

Lot No.: **99F**

Lot-specific Information

Olerup SSP[®] DQA1

Product number: 101.231-24u/04u – without *Taq* pol.
Lot number: 99F
Expiry date: 2011-August-01
Number of tests: 24 tests – Product No. 101.231-24u
4 tests – Product No. 101.231-04u
Number of wells per test: 32
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. 99F.

CHANGES COMPARED TO THE PREVIOUS *OLERUP* SSP[®] DQA1 Lot

The DQA1 specificity and interpretation tables have been updated compared the previous *Olerup* SSP[®] DQA1 lot (**Lot No. 16F**).

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

Well	5'-primer	3'-primer	rationale
25	Exchanged	Exchanged	Exchanged primer pair for the DQA1*0509 allele.

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PRODUCT DESCRIPTION

DQA1 SSP typing

CONTENT

The primer set contains 5'- and 3'-primers for identifying the DQA1*0101 to DQA1*0602 alleles.

STRIP LAYOUT

Each test consists of 32 PCR reactions in a 32 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

The 32 well cut PCR plate is marked with 'DQA1', in silver/gray ink.

Well No. 1 is marked with the Lot No. '99F'.

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

Please note: When removing each 32 well PCR plate, make sure that the remaining plates stay sealed. Use a scalpel or a similar instrument to carefully cut the foil between the plates.

INTERPRETATION

Only DQA1 alleles will be amplified by the DQA1 typing kit. Thus, the interpretation of DQA1 typings is not influenced by the DQA2 gene.

UNIQUELY IDENTIFIED ALLELES

All the DQA1 alleles, i.e. **DQA1*0101 to 0107, DQA1*0201, DQA1*0301 to 0303, DQA1*0401 to DQA1*0404, DQA1*0501 to 0509 and DQA1*0601 to DQA1*0602**, recognized by the HLA Nomenclature Committee in July 2009¹ will give rise to unique amplification patterns by the primers in the DQA1 typing kit.

The DQA1 typing kit cannot distinguish the DQA1*010101 and 010102 alleles, the DQA1*010201 to 010203 alleles, the DQA1*010401 and 010402 alleles, the DQA1*050101 and 050102 alleles and the DQA1*060101 and 060102 alleles.

¹DQA1 alleles listed on the IMGT/HLA web page 2009-July-17, release 2.26.0, www.ebi.ac.uk/imgt/hla.

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RESOLUTION IN HOMO- AND HETEROZYGOTES

The DQA1 alleles give rise to 28 different amplification patterns, the DQA1*010201-010203 and 010204 alleles and the DQA1*040101 and 040102 alleles have different amplification patterns. These amplification patterns can be combined in 406 homozygous and heterozygous combinations. 37 of the alleles do not give rise to unique amplification patterns. The differently sized specific PCR fragments generated by primer mix 25 and the silent alleles DQA1*010204 and *040102 were not considered in this calculation.)

+++-----	----+---	-----+	-----	0101, 0106 = 0104, 0106 =
				0105, 0106
++-++-+	----+++-	+--+--+	+-----	0104, 0509 = 0107, 0505 =
				0107, 0509
++-++-+	----+---	-----+	+-----	0101, 0107 = 0104, 0107 =
				0105, 0107 = 0107, 0107
++-++-+	----+---	-----+	-----	0104, 0104 = 0104, 0105
-++-+++	----+---	-----+	-----	0102, 0106 = 0106, 0106
-----+	-++-++-	-----+	-----	0302, 0302 = 0302, 0303
-----+	----++++	+++-+--	-----	0501, 0502 = 0502, 0502 =
				0502, 0503 = 0502, 0505
-----+	----+++-	+++++--	-----	0501, 0504 = 0503, 0504 =
				0504, 0505
-----+	----++++	+--+--	+-----	0505, 0509 = 0509, 0509
-----+	----++++	+--+--	-----+	0505, 0508 = 0508, 0508
-----+	----++++	-++-+--	-----+	0503, 0506 = 0506, 0506
-----+	----++++	-++-+--	-----+	0503, 0507 = 0507, 0507
-----+	----++++	-----+	-+-----	0401, 0402 = 0402, 0402
-----+	----++++	-----+	---+-----	0401, 0404 = 0404, 0404
-----+	----+---	-----+	---+-----	0601, 0602 = 0602, 0602

0101 = 010101-010102, 0102 = 010201-010203,
0104 = 010401-010402, 0401 = 040101,
0501 = 050101-050102, 0601 = 060101-060102

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SPECIFICITY TABLE

DQA1 SSP typing

Specificities and sizes of the PCR products of the 32 primer mixes used for DQA1 SSP typing

Primer Mix	Size of spec. PCR product ¹	Size of control band ²	Amplified DQA1 alleles ³
1⁴	145 bp	515 bp	*010101, 010102, 010401-0105, 0107
2⁵	170 bp	515 bp	*010101-010204, 010401-0107
3⁴	145 bp	430 bp	*010201-0103, 0106
4	170 bp	430 bp	*0103
5	220 bp	430 bp	*010401-0105, 0106 [?] , 0107 [?]
6⁴	100 bp	430 bp	*010401, 010402, 0106 [?] , 0107 [?]
7^{4,5}	95 bp	430 bp	*0106
8⁴	65 bp	430 bp	*010101-010203, 0103, 0106 [?] , 0107 [?] , 0201, 030101-0303, 040101-0404, 050101-0509, 060101-0602
9	175 bp	430 bp	*0201
10	185 bp	430 bp	*030101-0303
11	215 bp	430 bp	*0302
12	225 bp	515 bp	*0302, 0303
13	225 bp	515 bp	*010101-0107, 0201, 030101, 040101, 0402-0404, 050101-0509, 060101-0602
14⁴	125 bp	430 bp	*040101-0402, 0404, 050101-0509
15	165 bp	430 bp	*050101-0509
16⁴	90 bp	430 bp	*0502
17	200 bp	430 bp	*050101, 050102, 0502 [?] , 0504 [?] , 0505, 0508, 0509
18	200 bp	430 bp	*0502 [?] , 0503, 0504 [?] , 0506, 0507
19	205 bp	430 bp	*050101-0503, 0505-0509
20⁴	135 bp	430 bp	*0504
21⁴	100 bp	430 bp	*0502 [?] , 0504 [?] , 0505, 0508, 0509
22⁴	120 bp	515 bp	*060101-0602
23⁴	85 bp	430 bp	*040101-0404, 060101-0602
24	220 bp	430 bp	*010101-0107, 0201 ^w , 030101-0303, 040101-0404, 050101, 050102, 0502 [?] , 0503, 0504 [?] , 0506, 0507, 060101-0602

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25^{4,7}	80 bp, 175 bp	430 bp	*0107, 0509
26	150 bp	430 bp	*0402
27^{4,6}	90 bp	430 bp	*0403N
28⁴	105 bp	430 bp	*0404
29	160 bp	430 bp	*0602
30	215 bp	430 bp	*0506
31⁴	100 bp	430 bp	*0507
32⁴	135 bp	430 bp	*0508

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 DQA1 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 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, e.g. the primers in wells 11, 12, 17, 18, 21, 23 and 27.

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.

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 DQA1 typing.

In addition, wells number 2, 12, 13 and 22 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.

³For several DQA1 alleles only partial 1st, 2nd, 3rd and 4th 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 are conserved within allelic groups.

⁴Short specific PCR fragments are less intense and not as sharp as longer specific bands.

⁵Primer mixes 2 and 7 may have tendencies of giving rise to primer dimer artifacts.

⁶Primer mix 27 may give rise to nonspecific amplifications.

⁷Primer mix 25: Specific PCR product of 80 bp in the DQA1*0509 allele. Specific PCR product of 175 bp in the DQA1*0107 allele.

'w', may be weakly amplified.

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

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INTERPRETATION TABLE																
DQA1 SSP typing																
Amplification patterns of the DQA1*0101 to *0602 alleles																
	Well ⁵															
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Length of spec.	145	170	145	170	220	100	95	65	175	185	215	225	225	125	165	90
PCR product																
Length of int.	515	515	430	430	430	430	430	430	430	430	430	515	515	430	430	430
pos. control ¹																
5'-primer(s) ²	34(169)	25(143)	34(169)	25(143)	-7(49)	199(664)	25(143)	-7(49)	7(90)	7(90)	-6(53)	99(366)	99(366)	25(143)	34(169)	59(245)
	5'-Agg	35'-gTA	35'-AgC	35'-gTT	35'-CCA	35'-gCA	35'-gTA	35'-CCg	35'-CAC	35'-CAT	35'-gAC	35'-CCC	35'-CCC	35'-gTA	35'-AgC	35'-CCg
								-7(49)								
								5'-CCg	3'							
3'-primer(s) ³	69(274)	69(274)	69(274)	69(274)	1st I	218(722)	44(199)	2(74)	52(224)	55(232)	1st I	160(548)	160(548)	53(226)	75(293)	75(293)
	5'-TgC	35'-TgC	35'-TgC	35'-TgC	35'-TTT	35'-CTT	35'-AgC	35'-TgT	35'-TgT	35'-TCT	35'-TTT	35'-CAT	35'-CAg	35'-TTg	35'-gAC	35'-gAC
													160(548)			
													5'-CAg	3'		
Well No.	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
DQA1 allele ⁴																
*010101, 010102	1	2						8					13			
*010201-010203		2	3					8					13			
*010204		2	3										13			
*0103			3	4				8					13			
*010401, 010402	1	2			5	6							13			
*0105	1	2			5								13			
*0106		2	3		?	?	7	?					13			
*0107	1	2			?	?		?					13			
*0201								8	9				13			
*030101								8		10			13			
*0302								8		10	11	12				
*0303								8		10		12				
*040101								8					13	14		
*040102								8						14		
*0402								8					13	14		
*0403N								8					13			
*0404								8					13	14		
Well No.	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16



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INTERPRETATION TABLE															
DQA1 SSP typing															
Amplification patterns of the DQA1*0101 to *0602 alleles															
Well ⁵															
17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32
200	200	205	135	100	120	85	220	80	150	90	105	160	215	100	135
								175							
430	430	430	430	430	515	430	430	430	430	430	430	430	430	430	430
107(389)	107(389)	21(131)	21(131)	-13(31)	25(143)	32(165)	up ⁶	-13(31)	101(372)	53(226)	153(526)	99(366)	102(373)	189(634)	107(389)
5'-CAT	5'-CAT	35'-TCC	35'-TCT	35'-ggA	35'-gTT	35'-gAC	35'-ACT	35'-ggA	35'-ACg	35'-gAT	35'-gTC	35'-CCC	35'-CAg	35'-CTA	3'-CAT
								34(169)							
								5'-Agg	3'						
160(547)	160(547)	75(293)	52(223)	1st I	52(223)	47(208)	-13(31)	1(70)	138(482)	69(274)	174(591)	139(484)	160(547)	208(691)	139(485)
5'-AgC	5'-AgA	35'-gAC	35'-TCT	35'-TgC	35'-TCT	35'-ACA	35'-ggC	35'-TTT	35'-TgA	35'-TgT	35'-TCg	35'-gCg	35'-AgA	35'-gCA	3'-AgA
								79(304)							
								5'-gCA	3'						
17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32
Well No.															
DQA1 allele ⁴															
							24								
							24								
							24								
							24								
							24								
							24								
							24								
							24	25							
							w								
							24								
							24								
							24								
						23	24								
						23	24								
						23	24	26							
						23	24		27						
						23	24			28					
17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32
Well No.															

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Length of spec.	145	170	145	170	220	100	95	65	175	185	215	225	225	125	165	90
PCR product																
Well No.	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
*050101, 050102								8					13	14	15	
*0502								8					13	14	15	16
*0503								8					13	14	15	
*0504								8					13	14	15	
*0505								8					13	14	15	
*0506								8					13	14	15	
*0507								8					13	14	15	
*0508								8					13	14	15	
*0509								8					13	14	15	
*060101, 060102								8					13			
*0602								8					13			
DQA1 allele ⁴																
Well No.	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16

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 DQA1 typing.

In addition, wells number 2, 12, 13 and 22 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 1st, 2nd, 3rd or 4th 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.

³The codon, and in parenthesis the nucleotide, in the 1st, 2nd, 3rd or 4th exon or the 1st intron, 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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200	200	205	135	100	120	85	220	80	150	90	105	160	215	100	135	Length of spec. PCR product
								175								
17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	Well No.
17		19					24									*050101, 050102
?	?	19		?			?									*0502
	18	19					24									*0503
?	?		20	?			?									*0504
17		19		21												*0505
	18	19					24						30			*0506
	18	19					24							31		*0507
17		19		21											32	*0508
17		19		21				25								*0509
					22	23	24									*060101, 060102
					22	23	24					29				*0602
																DQA1 allele ⁴
17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	Well No.

⁴The sequence of the DQA1*030102 allele has been shown to be identical to DQA1*0302.

DQA1*050103 has been renamed to DQA1*0505.

⁵Primer mix 25: Specific PCR product of 80 bp in the DQA1*0509 allele. Specific PCR product of 175 bp in the DQA1*0107 allele.

⁶Primer located upstream of the 1st exon.

'w', may be weakly amplified.

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

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CELL LINE VALIDATION SHEET																				
DQA1 SSP typing kit																				
					Well															
					1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
				Prod. No.:	200960901	200960902	200960903	200960904	200960905	200960906	200960907	200960908	200960909	200960910	200960911	200960912	200960913	200960914	200960915	200960916
	IHWC cell line		DQA1*																	
1	9001	SA	*0101		+	+	-	-	-	-	-	+	-	-	-	-	+	-	-	-
2	9280	LK707	*0103	*0303	-	-	+	+	-	-	-	+	-	+	-	+	+	-	-	-
3	9011	E4181324	*0103		-	-	+	+	-	-	-	+	-	-	-	-	+	-	-	-
4	9275	GU373	*0501		-	-	-	-	-	-	-	+	-	-	-	-	+	+	+	-
5	9009	KAS011	*0102		-	+	+	-	-	-	-	+	-	-	-	-	+	-	-	-
6	9353	SM	*0103	*0301	-	-	+	+	-	-	-	+	-	+	-	-	+	-	-	-
7	9020	QBL	*0501		-	-	-	-	-	-	-	+	-	-	-	-	+	+	+	-
8	9025	DEU	*03		-	-	-	-	-	-	-	+	-	+	-	-	+	-	-	-
9	9026	YAR	*0301		-	-	-	-	-	-	-	+	-	+	-	-	+	-	-	-
10	9107	LKT3	*0303		-	-	-	-	-	-	-	+	-	+	-	+	-	-	-	-
11	9051	PITOUT	*0201		-	-	-	-	-	-	-	+	+	-	-	-	+	-	-	-
12	9052	DBB	*0201		-	-	-	-	-	-	-	+	+	-	-	-	+	-	-	-
13	9004	JESTHOM	*0101		+	+	-	-	-	-	-	+	-	-	-	-	+	-	-	-
14	9071	OLGA	*0401		-	-	-	-	-	-	-	+	-	-	-	-	+	+	-	-
15	9075	DKB	*0302		-	-	-	-	-	-	-	+	-	+	+	+	-	-	-	-
16	9037	SWEIG007	*0505		-	-	-	-	-	-	-	+	-	-	-	-	+	+	+	-
17	9282	CTM3953540	*0103	*0501	-	-	+	+	-	-	-	+	-	-	-	-	+	+	+	-
18	9257	32367	*0102	*0303	-	+	+	-	-	-	-	+	-	+	-	+	+	-	-	-
19	9038	BM16	*0505		-	-	-	-	-	-	-	+	-	-	-	-	+	+	+	-
20	9059	SLE005	*0102		-	+	+	-	-	-	-	+	-	-	-	-	+	-	-	-
21	9064	AMALA	*0503		-	-	-	-	-	-	-	+	-	-	-	-	+	+	+	-
22	9056	KOSE	*0102	*0104	+	+	+	-	+	+	-	+	-	-	-	-	+	-	-	-
23	9124	IHL	*0103	*0104	+	+	+	+	+	+	-	+	-	-	-	-	+	-	-	-
24	9035	JBUSH	*0505		-	-	-	-	-	-	-	+	-	-	-	-	+	+	+	-
25	9049	IBW9	*0201		-	-	-	-	-	-	-	+	+	-	-	-	+	-	-	-
26	9285	WT49	*0501		-	-	-	-	-	-	-	+	-	-	-	-	+	+	+	-
27	9191	CH1007	*0303	*0105	+	+	-	-	+	-	-	+	-	+	-	+	+	-	-	-
28	9320	BEL5GB	*0201	*0303	-	-	-	-	-	-	-	+	+	+	-	+	+	-	-	-
29	9050	MOU	*0201		-	-	-	-	-	-	-	+	+	-	-	-	+	-	-	-
30	9021	RSH	*0401		-	-	-	-	-	-	-	+	-	-	-	-	+	+	-	-
31	9019	DUCAF	*0501		-	-	-	-	-	-	-	+	-	-	-	-	+	+	+	-
32	9297	HAG	*0505		-	-	-	-	-	-	-	+	-	-	-	-	+	+	+	-
33	9098	MT14B	*0301		-	-	-	-	-	-	-	+	-	+	-	-	+	-	-	-
34	9104	DHIF	*0505		-	-	-	-	-	-	-	+	-	-	-	-	+	+	+	-
35	9302	SSTO	*0301		-	-	-	-	-	-	-	+	-	+	-	-	+	-	-	-
36	9024	KT17	*0301		-	-	-	-	-	-	-	+	-	+	-	-	+	-	-	-
37	9065	HHKB	*0103		-	-	+	+	-	-	-	+	-	-	-	-	+	-	-	-
38	9099	LZL	*0503		-	-	-	-	-	-	-	+	-	-	-	-	+	+	+	-
39	9315	CML	*0303	*0501	-	-	-	-	-	-	-	+	-	+	-	+	+	+	+	-
40	9134	WHONP199	*0201	*0302	-	-	-	-	-	-	-	+	+	+	+	+	+	-	-	-
41	9055	H0301	*0102		-	+	+	-	-	-	-	+	-	-	-	-	+	-	-	-
42	9066	TAB089	*0103		-	-	+	+	-	-	-	+	-	-	-	-	+	-	-	-
43	9076	T7526	*0302		-	-	-	-	-	-	-	+	-	+	+	+	-	-	-	-
44	9057	TEM	*0104		+	+	-	-	+	+	-	-	-	-	-	-	+	-	-	-
45	9239	SHJO	*0201	*0303	-	-	+	+	-	-	-	+	-	+	-	+	+	-	-	-
46	9013	SCHU	*0102		-	+	+	-	-	-	-	+	-	-	-	-	+	-	-	-
47	9045	TUBO	*0505		-	-	-	-	-	-	-	+	-	-	-	-	+	+	+	-
48	9303	TER-ND	*0101		+	+	-	-	-	-	-	+	-	-	-	-	+	-	-	-

Lot No.: **99F**

Lot-specific Information

CELL LINE VALIDATION SHEET																																
DQA1 SSP typing kit																																
					Well																											
					17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32												
				Prod. No.:	200960917	200960918	200960919	200960920	200960921	200960922	200960923	200960924	200960925	200960926	200960927	200960928	200960929	200960930	200960931	200960932												
	IHWC cell line		DQA1*																													
1	9001	SA	*0101		-	-	-	-	-	-	-	+	-	-	-	-	-	-	-	-	-											
2	9280	LK707	*0103	*0303	-	-	-	-	-	-	-	+	-	-	-	-	-	-	-	-	-											
3	9011	E4181324	*0103		-	-	-	-	-	-	-	+	-	-	-	-	-	-	-	-	-											
4	9275	GU373	*0501		+	-	+	-	-	-	-	+	-	-	-	-	-	-	-	-	-											
5	9009	KAS011	*0102		-	-	-	-	-	-	-	+	-	-	-	-	-	-	-	-	-											
6	9353	SM	*0103	*0301	-	-	-	-	-	-	-	+	-	-	-	-	-	-	-	-	-											
7	9020	QBL	*0501		+	-	+	-	-	-	-	+	-	-	-	-	-	-	-	-	-											
8	9025	DEU	*03		-	-	-	-	-	-	-	+	-	-	-	-	-	-	-	-	-											
9	9026	YAR	*0301		-	-	-	-	-	-	-	+	-	-	-	-	-	-	-	-	-											
10	9107	LKT3	*0303		-	-	-	-	-	-	-	+	-	-	-	-	-	-	-	-	-											
11	9051	PITOUT	*0201		-	-	-	-	-	-	-	W	-	-	-	-	-	-	-	-	-											
12	9052	DBB	*0201		-	-	-	-	-	-	-	W	-	-	-	-	-	-	-	-	-											
13	9004	JESTHOM	*0101		-	-	-	-	-	-	-	+	-	-	-	-	-	-	-	-	-											
14	9071	OLGA	*0401		-	-	-	-	-	-	-	+	+	-	-	-	-	-	-	-	-											
15	9075	DKB	*0302		-	-	-	-	-	-	-	+	-	-	-	-	-	-	-	-	-											
16	9037	SWEIG007	*0505		+	-	+	-	+	-	-	-	-	-	-	-	-	-	-	-	-											
17	9282	CTM3953540	*0103	*0501	+	-	+	-	-	-	-	+	-	-	-	-	-	-	-	-	-											
18	9257	32367	*0102	*0303	-	-	-	-	-	-	-	+	-	-	-	-	-	-	-	-	-											
19	9038	BM16	*0505		+	-	+	-	+	-	-	-	-	-	-	-	-	-	-	-	-											
20	9059	SLE005	*0102		-	-	-	-	-	-	-	+	-	-	-	-	-	-	-	-	-											
21	9064	AMALA	*0503		-	+	+	-	-	-	-	+	-	-	-	-	-	-	-	-	-											
22	9056	KOSE	*0102	*0104	-	-	-	-	-	-	-	+	-	-	-	-	-	-	-	-	-											
23	9124	IHL	*0103	*0104	-	-	-	-	-	-	-	+	-	-	-	-	-	-	-	-	-											
24	9035	JBUSH	*0505		+	-	+	-	+	-	-	-	-	-	-	-	-	-	-	-	-											
25	9049	IBW9	*0201		-	-	-	-	-	-	-	W	-	-	-	-	-	-	-	-	-											
26	9285	WT49	*0501		+	-	+	-	-	-	-	+	-	-	-	-	-	-	-	-	-											
27	9191	CH1007	*0303	*0105	-	-	-	-	-	-	-	+	-	-	-	-	-	-	-	-	-											
28	9320	BEL5GB	*0201	*0303	-	-	-	-	-	-	-	+	-	-	-	-	-	-	-	-	-											
29	9050	MOU	*0201		-	-	-	-	-	-	-	W	-	-	-	-	-	-	-	-	-											
30	9021	RSH	*0401		-	-	-	-	-	-	-	+	+	-	-	-	-	-	-	-	-											
31	9019	DUCAF	*0501		+	-	+	-	-	-	-	+	-	-	-	-	-	-	-	-	-											
32	9297	HAG	*0505		+	-	+	-	+	-	-	-	-	-	-	-	-	-	-	-	-											
33	9098	MT14B	*0301		-	-	-	-	-	-	-	+	-	-	-	-	-	-	-	-	-											
34	9104	DHIF	*0505		+	-	+	-	+	-	-	-	-	-	-	-	-	-	-	-	-											
35	9302	SSTO	*0301		-	-	-	-	-	-	-	+	-	-	-	-	-	-	-	-	-											
36	9024	KT17	*0301		-	-	-	-	-	-	-	+	-	-	-	-	-	-	-	-	-											
37	9065	HHKB	*0103		-	-	-	-	-	-	-	+	-	-	-	-	-	-	-	-	-											
38	9099	LZL	*0503		-	+	+	-	-	-	-	+	-	-	-	-	-	-	-	-	-											
39	9315	CML	*0303	*0501	+	-	+	-	-	-	-	+	-	-	-	-	-	-	-	-	-											
40	9134	WHONP199	*0201	*0302	-	-	-	-	-	-	-	+	-	-	-	-	-	-	-	-	-											
41	9055	H0301	*0102		-	-	-	-	-	-	-	+	-	-	-	-	-	-	-	-	-											
42	9066	TAB089	*0103		-	-	-	-	-	-	-	+	-	-	-	-	-	-	-	-	-											
43	9076	T7526	*0302		-	-	-	-	-	-	-	+	-	-	-	-	-	-	-	-	-											
44	9057	TEM	*0104		-	-	-	-	-	-	-	+	-	-	-	-	-	-	-	-	-											
45	9239	SHJO	*0201	*0303	-	-	-	-	-	-	-	+	-	-	-	-	-	-	-	-	-											
46	9013	SCHU	*0102		-	-	-	-	-	-	-	+	-	-	-	-	-	-	-	-	-											
47	9045	TUBO	*0505		+	-	+	-	+	-	-	-	-	-	-	-	-	-	-	-	-											
48	9303	TER-ND	*0101		-	-	-	-	-	-	-	+	-	-	-	-	-	-	-	-	-											

Lot No.: **99F**

Lot-specific Information

CERTIFICATE OF ANALYSIS

Olerup SSP® DQA1 SSP

Product number: 101.231-24u/04u – without *Taq* pol.
Lot number: 99F
Expiry date: 2011-August-01
Number of tests: 24 tests – Product No. 101.231-24u
4 tests – Product No. 101.231-04u
Number of wells per test: 32

Well specifications:

Well No.	Production No.	Well No.	Production No.	Well No.	Production No.
1	2009-609-01	13	2009-609-13	25	2009-609-25
2	2009-609-02	14	2009-609-14	26	2009-609-26
3	2009-609-03	15	2009-609-15	27	2009-609-27
4	2009-609-04	16	2009-609-16	28	2009-609-28
5	2009-609-05	17	2009-609-17	29	2009-609-29
6	2009-609-06	18	2009-609-18	30	2009-609-30
7	2009-609-07	19	2009-609-19	31	2009-609-31
8	2009-609-08	20	2009-609-20	32	2009-609-32
9	2009-609-09	21	2009-609-21		
10	2009-609-10	22	2009-609-22		
11	2009-609-11	23	2009-609-23		
12	2009-609-12	24	2009-609-24		

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 No. 7, 16, 20 and 26 to 32 were available. In primer solutions 7, 25, 26, 29, 31 and 3 the 5'-primers were tested by adding one additional 3'-primer, the 3'-primers were not possible to test. In primer solutions 16, 20, 27, 28 and 30 the 3'-primers were tested by adding one additional 5'-primer, the 5'-primers were not possible to test.

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

Date of approval: 2009-August-25

Approved by:

Quality Control, Supervisor

Lot No.: **99F**

Lot-specific Information

Declaration of Conformity

Product name: *Olerup* SSP® DQA1
Product number: 101.231-24u/04u
Lot number: 99F

Intended use: HLA-DQA1 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
2009-August-25

Olle Olerup
Managing Director



Lot No.: **99F**

Lot-specific Information

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Lot No.: **99F**

Lot-specific Information

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