DQB1*02 Product Insert Page 1 of 12

101.213.24 – including *Taq* **pol.,** IFU-01 Rev. No. 03 **101.213.24u – without** *Taq* **pol.,** IFU-02 Rev. No. 03

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Lot No.: 63N Lot-specific information

Olerup SSP® DQB1*02

Product number: 101.213-24 – including *Taq* polymerase

101.213-24u – without *Taq* **polymerase**

Lot number: 63N

Expiry date: 2014-October-01

Number of tests: 24 Number of wells per test: 7

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. 63N.

CHANGES COMPARED TO THE PREVIOUS OLERUP SSP® DQB1*02 LOT

The DQB1*02 specificity and interpretation tables have been updated with the DQB1 alleles described since the previous *Olerup* SSP® DQB1*02 lot **(Lot No. 77K)** was made.

One well has been added to the DQB1*02 kit, well **7**.

The Lot-specific information for DQB1*02 including and without *Taq* polymerase is now described in one common Product Insert.

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

Well	5'-primer	3'-primer	rationale
7	New	New	New primer pair for the DQB1*02:06 allele.

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Lot No.: 63N Lot-specific information

PRODUCT DESCRIPTION

DQB1*02 SSP subtyping

CONTENT

The primer set contains 5'- and 3'-primers for identifying the DQB1*02:01 to DQB1*02:06 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 7 PCR reactions in an 8 well PCR plate. Well 8 is empty.

1 2 3	4 5	6	7	empty
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The 8 well PCR plate is marked with 'DQ2' in silver/gray ink.

Well No. 1 is marked with the Lot No. '63N'.

A faint row of numbers is seen between wells 1 and 2 or wells 7 and 8 of the PCR trays. These stem from the manufacture of the trays, and should be disregarded.

The PCR plates are heat-sealed with a PCR-compatible foil.

Please note: When removing each 8 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

The interpretation of DQB1*02 SSP subtypings will be influenced by the DQB1*03, the DQB1*04, the DQB1*05 and DQB1*06 alleles, when present on the other haplotype. The interpretation of DQB1*02 subtypings is not influenced by the DQB2 and DQB3 genes.

UNIQUELY IDENTIFIED ALLELES

All the DQB1*02 alleles, i.e. **DQB1*02:01 to DQB1*02:06**, recognized by the HLA Nomenclature Committee in April 2012¹ will give rise to unique amplification patterns by the primers in the DQB1*02 subtyping kit.

The DQB1*02 kit cannot distinguish the silent mutation in the DQB1*02:01:01-02:01:04 alleles.

¹HLA-DQB1 alleles listed on the IMGT/HLA web page 2012-April-12, release 3.8.0, www.ebi.ac.uk/imgt/hla.

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Lot No.: 63N Lot-specific information

RESOLUTION IN HOMO- AND HETEROZYGOTES

A total of 9 alleles generate 6 amplification patterns that can be combined in 21 homozygous and heterozygous combinations. 6 of these genotypes do not give rise to unique amplification patterns.

```
+--+--+ *02:02, *02:06 = *02:06, *02:06
+-+--+- *02:01:01, *02:05 = *02:05, *02:05
+-+-+-- *02:01:01, *02:04 = *02:04, *02:04
```

^{*02:01:01 = *02:01:01-02:01:04}

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Lot No.: 63N Lot-specific information

SPECIFICITY TABLE

DQB1*02 SSP subtyping

Specificities and sizes of the PCR products of the 7 primer mixes used for DQB1*02 SSP subtyping

Primer Mix	Size of spec. PCR product ¹	Size of control band ²	Amplified DQB1*02 alleles ³	Other amplified DQB1 alleles ⁴
1 ⁵	120 bp	515 bp	*02:01:01-02:02, 02:04-02:06	
2 ⁵	85 bp	430 bp	*02:03	
3 ⁶	145 bp	515 bp	*02:01:01- 02:01:04, 02:04-02:05	*03:01:01:01-03:23, 03:25-03:40, 04:01:01-04:08, 05:01:01:01-05:13, 06:01:01-06:37, 06:39-06:49
4	140 bp	430 bp	*02:02-02:03, 02:06	
5	145 bp	430 bp	*02:04	
6 ⁷	180 bp	430 bp	*02:05	
7	245 bp	430 bp	*02:06	*03:24

¹Alleles are assigned by the presence of specific PCR product(s). However, the sizes of the specific PCR products may be helpful in the interpretation of DQB1*02 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 base pairs or more. Size differences shorter than 20 base pairs are not given. For high resolution SSP kits the respective lengths of the specific PCR product(s) of the alleles amplified by these primer mixes are given.

Nonspecific amplifications, i.e. a ladder or a smear of bands, may sometimes be seen. GC-rich primers have a higher tendency of giving rise to nonspecific amplifications than other primers.

PCR fragments longer than the control bands may sometimes be observed. Such bands should be disregarded and do not influence the interpretation of the SSP typings.

PCR fragments migrating faster than the control bands, but slower than a 400 bp fragment may be seen in some gel read-outs. Such bands can be disregarded and do not influence the interpretation of the SSP typings.

Some primers may give rise to primer oligomer artifacts. Sometimes this phenomenon is an inherit feature of the primer pair(s) of a primer mix. More often it is due to other factors such as too low amount of DNA in the PCR reactions, taking too long time in setting up the PCR reactions, working at elevated room temperature or using thermal cyclers that are not pre-heated.

²The internal positive control primer pairs amplify segments of the human growth hormone gene. The two different control primer pairs give rise to either an internal positive control band of 430 base pairs, for most wells, or a band of 515 base pairs, for some wells.

Well number 1 contains the primer pair giving rise to the longer, 515 bp, internal positive control band in order to help in the correct orientation of the DQB1*02 subtyping.

In addition, well number 3 contains 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.

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Lot No.: 63N Lot-specific information

³For several DQB1 alleles only partial 3rd exon nucleotide sequences are available. In these instances it is not known whether some of the primers of the SSP sets are completely matched with the target sequences or not. We assume that unknown sequences of the 3rd exon of DQB1 alleles are conserved within allelic groups.

⁴Due to the sharing of sequence motifs, non-DQB1*02 alleles will be amplified by primer mixes 3 and 7.

⁵Short specific PCR fragments are less intense and not as sharp as longer specific bands.

⁶Primer mix 3 may have a tendency of giving rise to unspecific amplifications.

⁷Primer mix 6 may give rise to primer oligomer formation.

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Lot No.: 63N Lot-specific information

IN	TERP	•	ION T					
	DQB1*(
					عماماله			
Amplification patterns of the 02:01 to 02:06 alleles Well								
	1							
Length of spec.	120	85	145	140	145	180	245	
PCR product								
Length of int.	515	430	515	430	430	430	430	
pos. control ¹								
5'-primer ²	30(185)	57(266)	135(500)	101(400)	135(502)	30(185)	101(400)	
	^{5'} -AAg ^{3'}	^{5'} -TgA ^{3'}	^{5'} -TgA ^{3'}	^{5'} -TCT ^{3'}	^{5'} -ACg ^{3'}	^{5'} -AAg ^{3'}	5' -TCT 3'	
3'-primer ³	57(266)	71(309)	169(604)	135(500)	169(604)	77(326)	169(604)	
	^{5'} -Cgg ^{3'}	^{5'} -CgT ^{3'}	^{5'} -gAC ^{3'}	^{5'} -ggC ^{3'}	^{5'} -gAC ^{3'}	^{5'} -CCg ^{3'}	^{5'} -gAT ^{3'}	
Well No.	1	2	3	4	5	6	7	
DQB1 allele								
*02:01:01-02:01:04	1		3					
*02:02	1			4				
*02:03		2		4				
*02:04	1		3		5			
*02:05	1		3			6		
*02:06	1			4			7	
*03:01:01:01-03:23, 03:25-								
03:40, 04:01:01-04:08,								
05:01:01:01-05:13,			3					
06:01:01-06:37, 06:39-								
06:49								
*03:24							7	
DQB1 allele								
Well No.	1	2	3	4	5	6	7	

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.

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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*02 subtyping.

In addition, well number 3 contains the primer pair giving rise to the longer, 515 bp, internal positive control band in order to allow kit identification.

²The codon, and in parenthesis the nucleotide, in the 2nd or 3rd exon, matching the specificity-determining 3'-end of the primer is given. Codon and nucleotide numbering as on the www.ebi.ac.uk/imgt/hla web site. The sequence of the 3 terminal nucleotides of the primer is given.

site. The sequence of the 3 terminal nucleotides of the primer is given.

3The codon, and in parenthesis the nucleotide, in the 2nd or 3rd exon, matching the specificity-determining 3'-end of the primer is given in the anti-sense direction. Codon and nucleotide numbering as on the www.ebi.ac.uk/imgt/hla web site. The sequence of the 3 terminal nucleotides of the primer is given.

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Lot No.: 63N Lot-specific information

LOI N	o.: 63			Lot-spe						<u>n</u>	
CELL LINE VALIDATION SHEET DQB1*02 SSP subtyping kit											
		DQB1^02	2 SSP 9	subtyp	ıng	KI					
							_	Иe	<u> </u>		
					1	2	3	4	5	6	7
					5	02	03	4	05	90	20
				i.	17	17	1	17	17	17	01(
				nci	96	96	96	96	96	96	20
				Production No.	200961701	200961702	200961703	200961704	200961705	200961706	201200107
					2	0	7	0	0	7	7
		C cell line		QB1							
1	9001		*05:01	+00.00	-	-	+	-	-	-	-
2		LK707	*06:01	*02:02	+	-	+	+	-	-	-
3		E4181324	*06:01		-	-	+	-	-	-	-
4		GU373	*02:01		+	-	+	-	-	-	-
5		KAS011	*05:02	*00.04	-	-	+	-	-	-	-
6 7	9353		*03:02	*06:01	Ι.	-	+	-	-	-	-
_	9020 9025		*02:01 *03:01	-	+	-	+	-	-	-	-
8	9025		*03:01		-	-	+	-	-	-	-
10	9026		*04:01		<u> </u>		+	_	-	-	-
11		PITOUT	*02:02		+	-	-	+	-	-	-
12	9051		*03:03		-	-	+	-	-	-	-
13		JESTHOM	*05:01		-	-	+	-	-	-	-
14		OLGA	*04:02		-	-	+	-	-	-	-
15	9075		*03:03		-	-	+	-	-	-	-
16		SWEIG007	*03:01		-	-	+	-	-	-	-
17		CTM3953540	*02:01	*06:03	+	-	+	-	-	-	-
18		32367	*06:02	*02:02	+	-	+	+	-	-	-
19		BM16	*03:01	02.02	-	-	+	-	-	-	-
20		SLE005	*06:04		-	-	+	-	-	-	-
21		AMALA	*03:01		-	-	+	-	-	-	-
22	9056	KOSE	*05:03	*06:04	-	-	+	-	-	-	-
23	9124	IHL	*05:03	*06:01	-	-	+	-	-	-	-
24	9035	JBUSH	*03:01		-	-	+	-	-	-	-
25	9049	IBW9	*02:02		+	-	-	+	-	-	-
26	9285	WT49	*02:01		+	-	+	-	-	-	-
27	9191	CH1007	*04:01	*05:01	-	-	+	-	-	-	-
28	9320	BEL5GB	*02:02	*03:01	+	-	+	+	-	-	-
29	9050		*02:02		+	-	-	+	-	-	-
30	9021		*04:02		-	-	+	-	-	-	-
31		DUCAF	*02:01		+	-	+	-	-	-	-
32	9297		*03:01		-	-	+	-	-	-	-
33		MT14B	*03:02		-	-	+	-	-	-	-
34	9104		*03:01		-	-	+	-	-	-	-
35		SSTO	*03:05		-	-	+	-	-	-	-
36		KT17	*03:02		-	-	+	-	-	-	-
37		HHKB	*06:03		-	-	+	-	-	-	-
38	9099		*03:01	*00.01	-	-	+	-	-	-	-
39	9315		*02:01	*03:01	+	-	+	-	-	-	-
40		WHONP199	*02:02	*03:03	+	-	+	+	-	-	-
41		H0301	*06:09		-	-	+	-	-	-	-
42		TAB089	*06:01		-	-	+	-	-	-	-
43		T7526	*03:03		-	-	+	-	-	-	-
44	9057		*05:03		-	-	+	-	-	-	-
45		SHJO	*02:02		+	-	-	+	-	-	-
46		SCHU	*06:02		-	-	+	-	-	-	-
47		TUBO	*03:01		-	-	+	-	-	-	-
48	9303	TER-ND	*05:01		-	-	+	-	-	-	-

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Lot No.: 63N Lot-specific information

CERTIFICATE OF ANALYSIS

Olerup SSP® DQB1*02 SSP

Product number: 101.213-24 – including *Taq* polymerase

101.213-24u - without *Tag* polymerase

Lot number: 63N

Expiry date: 2014-October-01

Number of tests: 24 Number of wells per test: 7

Well specifications:

Well No.	Production No.
1	2009-617-01
2	2009-617-02
3	2009-617-03
4	2009-617-04
5	2009-617-05
6	2009-617-06
7	2012-001-07

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 5 to 7 were available. The specificities of the primers in primer solution 6 were tested by separately adding one 5'-primer, respectively one 3'-primer. In primer solution 5 it was only possible to test the 3'-primer, the 5'-primer was not possible to test. In primer solution 7 it was only possible to test the 5'-primer, the 3'-primer was not possible to test.

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

Date of approval: 2012-May-28

Approved by:

Production Quality Control

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Lot No.: 63N Lot-specific information

Declaration of Conformity

Product name: Olerup SSP® DQB1*02

Product number: 101.213-24/24u

Lot number: 63N

Intended use: DQB1*02 high resolution histocompatibility testing

Manufacturer: Olerup SSP AB

Franzengatan 5

SE-112 51 Stockholm, Sweden

Phone: +46-8-717 88 27 **Fax:** +46-8-717 88 18

We, *Olerup* SSP AB, hereby declare that this product, to which this Declaration of Conformity relates is in conformity with the following Standard(s) and other normative document(s) ISO 9001:2008 and ISO 13485:2003, following the provisions of the 98/79/EC Directive on *in vitro* diagnostic medical devices, Annex III, as transposed into the national laws of the Member States of the European Union.

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

Stockholm, Sweden 2012-May-28

Ann-Cathrin Jareman Head of QA and Regulatory Affairs

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