050101 and 050102 alleles, the DQB1*050301 and 050302 alleles, the DQB1*060101 to 060103 alleles and the DQB1*060401 and 060403 alleles.

¹DQB1 alleles listed on the IMGT/HLA web page 2008-January-11, release 2.20.0, www.ebi.ac.uk/imgt/hla.

RESOLUTION IN HOMO- AND HETEROZYGOTES

The 67 DQB1 alleles generate 75 amplification patterns, the DQB1*030101/030102/030104 and 030103, the DQB1*050201 and 050202, the DQB1*060201 and 060202, the DQB1*060401/060403 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 2 850 homozygous and heterozygous combinations. 514 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, 38, 40, 43 and 46 were not considered in these calculations.)

++++---+ +-----	-----	-----	-----	-----	-----	0201,0203 = 0203,0205
+-----+ +---+-----	-----	---++-----	-----	-----	---+-----	0202,060202 = 0205,060202
+-----+ +-----	-----	-----+	-----	-----	-----	0202,0505 = 0205,0505
+-----+ +-----	-----	-----	-----	-----	-----	0202,0204 = 0204,0205
+-----+ ++-----+	---+-----	-----	-----	-----	-----	0202,0304 = 0205,0304
+-----+ +---+---+	-----	-----	-----	-----	-----	0202,0316 = 0205,0316
+-----+ +---+---+	---+-----	-----	-----	-----	-----	0202,0309 = 0205,0309
+-----+ +---+---+	---+-----	-----	-----	-----	-----	0202,0313 = 0205,0313
+-----+ +---+---+	---+-----	-----	-----	-----	-----	0202,0321 = 0205,0321
+-----+ +---+---+	---+-----	-----	-----	-----	-----	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
+-----+ +---+-----	-----	-----	-----	-----	-----	0202,060302 = 0205,060302
+-----+ +---+-----	---+-----	-----	-----	-----	-----	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



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+---+---+ +----- --+-----	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
+---+---+ +----- ---+-----	0202,060201 = 0205,060201
+---+---+ +----- ---+-----	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
+---+---+ +----- ---+-----	0202,0615 = 0205,0615
+---+---+ +----- ---+-----	0202,0623 = 0205,0623
+---+---+ +----- ---+-----	0202,0631 = 0205,0631
+---+---+ +----- ---+-----	0202,0626N = 0205,0626N
+---+---+ +----- ---+-----	0202,060301 = 0205,060301
+---+---+ +----- ---+-----	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
+---+---+ +----- ---+-----	0201,060202 = 0204,060202
+---+---+ +----- ---+-----	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
+---+---+ +----- ---+-----	0302,060202 = 0308,060202
+---+---+ +----- ---+-----	0303,060202 = 0306,060202
+---+---+ +----- ---+-----	050201,060202 =
	0505,060202



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--++---	---+---	-----	--++++-	-----	---+--	060202,060301 =
						060202,060302
--++---	---+---	-----	--++---	-----	---+---	060202,0613 = 060202,0616
--++---	---+---	-----	--++---	-----	---+---	060201,060202 =
						060202,060202
--++---	-----	-----+	+-----	-----	-----	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
--++---	+++---	---+	-----	-----	-----	0305,0321 = 0320,0321
--++---	+++---	---+	-----	-----	-----	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
--++---	+++---	+++---	-----	-----	-----	0303,0321 = 0319,0321
--++---	+++---	+++---	-----	-----	-----	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
--++---	+++---	+++---	-----	-----	-----	0301,0313 = 030103,0313 =
						0313,0313
--++---	+++---	---+	-----	-----	+++---	0301,0623 = 0321,0623
--++---	+++---	---+	-----	-----	+++---	0301,0321 = 030103,0321 =
						0321,0321
--++---	+++---	---+	-----	-----	-----	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



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--+-----+ +--+----- -+++-----	-----	-----	-----	-----	-----	0317,0318 = 0318,0320
--+-----+ +--+----- -+++-----	-----	-----	-----	-----	-----	0302,0317 = 0302,0320
--+-----+ +--+----- -+++-----	-----	-----	-----	-----	-----	0306,0307 = 0308,0315
--+-----+ +--+----- -+++-----	-----	-----	-----	-----	-----	0308,0628 = 0318,060302
--+-----+ +--+----- -+++-----	-----	-----	-----	-----	-----	0302,0306 = 0303,0308 =
						0306,0308
--+-----+ +--+----- -+++-----	-----	-----	-----	-----	-----	0302,060302 = 0308,060301
						= 0308,060302
--+-----+ +--+----- -+++-----	-----	-----	-----	-----	-----	0302,0308 = 0308,0308
--+-----+ +--+----- -+++-----	-----	-----	-----	-----	-----	0302,0315 = 0303,0307 =
						0307,0315
--+-----+ +--+----- -+++-----	-----	-----	-----	-----	-----	0302,0307 = 0307,0307
--+-----+ +--+----- -+++-----	-----	-----	-----	-----	-----	0302,0311 = 0311,0311
--+-----+ +--+----- -+++-----	-----	-----	-----	-----	-----	0302,0628 = 0318,060301 =
						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
--+-----+ +--+----- -+++-----	-----	-----	-----	-----	-----	0303,060302 = 0306,060301
						= 0306,060302
--+-----+ +--+----- -+++-----	-----	-----	-----	-----	-----	0303,0306 = 0306,0306
--+-----+ +--+----- -+++-----	-----	-----	-----	-----	-----	0303,0315 = 0315,0315
--+-----+ +--+----- -+++-----	-----	-----	-----	-----	-----	0303,0312 = 0312,0312
--+-----+ +--+----- -+++-----	-----	-----	-----	-----	-----	060302,061101 =
						060302,061102
--+-----+ +--+----- -+++-----	-----	-----	-----	-----	-----	060302,0604 =
						060302,060402
--+-----+ +--+----- -+++-----	-----	-----	-----	-----	-----	060302,060801 =
						060302,060802
--+-----+ +--+----- -+++-----	-----	-----	-----	-----	-----	060301,060302 =
						060302,060302
--+-----+ +--+----- -+++-----	-----	-----	-----	-----	-----	060802,0634 = 0621,0634
--+-----+ +--+----- -+++-----	-----	-----	-----	-----	-----	060501,0634 = 060502,0634
--+-----+ +--+----- -+++-----	-----	-----	-----	-----	-----	0604,0634 = 0634,0634
--+-----+ +--+----- -+++-----	-----	-----	-----	-----	-----	061101,0628 = 061102,0628
--+-----+ +--+----- -+++-----	-----	-----	-----	-----	-----	0604,0628 = 060402,0628
--+-----+ +--+----- -+++-----	-----	-----	-----	-----	-----	060801,0628 = 060802,0628
--+-----+ +--+----- -+++-----	-----	-----	-----	-----	-----	060301,0628 = 0628,0628
--+-----+ +--+----- -+++-----	-----	-----	-----	-----	-----	050201,050202 =
						050201,0503 =
						050202,050202 =
						050202,0503
--+-----+ +--+----- -+++-----	-----	-----	-----	-----	-----	060201,0631 = 060301,0620
						= 0620,0631
--+-----+ +--+----- -+++-----	-----	-----	-----	-----	-----	061101,0614 = 061102,0614
--+-----+ +--+----- -+++-----	-----	-----	-----	-----	-----	060201,0626N = 061102,0633
						= 0626N,0633
--+-----+ +--+----- -+++-----	-----	-----	-----	-----	-----	060201,0630 = 0624,0630
--+-----+ +--+----- -+++-----	-----	-----	-----	-----	-----	0613,0614 = 0614,0616



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--+-----	-----	-----	--++-----	+-----	-----	060201,0617 = 0617,0624
--+-----	-----	-----	--++-----	+++++-----	-----	060201,0606 = 0606,0620
--+-----	-----	-----	--++-----	+++++-----	-----	060201,060501 =
						060501,0620 = 0609,0620
--+-----	-----	-----	--++-----	+-----	-----	060201,060502 =
						060502,0620
--+-----	-----	-----	--++-----	+-----	-----	0613,0620 = 0616,0620
--+-----	-----	-----	--++-----	+-----	-----	060201,0620 = 0620,0620
--+-----	-----	-----	--++-----	+-----	-----	0613,0615 = 0615,0616
--+-----	-----	-----	--++-----	+-----	-----	060201,0622 = 0616,0622
--+-----	-----	-----	--++-----	+-----	-----	0613,0623 = 0616,0623
--+-----	-----	-----	--++-----	+-----	-----	0613,0624 = 0616,0624
--+-----	-----	-----	--++-----	+-----	-----	0613,0633 = 0616,0633
--+-----	-----	-----	--++-----	+-----	-----	0613,0619 = 0616,0619
--+-----	-----	-----	--++-----	+-----	-----	060201,0613 = 060201,0616
						= 0613,0616 = 0616,0616
--+-----	-----	-----	--++-----	+-----	-----	060201,0624 = 0624,0624
--+-----	-----	-----	--++-----	+-----	-----	060201,0633 = 0633,0633
--+-----	-----	-----	--++-----	+-----	-----	0604,061102 =
						060402,061102
--+-----	-----	-----	--++-----	+-----	-----	060301,0618 = 061102,0627
--+-----	-----	-----	--++-----	+-----	-----	060801,061102 =
						060802,061102
--+-----	-----	-----	--++-----	+-----	-----	061101,0631 = 061102,0631
--+-----	-----	-----	--++-----	+-----	-----	061101,0626N =
						061102,0626N
--+-----	-----	-----	--++-----	+-----	-----	060301,061101 =
						060301,061102
--+-----	-----	-----	--++-----	+-----	-----	061101,061102 =
						061102,061102
--+-----	-----	-----	--++-----	+-----	-----	060801,061101 =
						060802,061101
--+-----	-----	-----	--++-----	+-----	-----	0604,061101 =
						060402,061101 =
						060402,0618
--+-----	-----	-----	--++-----	+-----	-----	060501,0618 = 060502,0618
--+-----	-----	-----	--++-----	+-----	-----	0604,0631 = 060402,0631
--+-----	-----	-----	--++-----	+-----	-----	0604,0626N = 060402,0626N
--+-----	-----	-----	--++-----	+-----	-----	0607,060801 = 0607,060802
						= 0607,0621
--+-----	-----	-----	--++-----	+-----	-----	060301,0604 =
						060301,060402 = 0621,0632
--+-----	-----	-----	--++-----	+-----	-----	060301,0617 = 0621,0630
--+-----	-----	-----	--++-----	+-----	-----	060301,0606 = 0606,0631
--+-----	-----	-----	--++-----	+-----	-----	060301,060501 =
						060501,0631 = 0609,0631
--+-----	-----	-----	--++-----	+-----	-----	060301,0609 = 0612,0632
--+-----	-----	-----	--++-----	+-----	-----	060301,0627 = 060801,0632
						= 060802,0632
--+-----	-----	-----	--++-----	+-----	-----	060301,060502 =
						060502,0631
--+-----	-----	-----	--++-----	+-----	-----	060801,0631 = 060802,0631
--+-----	-----	-----	--++-----	+-----	-----	060801,0630 = 060802,0630
--+-----	-----	-----	--++-----	+-----	-----	060801,0626N =
						060802,0626N
--+-----	-----	-----	--++-----	+-----	-----	060301,060801 =
						060301,060802
--+-----	-----	-----	--++-----	+-----	-----	060301,0631 = 0631,0631



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--+-----	-----	-----	----++-+	++-----	+-----+	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

0301 = 030101, 030102 and 030104

0604 = 060401 and 060403

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	Size of spec. PCR product ¹	Size of control band ²	Amplified DQB1 alleles
1⁴	120 bp	515 bp	020101-0202, 0204, 0205
2⁴	85 bp	430 bp	0203
3	145 bp	515 bp	020101-020102, 0204, 0205, 030101-030204, 030302-0321, 0401, 0402, 050101-0505, 060101-0634
4^{5,6}	140, 180 bp	430 bp	0202, 0203, 0205
5⁷	145, 185 bp	430 bp	0204, 0505, 060202 ^{weakly}
6³	165 bp	515 bp	030101-030104, 0304, 0309, 0313, 0316, 0319, 0321
7³	220 bp	515 bp	030101-030104, 0304, 0309, 0310, 0313, 0314, 0316, 0319, 0321
8³	135 bp	515 bp	020101-0202, 0204, 0205, 030201-030204, 0307, 0308, 0311, 0318, 0629
9^{3,8}	190, 220 bp	515 bp	020101-0205, 030201-030204, 030302-030303, 030501-0308, 0311, 0312, 0315, 0318-0320, 0401, 0402
10	135 bp	430 bp	0304, 0314
11^{4,9}	95, 130 bp	430 bp	030501-030504, 0317, 0320
12⁴	125 bp	430 bp	0306, 0308, 060202, 060302
13^{4,10}	110, 140 bp	430 bp	0307, 0315, 0316
14¹¹	135, 260 bp	430 bp	0309, 0311
15³	135 bp	430 bp	0310, 0312, 0314, 060101-060103
16³	260 bp	515 bp	030101-030104, 0304, 0309, 0310, 0312-0314, 0316, 0319, 0321
17¹²	165, 300 bp	430 bp	0313, 0634
18^{5,13}	190, 220 bp	430 bp	0318, 0628
19	135 bp	515 bp	030101-030204, 030302-0315, 0317-0321
20	130 bp	430 bp	030101-030102, 030104, 030302-030303, 0306, 0309, 0310, 0312, 0313, 0315, 0317, 0319-0321
21	205 bp	515 bp	0401
22³	205 bp	430 bp	0402
23	135 bp	430 bp	050101-050102
24⁴	120 bp	430 bp	050201-050202, 0505

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25⁴	95 bp	515 bp	050202-050302
26⁴	120 bp	430 bp	0504
27	210 bp	430 bp	060101-060202, 060502 [?] , 0606 [?] , 0610-061102, 0613, 0616, 0618-0620, 0624, 0629, 0633
28	185 bp	430 bp	060201-060202, 0614-0616, 0619, 0620, 0623, 0624, 0633
29	130 bp	430 bp	060301-060302, 0607, 061102, 0614, 0626N, 0628, 0630-0632
30	160 bp	430 bp	060301-060302, 060402, 0607, 060801, 061101-061102, 0626N, 0628, 0630-0632
31	170 bp	515 bp	060301-060302, 060801-060802, 061102, 0612, 0614, 0621, 0626N, 0628, 0631
32	210 bp	515 bp	060401-060403, 0607, 0617, 0621, 0625, 0634
33	170 bp	430 bp	060401-0607, 0609, 0618, 0625, 0627, 0632, 0634
34	130 bp	430 bp	060401-060501, 0606, 060801-0609, 0612, 0617, 0618, 0621, 0627, 0634
35	260 bp	515 bp	060501, 060502 [?] , 0606 [?] , 0620, 0631
36	210 bp	430 bp	060501, 060502 [?] , 0606 [?] , 0609, 0612, 0615, 0622
37	180 bp	430 bp	0606
38^{4,14}	95, 185 bp	430 bp	0610, 0614
39	190 bp	430 bp	0613, 0616, 0622
40^{4,15}	110, 150 bp	430 bp	0321, 0623
41⁵	175 bp	430 bp	0617, 0624, 0630
42	135 bp	430 bp	0610, 0625
43¹⁶	215, 265 bp	515 bp	0626N, 0633
44	160 bp	430 bp	060201-060202, 0610, 0613-0616, 0620, 0623, 0624, 0629, 0633
45	130 bp	515 bp	0607, 0615
46¹⁷	160, 210 bp	515 bp	060301-060302, 060801-060802, 0614, 0621, 0627, 0628, 0630-0632
47³	155 bp	430 bp	0401, 0402, 0619

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¹ 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 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 length 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.

² 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 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, 6, 7, 8, 9, 16, 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.

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

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

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

⁵ Primer mixes 4, 18 and 41 may give rise to primer oligomer formation.

⁶ 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.

⁷ Primer mix 5: Specific PCR fragment of 145 bp in the DQB1*0204 allele. Specific PCR fragment of 185 bp in the DQB1*0505 and 060202^{weakly} alleles.

⁸ 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, 0312, 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.

⁹ 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.

¹⁰ 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.

¹¹ 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.

¹² 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.

¹³ 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.

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

¹⁵ Primer mix 40: Specific PCR fragment of 110 bp in the DQB1*0623 allele. Specific PCR fragment of 150 bp in the DQB1*0321 allele.

¹⁶ 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.

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¹⁷Primer 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.

INTERPRETATION TABLE																									
DQB1 high resolution SSP typing																									
Amplification patterns of the DQB1*0201 to DQB1*0634 alleles																									
	Well5																								
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	
Length of spec.	120	85	145	140	145	165	220	135	190	135	95	125	110	135	135	260	165	190	135	130	205	205	135	120	
PCR product				180	185				220		130		140	260			300	220							
Length of int.	515	430	515	430	430	515	515	515	515	430	430	430	430	430	430	515	430	430	515	430	515	430	430	430	
pos. control ¹																									
5'-primer(s) ²	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 ³	5'-T gA ³	5'-T gA ³	5'-A Ag ³	5'-C gC ³	5'-g gA ³	5'-T TA ³	5'-T CT ³	5'-T CT ³	5'-T TA ³	5'-g gg ³	5'-g CA ³	5'-g gT ³	5'-gC C ³	5'-g gC ³	5'-gC ³	5'-T TA ³	5'-T TC ³	5'-g CC ³	5'-T gA ³	5'-g CT ³	5'-g Cg ³	5'-g gg ³	5'-gA C ³	
				102	136				135		38		55	135			102	38							
				5'-TC T ³	5'-AC g ³				5'-TgA ³		5'-ACA ³		5'-g cA ³	5'-T gA ³			5'-TC T ³	5'-C gT ³							
													63												
													5'-Agg ³												
3'-primer(s) ³	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 ³	5'-Cg T ³	5'-gAC ³	5'-CC g ³	5'-AC g ³	5'-g CT ³	5'-g CT ³	5'-C gg ³	5'-g CT ³	5'-C gg ³	5'-g Cg ³	5'-CTA ³	5'-g CT ³	5'-g CT ³	5'-CC C ³	5'-g CT ³	5'-g gT ³	5'-g CT ³	5'-g CT ³	5'-g CT ³	5'-g CT ³	5'-AC g ³	5'-AC g ³	5'-C AA ³	5'-gCT ³
				135	170				185			70		167			189	87							
				5'-g gC ³	5'-gAC ³				5'-Cg A ³			5'-CCC ³		5'-CAT ³			5'-C CA ³	5'-g gA ³							
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	
DQB1 allele ⁴																									
*020101-020102	1		3					8	9																
*0202	1			4				8	9																
*0203		2		4					9																
*0204	1		3		5			8	9																
*0205	1		3	4				8	9																
*030101-030102, 030104			3			6	7									16			19	20					
*030103			3			6	7									16			19						
*030201-030204			3					8	9										19						
*030302-030303			3						9										19	20					
*0304			3			6	7			10						16			19						
*030501-030504			3						9		11								19						
*0306			3						9			12							19	20					
Well No.	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	



INTERPRETATION TABLE																								
DQB1 high resolution SSP typing																								
Amplification patterns of the DQB1*0201 to DQB1*0634 alleles																								
Well5																								
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	Length of spec.	
													185		150			265				210	PCR product	
515	430	430	430	430	430	515	515	430	430	515	430	430	430	430	430	430	430	515	430	515	515	430	Length of int.	
																							pos. control¹	
30	30	30	9	27	9	27	30	27	27	14	30	27	9	9	26	27	26	11	9	57	30	9	5'-primer(s)²	
5'-gA C ^{3'}	5'-gA T ^{3'}	5'-gA T ^{3'}	5'-g TT ^{3'}	5'-gTA ^{3'}	5'-g TA ^{3'}	5'-gTA ^{3'}	5'-gA C ^{3'}	5'-gTA ^{3'}	5'-gTA ^{3'}	5'-gC C ^{3'}	5'-gA T ^{3'}	5'-gTA ^{3'}	5'-g TT ^{3'}	5'-g TT ^{3'}	5'-g gg ^{3'}	5'-gTA ^{3'}	5'-T CT ^{3'}	5'-TTA ^{3'}	5'-g TT ^{3'}	5'-T gA ^{3'}	5'-gA C ^{3'}	5'-g TT ^{3'}		
		30													133			29						
		5'-gA T ^{3'}													5'-TT T ^{3'}			5'-CC T ^{3'}						
47	57	86	57	57	48	70	86	70	57	86	86	74	27	57	48	71	57	86	48	86	70	47	3'-primer(s)³	
5'-Cg A ^{3'}	5'-gCT ^{3'}	5'-A Cg ^{3'}	5'-CAT ^{3'}	5'-CAT ^{3'}	5'-gC g ^{3'}	5'-CCC ^{3'}	5'-A CC ^{3'}	5'-CCT ^{3'}	5'-CAA ^{3'}	5'-A CC ^{3'}	5'-A CC ^{3'}	5'-C Cg ^{3'}	5'-gt T ^{3'}	5'-CAA ^{3'}	5'-gC g ^{3'}	5'-ggT ^{3'}	5'-gC T ^{3'}	5'-A Cg ^{3'}	5'-gC g ^{3'}	5'-A CC ^{3'}	5'-CCC ^{3'}	5'-Cg A ^{3'}		
										87			57	60	170						86			
										5'-g gA ^{3'}			5'-gC T ^{3'}	5'-gTT ^{3'}	5'-gAC ^{3'}						5'-A Cg ^{3'}			
25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	Well No.	
																								DQB1 allele⁴
																								*020101-020102
																								*0202
																								*0203
																								*0204
																								*0205
																								*030101-030102, 030104
																								*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	Well No.	



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Length of spec.	120	85	145	140	145	165	220	135	190	135	95	125	110	135	135	260	165	190	135	130	205	205	135	120
PCR product				180	185				220		130		140	260			300	220						
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
*0307			3					8	9				13						19					
*0308			3					8	9			12							19					
*0309			3			6	7							14		16			19	20				
*0310			3				7								15	16			19	20				
*0311			3					8	9					14					19					
*0312			3						9						15	16			19	20				
*0313			3			6	7									16	17		19	20				
*0314			3				7			10					15	16			19					
*0315			3						9				13						19	20				
*0316			3			6	7						13			16								
*0317			3								11								19	20				
*0318			3					8	9									18	19					
*0319			3			6	7		9							16			19	20				
*0320			3						9		11								19	20				
*0321			3			6	7									16			19	20				
*0401			3						9												21			
*0402			3						9													22		
*050101-050102			3																				23	
*050201			3																					24
*050202			3																					24
*050301-050302			3																					
*0504			3																					
*0505			3		5																			24
*060101-060103			3												15									
*060201			3																					
*060202			3		w							12												
*060301			3																					
*060302			3									12												
*060401, 060403			3																					
*060402			3																					
*060501			3																					
*060502			3																					
*0606			3																					
*0607			3																					
*060801			3																					
*060802			3																					
*0609			3																					
*0610			3																					
*061101			3																					
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



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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 product
25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	Well No.
													185		150			265			210		*0307
																							*0308
																							*0309
																							*0310
																							*0311
																							*0312
																							*0313
																							*0314
																							*0315
																							*0316
																							*0317
																							*0318
																							*0319
																							*0320
															40								*0321
																						47	*0401
																						47	*0402
																							*050101-050102
																							*050201
25																							*050202
25																							*050301-050302
26																							*0504
																							*0505
		27																					*060101-060103
		27	28																		44		*060201
		27	28																		44		*060202
				29	30	31																46	*060301
				29	30	31																46	*060302
							32	33	34														*060401, 060403
					30		32	33	34														*060402
								33	34	35	36												*060501
		?						33		?	?												*060502
		?						33	34	?	?	37											*0606
				29	30		32	33														45	*0607
					30	31			34													46	*060801
						31			34													46	*060802
								33	34		36												*0609
		27											38				42		44				*0610
		27			30																		*061101
25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	Well No.



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Length of spec.	120	85	145	140	145	165	220	135	190	135	95	125	110	135	135	260	165	190	135	130	205	205	135	120
PCR product				180	185				220		130		140	260			300	220						
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
*061102			3																					
*0612			3																					
*0613			3																					
*0614			3																					
*0615			3																					
*0616			3																					
*0617			3																					
*0618			3																					
*0619			3																					
*0620			3																					
*0621			3																					
*0622			3																					
*0623			3																					
*0624			3																					
*0625			3																					
*0626N			3																					
*0627			3																					
*0628			3															18						
*0629			3					8																
*0630			3																					
*0631			3																					
*0632			3																					
*0633			3																					
*0634			3															17						
DQB1 allele ⁴																								
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

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, 6, 7, 8, 9, 16, 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.

²The codon, in the 2nd or 3rd exon, matching the specificity-determining 3'-end of the primer is given. 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. Empty spaces indicate codon boundaries.

³The codon, in the 2nd or 3rd exon, matching the specificity-determining 3'-end of the primer is given in the anti-sense direction. 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. Empty spaces indicate codon boundaries.

⁴The sequence of the DQB1*03031 allele has been shown to be identical to DQB1*030302.



Lot No.: **43E**

Lot-specific information

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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.
													185		150			265			210		PCR product
25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	Well No.
		27		29	30	31																	*061102
						31			34		36												*0612
		27												39					44				*0613
			28	29		31							38					44		46			*0614
			28								36							44		45			*0615
		27	28											39				44					*0616
							32		34							41							*0617
		27						33	34														*0618
		27	28																			47	*0619
		27	28							35								44					*0620
					31	32			34												46		*0621
											36			39									*0622
			28											40				44					*0623
		27	28													41		44					*0624
							32	33								42							*0625
				29	30	31												43					*0626N
								33	34												46		*0627
				29	30	31															46		*0628
		27																44					*0629
				29	30											41					46		*0630
				29	30	31				35											46		*0631
				29	30			33													46		*0632
		27	28															43	44				*0633
							32	33	34														*0634
																							DQB1 allele ⁴
25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	Well No.

⁵Primer 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*0204 allele. Specific PCR fragment of 185 bp in the DQB1*0505 and 060202^{weakly} alleles.
 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, 0312, 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.



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Lot-specific information

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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 40: Specific PCR fragment of 110 bp in the DQB1*0623 allele. Specific PCR fragment of 150 bp in the DQB1*0321 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.

'w', might be weakly amplified.

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

Lot No.: **43E**

Lot-specific information

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CELL LINE VALIDATION SHEET																			
DQB1 high resolution primer set																			
			Production No.	Well															
				1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
				200618901	200618902	200618903	200738304	200738305	200844706	200844707	200738308	200738309	200739310	200738311	200618912	200618913	200618914	200618915	200618916
	IHWC 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		-	-	+	-	-	-	-	-	-	-	-	-	-	-	-	-



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Lot-specific information

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CELL LINE VALIDATION SHEET																			
DQB1 high resolution primer set																			
			Production No.	Well															
				17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32
	IHWC cell line	DQB1		200738317	200844718	200844719	200844720	200618921	200618922	200618923	200618924	200618925	200618926	200618927	200618928	200618929	200618930	200618931	200618932
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		-	-	-	-	-	-	+	-	-	-	-	-	-	-	-	-



Lot No.: **43E**

Lot-specific information

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CELL LINE VALIDATION SHEET																			
DQB1 high resolution primer set																			
				Production No.	Well														
					33	34	35	36	37	38	39	40	41	42	43	44	45	46	47
	IHWC cell line		DQB1		200618933	200618934	200618935	200618936	200618937	200618938	200618939	200844740	200618941	200618942	200844743	200618944	200618945	200618946	200844747
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		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



Lot No.: **43E**

Lot-specific information

www.olerup.com

CERTIFICATE OF ANALYSIS

Olerup SSP[®] DQB1 high resolution for frequent alleles SSP

Product number: 101.221-12 – including *Taq* polymerase
101.221-12u – without *Taq* polymerase

Lot number: 43E

Expiry date: 2010-April-01

Number of tests: 12 tests

Number of wells per test: 47 + 1

Well specifications:

Well No.	Production No.	Well No.	Production No.	Well No.	Production No.
1	2006-189-01	17	2007-383-17	33	2006-189-33
2	2006-189-02	18	2008-447-18	34	2006-189-34
3	2006-189-03	19	2008-447-19	35	2006-189-35
4	2007-383-04	20	2008-447-20	36	2006-189-36
5	2007-383-05	21	2006-189-21	37	2006-189-37
6	2008-447-06	22	2006-189-22	38	2006-189-38
7	2008-447-07	23	2006-189-23	39	2006-189-39
8	2007-383-08	24	2006-189-24	40	2008-447-40
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	2008-447-44
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	2008-447-47
16	2006-189-16	32	2006-189-32		

The specificity of each primer solution of the kit has been tested against 48 well characterized IHWC 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. 2008-417-01**, can detect contamination with PCR products diluted 10^{-7} .

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

Date of approval: 2008-April-07

Approved by:

Quality Control, Supervisor

Lot No.: **43E**

Lot-specific information

www.olerup.com

Declaration of Conformity

Product name: *Olerup* SSP[®] DQB1
Product number: 101.221-12, 101.221-12u
Lot number: 43E

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
2008-April-07

Olle Olerup
Managing Director

DQB1 high resolution for frequent alleles
101.221-12 – including *Taq* pol. Product Insert
101.221-12u – without *Taq* pol.

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Lot No.: **43E**

Lot-specific information

www.olerup.com

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