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Lot No.: 83N Lot-specific information www.olerup-ssp.com

Olerup SSP® DQB1\*05

Product number: 101.211-24 – including *Taq* polymerase

101.211-24u - without *Taq* polymerase

Lot number: 83N

Expiry date: 2014-December-01

Number of tests: 24 Number of wells per test: 12

Storage - pre-aliquoted primers: dark at -20°C

PCR Master Mix: -20°C
 Adhesive PCR seals
 Product Insert
 RT

# This Product Description is only valid for Lot No. 83N

## CHANGES COMPARED TO THE PREVIOUS OLERUP SSP® DQB1\*05 LOT

The DQB1\*05 specificity and interpretation tables have been updated for the HLA-DQB1 alleles described since the previous *Olerup* SSP<sup>®</sup> DQB1\*05 lot was made **(Lot No. 04M)**.

Four wells have been added to the DQB1\*05 kit, wells **9 to 12**.

The Lot-specific information for DQB1\*05 including and without *Taq* polymerase is now described in one common Product Insert.

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

Well	5'-primer	3'-primer	rationale
6	Modified, moved	Moved	Primer pair moved to well 9, modified 5'-primers for improved specificity and yield of HLA-specific PCR product.
9	New	New	Primer pair from well 6.
10	New	New	New primer pair for the DQB1*05:12 allele.
11	New	New	New primer pair for the DQB1*05:13 allele.
12	New	New	New primer pair for the DQB1*05:14 allele.

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### PRODUCT DESCRIPTION

## DQB1\*05 SSP subtyping

#### **CONTENT**

The primer set contains 5'- and 3'-primers for identifying the DQB1\*05:01 to DQB1\*05:14 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 12 PCR reactions in a 16 well PCR plate. Wells 13 to 16 are empty.

1	2	3	4	5	6	7	8
9	10	11	12	empty	empty	empty	empty

The 16 well cut PCR plate is marked with 'DQ5' in silver gray ink.

Well No. 1 is marked with the Lot No. '83N'.

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

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

**Please note:** When removing each 16 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\*05 alleles will be amplified by the DQB1\*05 subtyping kit. Thus, the interpretation of DQB1\*05 SSP subtypings is only influenced by this allele and not by other groups of DQB1 alleles or the DQB2 and DQB3 genes.

#### **UNIQUELY IDENTIFIED ALLELES**

All the DQB1\*05 alleles, i.e. **DQB1\*05:01 to DQB1\*05:14**, recognized by the HLA Nomenclature Committee in April 2012<sup>1</sup> will give rise to unique amplification patterns by the primers in the DQB1\*05 subtyping kit.

The DQB1\*05 subtyping kit cannot distinguish the silent mutations in the DQB1\*05:01:01-05:01:03, the DQB1\*05:02:01 and 05:02:03 alleles or the DQB1\*05:03:01:01-05:03:05 alleles.

<sup>1</sup>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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#### **RESOLUTION IN HOMO- AND HETEROZYGOTES**

A total of 24 alleles generate 15 amplification patterns that can be combined in 120 homozygous and heterozygous combinations. 55 of these genotypes do not give rise to unique amplification patterns. The different lengths of the specific PCR products were not considered in these calculations.

```
+--+---- *05:03:01:01, *05:08 = *05:08, *05:08

+--+--- *05:03:01:01, *05:09 = *05:09, *05:09

+--+--- *05:03:01:01, *05:06 = *05:06, *05:06

+--+--- *05:03:01:01, *05:04 = *05:03:01:01, *05:10 = *05:04, *05:10 = *05:10, *05:10
+-+---- *05:02:01, *05:14 = *05:14, *05:14
+-+--+-- *05:02:01, *05:05 = *05:05, *05:05
+-++--- *05:02:01, *05:02:02 = *05:02:01, *05:03:01:01 = *05:02:02, *05:02:02 =
                *05:02:02, *05:03:01:01
++---+- *05:01:01:01, *05:07 = *05:07, *05:07
++---+- *05:01:01:01, *05:11 = *05:11, *05:11
+--++--- *05:04, *05:13 = *05:10, *05:13
+--++--- +--- *05:04, *05:08 = *05:08, *05:10
+-++---- *05:02:02, *05:14 = *05:03:01:01, *05:14
+-++---- *05:02:01, *05:13 = *05:02:02, *05:13
+-++---- *05:02:01, *05:08 = *05:02:02, *05:08
+-++--- *05:02:01, *05:09 = *05:02:02, *05:09
+-++-+-- *05:02:02, *05:05 = *05:03:01:01, *05:05
+-+++-- *05:02:01, *05:10 = *05:02:02, *05:04 = *05:02:02, *05:10
++-+---- *05:01:01:01, *05:06 = *05:03:01:01, *05:07 = *05:06, *05:07
+++--+-- *05:01:01:01, *05:05 = *05:02:01, *05:11 = *05:05, *05:11
*05:01:01:01 = *05:01:01:01-05:01:03
```

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

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### SPECIFICITY TABLE

## DQB1\*05 SSP subtyping

Specificities and sizes of the PCR products of the 12 primer mixes used for DQB1\*05 SSP subtyping

Primer Mix	Size of spec. PCR product <sup>1</sup>	Size of control band <sup>2</sup>	Amplified DQB1*05 alleles <sup>3</sup>
1	225 bp	515 bp	*05:01:01:01-05:14
2	135 bp	430 bp	*05:01:01:01-05:01:03, 05:07, 05:11-05:12
3 <sup>4</sup>	120 bp	430 bp	*05:02:01-05:02:03, 05:05, 05:14
4 <sup>4</sup>	95 bp	515 bp	*05:02:02, 05:03:01:01-05:03:05, 05:06, 05:08-05:10, 05:13
5 <sup>4,6</sup>	120 bp, 185 bp	430 bp	*05:04, 05:10
6 <sup>5</sup>	185 bp	430 bp	*05:05, 05:11
<b>7</b> <sup>5</sup>	180 bp	430 bp	*05:06-05:07
8	190 bp	430 bp	*05:09
9	135 bp	430 bp	*05:08
10	195 bp	430 bp	*05:12
11 <sup>4</sup>	95 bp	430 bp	*05:13
12	150 bp	430 bp	*05:14

<sup>&</sup>lt;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\*05 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.

<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 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\*05 subtyping.

In addition, well number 4 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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<sup>3</sup>For several DQB alleles only second exon nucleotide sequences are available. In these instances it is not known whether some of the primers of the SSP sets are completely matched with the target sequences or not. We assume that unknown sequences of codons 87 to 92 are conserved within allelic groups.

<sup>4</sup>Specific PCR fragments shorter than 125 base pairs have a lower intensity than longer PCR bands.

<sup>5</sup>Primer mixes 6 and 7 may give rise to nonspecific amplifications.

<sup>6</sup>Primer mix 5: Specific PCR fragment of 120 bp in the DQB1\*05:04 allele. Specific PCR fragment of 185 bp in the DQB1\*05:10 allele.

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Lot No.: OSIN			t-specific				olerup-ssp	J.COM			
	<u>I</u> I				ΓABLE						
_			*05 SS								
Amplific	ation pa	tterns o	f the DQ		1 to DQB	1*05:14	alleles				
	Well <sup>4</sup>										
	1	2	3	4	5	6	7	8			
Length of spec.	225	135	120	95	120	185	180	190			
PCR product(s)					185						
Length of int.	515	430	430	515	430	430	430	430			
pos. control <sup>1</sup>											
5'-primer <sup>2</sup>	26(173)	26(173)	29(184)	29(184)	29(184)	38(210)	39(212)	36(205)			
	<sup>5'</sup> -ggg <sup>3'</sup>	<sup>5'</sup> -ggg <sup>3'</sup>	<sup>5'</sup> -gAC <sup>3'</sup>	<sup>5'</sup> -gAC <sup>3'</sup>	<sup>5'</sup> -gAT <sup>3'</sup>	<sup>5'</sup> -gCg <sup>3'</sup>	<sup>5'</sup> -gCA <sup>3'</sup>	<sup>5'</sup> -Agg <sup>3'</sup>			
					135(500)	38(210)	40(216)				
					<sup>5'</sup> -TgA <sup>3'</sup>	<sup>5'</sup> -gCA <sup>3'</sup>	<sup>5'</sup> -TTg <sup>3'</sup>				
3'-primer <sup>3</sup>	87(356)	57(266)	56(265)	47(237)	56(265)	86(353)	87(356)	86(353)			
3 -primer	5' -ggT 3'	5' -CAA 3'	5' -gCT 3'	<sup>5'</sup> -CgA <sup>3'</sup>	5' -gCT 3'	5' -ACg 3'	5' -ggT 3'	5' -ACg 3'			
	991	OAA	go.	OgA	182(642)	Aog	991	Aog			
					5' -ggT 3'						
Well No.	1	2	3	4	5	6	7	8			
DQB1 allele											
*05:01:01:01-	4	_									
05:01:03	1	2									
*05:02:01,	1		3								
05:02:03	'		3								
*05:02:02	1		3	4							
*05:03:01:01-	1			4							
05:03:05	'			7							
*05:04	1				5						
*05:05	1		3			6					
*05:06	1			4			7				
*05:07	1	2					7				
*05:08	1			4							
*05:09	1			4				8			
*05:10	1			4	5						
*05:11	1	2				6					
*05:12	1	2									
*05:13	1			4							
*05:14	1		3								
DQB1 allele					_		_				
Well No.	1	2	3	4	5	6	7	8			

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INTERPRETATION TABLE										
	DQB1*05 SSP subtyping									
Ampl	ification	QB1*05 alleles								
	W									
9	10									
135	195	95	150	Length of spec.						
				PCR product(s)						
430	430	430	430	Length of int.						
				pos. control <sup>1</sup>						
135(501)	26(173)	13(136)	133(494)	5'-primer <sup>2</sup>						
<sup>5'</sup> -gAT <sup>3'</sup>	<sup>5'</sup> -ggg <sup>3'</sup>	<sup>5'</sup> -gCC <sup>3'</sup>	<sup>5'</sup> -TCA <sup>3'</sup>	o primioi						
167(596)	77(328)	32(191)	169(604)	3'-primer <sup>3</sup>						
5' -CAT 3'	5' -CAA 3'	<sup>5'</sup> -TAC <sup>3'</sup>	<sup>5'</sup> -gAC <sup>3'</sup>	, p						
9	10	11	12	Well No.						
				DQB1 allele						
				*05:01:01:01-						
				05:01:03						
				*05:02:01,						
				05:02:03						
				*05:02:02						
				*05:03:01:01-						
				05:03:05						
				*05:04						
				*05:05						
				*05:06						
				*05:07						
9				*05:08						
				*05:09						
				*05:10						
	4.5			*05:11						
	10			*05:12						
		11	4.4	*05:13						
			12	*05:14						
	40	4.4	40	DQB1 allele						
9	10	11	12	Well No.						

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<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 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\*05 subtyping.

In addition, well number 4 contains 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, and in parenthesis the nucleotide, in the 2<sup>nd</sup> and 3<sup>rd</sup> exons, matching the specificity-determining 3'-end of the primer is given. Codon and nucleotide numbering as on the <a href="https://www.ebi.ac.uk/imgt/hla">www.ebi.ac.uk/imgt/hla</a> web site. The sequence of the 3 terminal nucleotides of the primer is given.

given.

The codon, and in parenthesis the nucleotide, in the 2<sup>nd</sup> or 3<sup>rd</sup> exons, matching the specificity-determining 3'-end of the primer is given in the anti-sense direction. Codon and nucleotide numbering as on the <a href="https://www.ebi.ac.uk/imgt/hla">www.ebi.ac.uk/imgt/hla</a> web site. The sequence of the 3 terminal nucleotides of the primer is given.

<sup>4</sup>Primer mix 5: Specific PCR fragment of 120 bp in the DQB1\*05:04 allele. Specific PCR fragment of 185 bp in the DQB1\*05:10 allele.

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CELL LINE VALIDATION SHEET																
DQB1*05 SSP subtyping kit																
			1		T	-71		<u> </u>		w	ell					
					1	2	3	4	5	6	7	8	9	10	11	12
					H					Ť	•				-	
				ion	901	201184602	200969603	200969604	201184605	201202406	307	201184608	201202409	201202410	111	201202412
				ucti	969	846	969	969	846	057	846	846	057	052	057	057
				Production No.	200969601	111	600	600	11	312	201184607	11	312	312	201202411	312
	11 11/4	/C cell line	D		2	ŏ	Ñ	Ñ	Ñ	Ñ	ŏ	Ñ	2	Ñ	Ñ	ñ
1	9001		*05:01	QB1	+	+	-	-	-	-	-	-	_	-	-	-
2		LK707	*06:01	*02:02	Ι.	T	-	-	-	-	-		E	-		-
3		E4181324	*06:01	02.02	-	-	-	-	-	-	-	-	-	-	-	-
4		GU373	*02:01		-	-	-	-	-	-	-	-	-	-	-	-
5		KAS011	*05:02		+	-	+	-	-	-	-	-	-	-	-	-
6	9353		*03:02	*06:01	-	-	-	-	-	-	-	-	-	-	-	-
7	9020	QBL	*02:01		-	-	-	-	-	-	-	-	-	-	-	-
8	9025	DEU	*03:01		_	-	-	-	-	-	-	-	-	-	-	-
9	9026		*03:02		-	-	-	-	-	-	-	-	-	-	-	-
10		LKT3	*04:01		-	-	-	-	-	-	-	-	-	-	-	-
11		PITOUT	*02:02		-	-	-	-	-	-	-	-	-	-	-	-
12	9052		*03:03		ļ :	-	-	•	-	-	-	-	-	•	-	-
13 14		JESTHOM OLGA	*05:01		+	+	-	-	-	-	-	-	-	-	-	-
15	9071		*04:02		Ŀ	-		-		-		Ė	Ε.	-	-	
16		SWEIG007	*03:03 *03:01		Η-	-	-	-	-	-	-		-	-	-	-
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		*05:03	*06:01	+	-	-	+	-	-	-	-	-	-	-	-
24		JBUSH	*03:01		<u> </u>	-	-	-	-	-	-	-	-	-	-	-
25		IBW9	*02:02		-	-	-	-	-	-	-	-	-	-	-	-
26		WT49	*02:01	+05.04	ļ:	-	-	-	-	-	-	-	-	-	-	-
27 28		CH1007 BEL5GB	*04:01 *02:02	*05:01	+	+	-	-	-	-	-	-	-	-	-	-
29		MOU	*02:02	*03:01	Η-	-	-	-	-	-	-		-	-	-	
30	9021		*04:02		-	-	-	-	-	-	-	-	-	-	-	-
31		DUCAF	*02:01		<del> </del> -	-	-	-	-	-	-	-	-	-	-	-
32	9297		*03:01		-	-	-	-	-	-	-	-	-	-	-	-
33		MT14B	*03:02		-	-	-	-	-	-	-	-	-	-	-	-
34	9104	DHIF	*03:01		-	-	-	-	-	-	-	-	-	-	-	-
35		SSTO	*03:05		-	-	-	-	-	-	-	-	-	-	-	-
36		KT17	*03:02		-	-	-	-	-	-	-	-	-	-	-	
37		HHKB	*06:03		-	-	-	-	-	-	-	-	-	-	-	-
38	9099		*03:01	+00.0:	-	-	-	-	-	-	-	-	-	-	-	<u> </u>
39	9315		*02:01	*03:01	-	-	-	-	-	-	-	-	-	-	-	-
40 41		WHONP199 H0301	*02:02 *06:09	*03:03	H	-	-	-	-	-	-	-	H	-	-	-
42		TAB089	*06:09		<del>-</del>	-	-	-	-	-	-	<u> </u>	<del>-</del>	-	-	
43		T7526	*03:03		-	-	-	-	-	-	-	-	-	-	-	
44	9057		*05:03	1	+	-	-	+	-	-	-	-	-	-	-	-
45		SHJO	*02:02		l÷	-	-	-	-	-	-	-	-	-	-	-
46		SCHU	*06:02		-	-	-	-	-	-	-	-	-	-	-	-
47		TUBO	*03:01		-	-	-	-	-	-	-	-	-	-	-	-
48		TER-ND	*05:01		+	+	-		-		-	-			-	

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### CERTIFICATE OF ANALYSIS

Olerup SSP® DQB1\*05 SSP

Product number: 101.211-24 - including *Tag* polymerase

101.211-24u - without *Taq* polymerase

Lot number: 83N

**Expiry date:** 2014-December-01

Number of tests: 24 Number of wells per test: 12

#### Well specifications:

Well No.	Production No.	Well No.	Production No.
1	2009-696-01	9	2012-024-09
2	2011-846-02	10	2012-024-10
3	2009-696-03	11	2012-024-11
4	2009-696-04	12	2012-024-12
5	2011-846-05		
6	2012-024-06	1	
7	2011-846-07		
8	2011-846-08		

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 12 were available. The specificities of the primers in primer solutions 5, 6 and 8 were tested by separately adding one 5'-primer, respectively one 3'-primer. In primer solutions 7 and 12 it was only possible to test the 3'-primer, the 5'-primers were not possible to test. In primer solutions 9 to 11 it was only possible to test the 5'primer, the 3'-primers were not possible to test. In primer solution 5 one 3'primer was not possible to test.

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

Date of approval: 2012-June-29

Approved by:

June 2012

Rev. No.: 00

**Production Quality Control** 

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**Declaration of Conformity** 

**Product name:** Olerup SSP® DQB1\*05

**Product number:** 101.211-24/24u

Lot number: 83N

Intended use: DQB1\*05 resolution histocompatibility testing

Manufacturer: Olerup SSP AB

Franzengatan 5

SE-112 51 Stockholm, Sweden

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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.

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**101.211.24 – including** *Taq* **pol.**, IFU-01 Rev. No. 03 **101.211.24u – without** *Taq* **pol.**, IFU-02 Rev. No. 03

Visit <u>www.olerup-ssp.com</u> for "Instructions for Use" (IFU)

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