Lot No.: 11S

Product Insert

101.201-48/12- including *Taq* pol., IFU-01 101.201-48u/12u- without *Taq* pol., IFU-02 Visit <u>www.olerup-ssp.com</u> for "Instructions for Use" (IFU)

Lot-specific information Olerup SSP[®] DQ low resolution

Product number:	101.201-48/12 - including <i>Taq</i> pol. 101.201-48u/12u - without <i>Taq</i> pol.
Lot number:	11S
Expiry date:	2015-October-01
Number of tests:	48 tests – Product No. 101.201-48/48u
	12 tests – Product No. 101.201-12/48u
Number of wells per test:	8
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. 11S.

CHANGES COMPARED TO THE PREVIOUS OLERUP SSP® DQ LOW RESOLUTION LOT (87N)

The DQ low resolution specificity and interpretation tables have been updated for the HLA-DQB1 alleles described since the previous *Olerup* SSP[®] DQ low resolution lot was made (Lot No 87N).

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

Well	5'-primer	3'-primer	rationale
8	Exchanged	-	Improved yield of HLA-specific PCR
			product.

Change in revision R01 compared to R00:

1. The serological HLA specificities have been corrected in the Interpretation table. Change in revision R02 compared to R01:

1. Primer mix 8 is changed compared to the previous lot, to improve the yield of specific PCR product.

Change in revision R03 compared to R02:

1. Primer mix 6 may have a tendency to giving rise to primer oligomer formation. A footnote has been added in the Specificity Table.

Change in revision R04 compared to R03:

1. Primer mixes 5, 6 and 7 may give a lower yield of HLA-specific PCR products than the other DQ low resolution primer mixes. Footnotes have been added in the Specificity Table.

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Lot No.: 11S

Lot-specific information PRODUCT DESCRIPTION

DQ low resolution SSP typing

CONTENT

The primer set contains 5'- and 3'-primers for grouping the DQB1 alleles into the serological groups DQ2 to DQ9.

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.

STRIP LAYOUT

Each test consists of 8 PCR reactions in an 8 well PCR plate.

1		2	3	4	5	6	7	8
-	~		(D	<u></u>				

The 8 well cut PCR plate is marked with 'DQ low' in silver/gray ink.

Well No. 1 is marked with the Lot No. '11S'.

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 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

Only the DQB1 alleles will be amplified by the DQ low resolution typing kit. Thus, the interpretation of DQ low resolution typings is not influenced the DQB2 and DQB3 genes.

UNIQUELY IDENTIFIED ALLELES

All the DQB1 alleles, i.e. **DQB1*05:01 to 05:18**, **DQB1*06:01 to 06:52**, **DQB1*02:01 to 02:07**, **DQB1*03:01 to 03:44 and DQB1*04*01 to 04:08**, recognized by the HLA Nomenclature Committee in October 2012¹ will be amplified by the primers in the DQ low resolution SSP kit. The DQB1 alleles will be grouped into their corresponding serological specificities, i.e.:

DQ5(1) =	DQB1*05:01-05:05 ²
DQ6(1) =	DQB1*06:01-06:33 ²
DQ2	=	DQB1*02:01-02:05
DQ3	=	DQB1*03:01-03:20 ²
DQ4	=	DQB1*04:01-04:02 ²

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Lot No.: **11S** Lot-specific information The DQ3 alleles may be further subdivided into the DQ3, DQ7, DQ8 and DQ9 based upon serology and expert assignment. Thus;

DQ3	=	DQB1*03:06, 03:10, 03:14
DQ7	=	DQB1*03:01:01-03:01:03, 03:04, 03:09, 03:13, 03:16, 03:19
DQ8	=	DQB1*03:02:01, 03:05:01, 03:07, 03:08, 03:11, 03:18
DQ9	=	DQB1*03:03:02, 03:12, 03:15, 03:17, 03:20

¹HLA-DQB1 alleles listed on the IMGT/HLA web page 2012-October-14, release 3.10.0, <u>www.ebi.ac.uk/imgt/hla</u>. ²The serological split of the DQB1*05:05 to 05:18, DQB1*06:06 to 06:07, 06:10, 06:13, 06:15 to

²The serological split of the DQB1*05:05 to 05:18, DQB1*06:06 to 06:07, 06:10, 06:13, 06:15 to 06:24 and 06:27 to 06:52, the DQB1*02:06 and 02:07 the DQB1*03:02:02-03:02:04, 03:03:03, 03:05:02, 03:07 to 03:09 and 03:11 to 03:44 and the DQB1*04:03 to 04:08 alleles is not known. The grouping of not serologically defined alleles is taken from the expert-assigned serological grouping in Tissue Antigens (2009) 73:95-170.

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Lot No.: 11S

Lot-specific information SPECIFICITY TABLE

DQ low resolution SSP typing

Specificities and sizes of the PCR products of the 8 primer mixes used for DQ low resolution SSP typing

Primer Mix	Size of spec. PCR product ¹	Size of control band ²	DQ serology ³	Amplified DQB1 alleles ⁴
1	225 bp	515 bp	5	*05:01:01:01-05:18
2 ⁶	220 bp, 270 bp	430 bp	1, 5, 6	*06:01:01-06:52
3	210 bp	430 bp	2	*02:01:01-02:07
4	220 bp	515 bp	3, 7	*03:01:01:01-03:01:06, 03:04, 03:09-03:10, 03:13-03:14, 03:16, 03:19, 03:21-03:22, 03:24, 03:27-03:29, 03:35- 03:36, 03:42, 03:44
5 ⁵	130 bp	515 bp	6, 8	*03:02:01-03:02:05, 03:05:01- 03:05:04, 03:07-03:08, 03:11, 03:18, 03:32, 03:37, 06:29
6 ^{5,7}	135 bp	515 bp	2, 3, 9	*02:03, 03:03:02:01-03:03:04, 03:06, 03:12, 03:15, 03:20, 03:25-03:26, 03:30-03:31, 03:33-03:34, 03:38-03:41, 03:43, 04:03:01-04:03:02, 06:51
7 ^{5,6}	145 bp, 185 bp	515 bp	3, 7, 8, 9	*03:01:01:01-03:44
8 ⁵	160 bp	430 bp	4	*04:01:01-04:08

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 DQ low resolution SSP typings.

When the primers in a primer mix can give rise to HLA-specific PCR products of more than one length this is indicated if the size difference is more than 20 base pairs. Size differences of 20 base pairs or less are not given. For high resolution SSP kits the respective lengths of the HLA-specific PCR product(s) are given for the alleles amplified by these primer mixes.

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.

Product Insert

101.201-48/12- including *Taq* pol., IFU-01 101.201-48u/12u- without *Taq* pol., IFU-02

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

Lot No.: 11S

Lot-specific information

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 DQ low resolution typing.

In addition, wells number 4 to 7 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.

³The serological split of the DQB1*05:05 to 05:18, DQB1*06:06 to 06:07, 06:10, 06:13, 06:15 to 06:24 and 06:27 to 06:52, the DQB1*02:06 and 02:07 the DQB1*03:02:02-03:02:04, 03:03:03, 03:05:02, 03:07 to 03:09 and 03:11 to 03:44 and the DQB1*04:03 to 04:08 alleles is not known. The grouping of not serologically defined alleles is taken from the expert-assigned serological grouping in Tissue Antigens (2009) 73:95-170.

⁴For several DQB1 alleles 1st and/or 3rd exon(s) and beyond, as well as intron nucleotide sequences, are not 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 in these regions are conserved within allelic groups.

⁵Primer mixes 5 to 8 may give a lower yield of HLA-specific PCR products than the other DQ low resolution primer mixes.

⁶The primer pair in well 2 and 7 will in some samples give rise to two HLA-specific PCR fragments.

⁷Primer mix 6 may have a tendency to giving rise to primer oligomer formation. 'ser', serological HLA specificity Product Insert

101.201-48/12– including *Taq* **pol.**, IFU-01 **101.201-48u/12u– without** *Taq* **pol.**, IFU-02

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

Lot No.: 11S	L	ot-speci	fic inforr	nation					
	INTER	PRE1		N TA	BLE				
	DQ low	resol	ution	SSP t	yping				
Amplificatio							alleles		
					W	ell ⁶			
		1	2	3	4	5	6	7	8
Length of spec.		225	220	210	220	130	135	145	160
PCR product(s)			270					185	
Length of int.		515	430	430	515	515	515	515	430
pos. control ¹									
·		26	9	30	26	28	26	38	38
5'-primer(s) ²		(173)	(122)	(185)	(173)	(179)	(173)	(210)	(210)
		^{5'} -ggg ^{3'}	^{5'} -gTT ^{3'}	^{5'} -AAg ^{3'}	^{5'} -TTA ^{3'}	^{5'} -gAC ^{3'}	5' -TCT 3'	^{5'} -gCA ^{3'}	⁵' -gCg
			26			28		48	
			(173)			(179)		(240)	
			^{5'} -TTA ^{3'}			^{5'} -gAC ^{3'}		^{5'} -CgC ^{3'}	
			26					55	
			(173) ^{5′} -тст ^{3′}					(260) ⁵ ' -gCC ^{3'}	
			-101-					55	
								(260)	
								^{5'} -gCA ^{3'}	
		87	86	86	86	57	57	86	77
3'-primer(s) ³		67 (356)	(353)	(353)	(353)	(266)	(266)	(353)	(327)
		• •	5' -ACg ^{3'}		• •		• •	• •	
		33.	86	gei	J . .	- 33	-91		
			(353)						
			5' -ACC 3'						
Well No.		1	2	3	4	5	6	7	8
DQB1 allele ⁴	ser. ⁵								
*02:01:01-02:02:01,				3					
02:04-02:07	DQ2, -			3					
*02:03	DQ2			3			6		
*03:01:01:01-03:01:06,									
03:04, 03:09-03:10, 03:13·									
03:14, 03:16, 03:19,	DQ3, DQ7,				4			7	
03:21-03:22, 03:24, 03:27	-							-	
03:29, 03:35-03:36,									
03:42, 03:44									
*03:02:01-03:02:05,									
03:05:01-03:05:04, 03:07-	DQ8, -					5		7	
03:08, 03:11, 03:18,									
03:32, 03:37		4	•	•		-	•	-	
Well No.		1	2 CE	3	4	5	6	7	8

. . .

101.201-48/12– including Taq pol., IFU-01 **101.201-48u/12u– without Taq pol.**, IFU-02 Visit <u>www.olerup-ssp.com</u> for "Instructions for Use" (IFU)

Lot No.: 11S	Lo	ot-speci	fic inforr	mation					
Length of spec.		225	220	210	220	130	135	145	160
PCR product(s)			270					185	
Well No.		1	2	3	4	5	6	7	8
*03:03:02:01-03:03:04,									
03:06, 03:12, 03:15,	DQ3,DQ9,								
03:20, 03:25-03:26, 03:30-	DQ3,DQ9,						6	7	
03:31, 03:33-03:34, 03:38-	-								
03:41,03:43									
*03:17, 03:23	DQ9, -							7	
*04:01:01-04:02:02,	DQ4, -								8
04:04-04:08	DQ4, -								0
*04:03:01-04:03:02	-						6		8
*05:01:01:01-05:18	DQ5, -	1							
*06:01:01-06:28, 06:30-	DQ1, DQ5,		2						
06:50, 06:52	DQ6, Null, -		2						
*06:29	DQ6		2			5			
*06:51	-		2				6		
DQB1 allele ⁴	ser. ⁵								
Well No.		1	2	3	4	5	6	7	8

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 DQ low resolution typing.

In addition, wells number 4, 5, 6 and 7 contain the primer pair giving rise to the longer, 515 bp, internal positive control band in order to allow kit identification.

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

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

⁴The sequence of the DQB1*03031 allele has been shown to be identical to DQB1*03:03:02.

⁵The serological split of the DQB1*05:05 to 05:18, DQB1*06:06 to 06:07, 06:10, 06:13, 06:15 to 06:24 and 06:27 to 06:52, the DQB1*02:06 and 02:07 the DQB1*03:02:02-03:02:04, 03:03:03, 03:05:02, 03:07 to 03:09 and 03:11 to 03:44 and the DQB1*04:03 to 04:08 alleles is not known. The grouping of not serologically defined alleles is taken from the expert-assigned serological grouping in Tissue Antigens (2009) 73:95-170.

⁶The primer pairs in wells 2 and 7 will in some samples give rise to two HLA-specific PCR fragments.

'ser', serological HLA specificity.

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101.201-48/12– including *Taq* **pol.**, IFU-01 **101.201-48u/12u– without** *Taq* **pol.**, IFU-02

Lot No.: 11S

Lot-specific information

	Lot No.: 115 Lot-specific information											
	CELL LINE VALIDATION SHEET											
		DQ low	resolu	tion pri	ime	er s	set					
								W	ell			
					1	2	3	4	5	6	7	8
				Production No.	201316101	201316102	201316103	201316104	201316105	201316106	201316107	201316108
	IHW	C cell line	DC	2B1								
1	9001	SA	*05:01		+	-	-	-	-	-	-	-
2	9280	LK707	*06:01	*02:02	-	+	+	-	-	-	-	-
3	9011	E4181324	*06:01		-	+	-	-	-	-	-	-
4		GU373	*02:01		-	-	+	-	-	-	-	-
5		KAS011	*05:02		+	-	-	-	-	-	-	-
6	9353		*03:02	*06:01	-	+	-	-	+	-	+	-
7	9020		*02:01	_	-	-	+	-	-	-	-	-
8	9025		*03:01	_	-	-	-	+	-	-	+	-
9		YAR	*03:02		-	-	-	-	+	-	+	-
10		LKT3	*04:01		-	-	-	-	-	-	-	+
11		PITOUT	*02:02		-	-	+	-	-	-	-	-
12	9052		*03:03		-	-	-	-	-	+	+	-
13		JESTHOM	*05:01		+	-	-	-	-	-	-	-
14		OLGA	*04:02		-	-	-	-	-	-	-	+
15	9075		*03:03		-	-	-	-	-	+	+	-
16		SWEIG007	*03:01	*00.00	-	-	-	+	-	-	+	-
17		CTM 3953540	*02:01	*06:03	-	+	+	-	-	-	-	-
18		32367	*06:02	*02:02	-	+	+	-	-	-	-	-
19		BM16	*03:01		-	-	-	+	-	-	+	-
20 21		SLE005	*06:04		-	+	-	-	-	-	-	-
21		AMALA KOSE	*03:01 *05:03	*06:04	-	-	-	+	-	-	+	-
22	9056		*05:03	*06:04	+	+	-	-	-	-	-	-
23		JBUSH	*03:01	06.01	+	+	-					
24		IBW9	*02:02			-	+	+	-	-	+	-
25		WT49	*02:02		-	-	+	-	-	-	-	-
20		CH1007	*04:01	*05:01	+	-	- T	-	-	-	-	+
28		BEL5GB	*02:02	*03:01	-	-			-			т -
20		MOU	*02:02	03.01	-	-	+++++++++++++++++++++++++++++++++++++++	+	-	-	+	-
30	9030		*04:02		-	-	-	-	-	-	-	+
31		DUCAF	*02:01		-	-	+	-	-	-	-	т -
32		HAG	*03:01		-	-	-	+	-	-	+	-
33		MT14B	*03:02		-	-	-	-	+	-	+	-
34		DHIF	*03:01		-	-	-	+	-	-	+	-
35		SSTO	*03:05		-	-	-	-	+	-	+	-
36		KT17	*03:02		-	-	-	-	+	-	+	-
37		ННКВ	*06:02		-	+	-	-	-	-	-	-
38	9099		*03:01		-	-	-	+	-	-	+	-
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		TER-ND	*05:01		+	-	-	-	-	-	-	-
4ŏ	9303		05:01		+	<u> </u>	<u> </u>		-	_	_	-

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

Lot No.: 11S

Lot-specific information CERTIFICATE OF ANALYSIS

Olerup SSP[®] DQ low resolution SSP

Product number:	101.201-48/12 - including <i>Taq</i> pol.
	101.201-48u/12u - without <i>Taq</i> pol.
Lot number:	11S
Expiry date:	2015-October-01
Number of tests:	48 tests – Product No. 101.201-48/48u
	12 tests – Product No. 101.201-12/48u
Number of wells per test:	8

Number of wens per test

Well specifications:

Well No.	Production No.
1	2013-161-01
2	2013-161-02
3	2013-161-03
4	2013-161-04
5	2013-161-05
6	2013-161-06
7	2013-161-07
8	2013-161-08

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

Additional 5'-primer in primer solution 2 was tested by separately adding another 3'-primer.

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

Date of approval: 2013-April-26

Approved by:

Production Quality Control

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

Lot No.: 11S	Lot-specific information			
	Declaration of Conformity			

Product name: Product number: Lot number:	<i>Olerup</i> SSP [®] DQ low resolution 101.201-48/48u, -12/12u 11S
Intended use:	DQB1 low resolution histocompatibility testing
Manufacturer:	<i>Olerup</i> SSP AB Franzengatan 5 SE-112 51 Stockholm, Sweden <i>Phone:</i> +46-8-717 88 27 <i>Fax:</i> +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 13485:2012, 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.

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

Stockholm, Sweden 2013-April-26

Ann-Cathrin Jareman Head of QA and Regulatory Affairs

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

Lot No.: 11S

Lot-specific information

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

Lot No.: 11S ADDRESSES: Lot-specific information

Manufacturer:

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Olerup Inc., 901 S. Bolmar St., Suite R, West Chester, PA 19382 *Tel:* 1-877-OLERUP1 *Fax:* 610-344-7989 *E-mail:* info.us@olerup.com *Web page:* http://www.olerup.com

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