Olerup SSP™ DRB4

Product number:	**101.122-24/06 – licensed for PCR** **101.122-24u/06u – not licensed for PCR**
Lot number:	**Y01**
Expiry date:	**2009-June-01**
Number of tests:	**24 test – Product No. 101.122-24** **6 tests – Product No. 101.122-06**
Number of tubes per test:	**12**
Storage - pre-aliquoted primers:	**dark at -20°C**
- PCR Master Mix:	**-20°C**

This Product Description is only valid for Lot No. Y01.

CHANGES COMPARED TO THE PREVIOUS *OLERUP* SSP™ DRB4 LOT

The DRB4 specificity and interpretation tables have been updated for the DRB alleles described since the previous *Olerup* SSP™ DRB4 lot was made **(Lot No. V63)**.

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

Tube	5'-primer	3'-primer	rationale
1	-	Modified	Increased yield of specific PCR product.

PRODUCT DESCRIPTION

DRB4 SSP subtyping

CONTENT

The primer set contains 5'- and 3'-primers for identifying the DRB4*01010101 to DRB4*0301N alleles.
The primer solutions are pre-aliquoted into 0.2 ml PCR tubes. Each tube in the set contains a dried primer solution consisting of a specific primer mix, i.e. allele- and group-specific primers as well as a ***control primer pair*** matching non-allelic sequences.
PCR Master Mix complete with Taq, *Taq* polymerase, nucleotides, buffer, glycerol and cresol red, as well as PCR lids are included in the licensed kit.
PCR Master Mix without Taq, nucleotides, buffer, glycerol and cresol red, as well as PCR lids are included in the unlicensed kit.
12 PCR reactions with a reaction volume of 10 µl are performed per sample.
Note: The pellets in the tubes may vary in form and colour. This does not affect the performance of the product.

PLATE LAYOUT

Each test consists of 12 PCR reactions in a 16 well cut 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 'DRB4 Y01'.
Well No. 1 is marked with '1'.
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 DRB4 alleles will be amplified by the primers in the DRB4 SSP subtyping kit. Thus, the interpretation of DRB4 SSP subtypings is not influenced by alleles of other DRB genes.

UNIQUELY IDENTIFIED ALLELES

All the DRB4 alleles, i.e. **DRB4*01010101 to DRB4*0301N**, recognized by the HLA Nomenclature Committee in July 2007[1] will give rise to unique amplification patterns by the primers in the DRB4 subtyping kit.
The DRB4 subtyping kit cannot distinguish the DRB4*01030101, DRB4*010302 to DRB4*010304 alleles.

[1]***Nomenclature for factors of the HLA system, 1998***. *Tissue Antigens* 1999: **53**: 407-446.
DRB alleles listed on the IMGT/HLA web page 2007-July-09, release 2.18.0, www.ebi.ac.uk/imgt/hla.

RESOLUTION IN HOMO- AND HETEROZYGOTES

The 10 phenotypically different DRB4 alleles can be combined in 55 homozygous and heterozygous combinations. Ten of these genotypes do not give rise to unique amplification patterns.

```
+-++--++ ----  0101,0103 = 0103,0301N
+-++---+ +---  0101,0105 = 0105,0301N
+-++---+ --+-  0101,0106 = 0106,0301N
+-++---+ ---+  0101,0107 = 0107,0301N
+-++---+ ----  0101,0101 = 0101,0301N

0103 = 01030101, 010302, 010303 and 010304.
```

LICENSES

101.122-24/06 – licensed for PCR.
Notice to purchaser: Limited License.

The purchase price of this product includes limited, non-transferable rights under U.S. Patents 4,683,202, 4,683,195 and 4,965,188 and their foreign counterparts, owned by Roche Molecular Systems, Inc. and F. Hoffman-La Roche Ltd ("Roche"), to use only this amount of the product to practice the Polymerase Chain Reaction ("PCR") Process described in said patents solely for the HLA Typing applications of the purchaser solely for organ or tissue or bone marrow transplantation, and explicitly excludes analysis of forensic evidence or parentage determination. The rights to use this product to perform and to offer commercial service for HLA Typing for organ or tissue transplantation using PCR, including reporting the results of the purchaser's activities for a fee or other commercial consideration, is also hereby granted. Further information on purchasing licenses to practice PCR may be obtained by contacting in the United States, the Director of Licensing at Roche Molecular Systems, inc., 1145 Atlantic Avenue, Alameda, California 94501, and outside the United States, the PCR Licensing Manager, F. Hoffmann-La Roche Ltd, Grenzacherstr. 124, CH-4070 Basel, Switzerland.

101.122-24u/06u – not licensed for PCR.
Notice to purchaser: Disclaimer of License.

This product is optimized for use in the Polymerase Chain Reaction ("PCR") Process which is covered by patents owned by Roche Molecular Systems, Inc. and F. Hoffmann-La Roche Ltd ("Roche"). No license under these patents to use the PCR Process is conveyed expressly or by implication to the purchaser of this product. Further information on purchasing licenses to practice PCR may be obtained by contacting in the United States, the Director of Licensing at Roche Molecular Systems, inc., 1145 Atlantic Avenue, Alameda, California 94501.

101.122-24/06 and 101.122-24u/06u

These products use ARMS™ technology and is sold under license from Zeneca Limited. ARMS is the subject of European Patent No. 0332435, US Patent No. 5595890 and corresponding world-wide patents. ARMS is a trademark of Zeneca Limited.

GUARANTEE

Olerup SSP AB guarantees that the primers in the DRB4 subtyping kit have the specificities given in the Specificity and Interpretation Tables of the product insert and in the GenoVision version of the HELMBERG-SCORE™ software.
When stored dark at –20°C, the dried primers are stable for 22 months from the date of manufacture.
When stored at –20°C, the PCR Master Mix complete with *Taq* and the PCR Master Mix without *Taq* are stable for 24 months from the date of manufacture.
The kit is shipped at ambient temperature.

PROTOCOL

DNA EXTRACTION

Extracted, highly pure DNA is needed for SSP typings. We recommend isolation of DNA using GenoPrep B200 or GenoPrep B350 cartridges on the GenoM™-6 robotic workstation (GenoVision Europe *Tel:* +43 1 710 15 00 or GenoVision Inc. USA *Tel:* +1 610 430 88 41; http://www.genovision.com). Using GenoM™-6-extracted DNA ACD, EDTA and heparinised blood can be used as starting material. Because of its high purity, GenoM™-6-extracted DNA can be diluted when used in combination with *Olerup* SSP™ products. The recommended DNA concentration is 15 ng/ul.
Alternatively – BUT DO NOT USE HEPARINISED BLOOD WITH THESE METHODS - the DNA can be extracted using trimethylammoniumbromide salts (DTAB/CTAB) or by salting out. Dissolve the extracted DNA in dH_2O.

IMPORTANT:
Optimal DNA concentration using: GenoM™-6-extracted DNA, 15 ng/µl.
DNA extracted by other methods, 30 ng/µl.

Concentration exceeding 50 ng/µl will increase the risk for nonspecific amplifications and weak extra bands, especially for HLA Class I high resolution SSP typings.

PCR AMPLIFICATION

101.122-24/06 – licensed for PCR

For one DRB4 subtyping, add at room temperature in a 0.5 ml tube:

15 x 2 µl = 30 µl DNA (30 ng/µl)
15 x 3 µl = 45 µl PCR Master Mix complete with *Taq* – mix well before taking your aliquot
15 x 5 µl = 75 µl dH_2O

Mix well, dispense 10 µl of the DNA-PCR Master Mix-H_2O mixture into each of the 12 wells of a DRB4 subtyping. ***Well No. 1 of the 16 well PCR plate is marked with '1'.*** Close the 16 well PCR plate with the provided lids.

101.122-24u/06u – not licensed for PCR

For one DRB4 subtyping, add at room temperature in a 0.5 ml tube:

15 x 2 µl = 30 µl DNA (30 ng/µl)
15 x 3 µl = 45 µl PCR Master Mix without *Taq* – mix well before taking your aliquot
1.2 µl *Taq* polymerase (5 units/µl)
15 x 5 µl – 1.2 µl = 73.8 µl dH_2O

Mix well, dispense 10 µl of the DNA-PCR Master Mix-*Taq*-H_2O mixture into each of the 12 wells of a DRB4 subtyping. ***Well No. 1 of the 16 well PCR plate is marked with '1'.*** Close the 16 well PCR plate with the provided lids.

Use a 96 well thermal cycler with a heated lid. The temperature gradient across the heating block should be < 1°C.

PCR cycling parameters:

1. 1 cycle	94°C	2 min	denaturation
2. 10 cycles	94°C	10 sec.	denaturation
	65°C	60 sec.	annealing and extension
3. 20 cycles	94°C	10 sec.	denaturation
	61°C	50 sec.	annealing
	72°C	30 sec.	extension

The same PCR cycling parameters are used for all the *Olerup* SSP kits.

AGAROSE GEL ELECTROPHORESIS

Prepare a 2% (w/v) agarose gel in 0.5 x TBE buffer. Dissolve the agarose by boiling in a microwave oven. Let the gel solution cool to 60°C. Stain the gel prior to casting with ethidium bromide (10 mg/ml), 5 µl per 100 ml gel solution. For maximal ease of handling use our ethidium bromide dropper bottles (Product No. 103.301-10), 1 drop of ethidium bromide solution per 50-75 ml of gel. **Note: Ethidium bromide is a powerful carcinogen.**
Load the PCR products, preferably using an 8-channel pipette. Load a DNA size marker (100 base pair ladder, Product No. 103.201-100) in one well per row.
Run the gel in 0.5 x TBE buffer, without re-circulation of the buffer, for 15-20 minutes at 8-10 V/cm.

DOCUMENTATION AND INTERPRETATION

Put the gel on a UV transilluminator and document by photography.
Record the presence and absence of specific PCR products. The relative lengths of the specific PCR products are helpful in the interpretation of the results.
Record the presence and relative lengths of the internal positive control bands. The differently sized control bands will help in the correct orientation of the typing as well as in kit identification.
Lanes without either control band or specific PCR products should be repeated.

Interpret the typings with the ***lot-specific Interpretation and Specificity Tables***.

INTERPRETATION SOFTWARE

The interpretation software (Product No. 110.101) can be helpful in the interpretation of the typings.

PCR MASTER MIXES

The PCR Master Mix complete with *Taq* contains:

Taq polymerase	0.4 unit per 10 µl SSP reaction
nucleotides	final concentration of each dNTP is 200 µM
PCR buffer	final concentrations: 50 mM KCl, 1.5 mM $MgCl_2$, 10 mM Tris-HCl pH 8.3, 0.001% w/v gelatin
glycerol	final concentration of glycerol is 5%
cresol red	final concentration of cresol red is 100 µg/ml

The same PCR Master Mix complete with *Taq* is used for all the licensed *Olerup* SSP kits.

The PCR Master Mix without *Taq* contains:

nucleotides	final concentration of each dNTP is 200 µM
PCR buffer	final concentrations: 50 mM KCl, 1.5 mM $MgCl_2$, 10 mM Tris-HCl pH 8.3, 0.001% w/v gelatin
glycerol	final concentration of glycerol is 5%
cresol red	final concentration of cresol red is 100 µg/ml

The same PCR Master Mix without *Taq* is used for all the unlicensed *Olerup* SSP kits.

The PCR Master Mix complete with *Taq* and the PCR Master Mix without *Taq* can be shipped at ambient temperature.
When stored at –20°C, the PCR Master Mix complete with *Taq* and the PCR Master Mix without *Taq* are stable for 24 months from the date of manufacture.
Vials with the PCR Master Mixes can be kept at +4°C for 4 weeks, but the PCR Master Mixes are then no longer stable for 24 months.

SPECIFICITY TABLE

DRB4 SSP subtyping

Specificities and sizes of the PCR products of the 12 primer mixes used for DRB4 SSP subtyping

Primer Mix	Approx. size of spec. PCR product[1]	Size of control band[2]	Amplified DRB4 alleles
1	185 bp	**515 bp**	01010101, 01030101, 01030102N, 010302, 010303, 010304, 0105, 0106, 0107
2	140 bp	430 bp	0102
3[3]	130 bp	430 bp	01010101, 0104[?], 0105[?], 0106, 0107[?], 0201N, 0301N
4	245 bp	**515 bp**	01010101, 0102, 01030101, 010302, 010303, 010304, 0104, 0105[?], 0106, 0107, 0201N
5[4]	150 bp	430 bp	01030102N
6	190 bp	430 bp	0104
7[4]	155 bp	430 bp	0102, 01030101, 01030102N, 010302, 010303, 010304, 0104[?], 0105[?], 0107[?]
8	290 bp	**515 bp**	01010101, 0104[?], 0105[?], 0106[?], 0107[?], 0201N[?], 0301N
9	155 bp	**515 bp**	0105
10	80 bp	**515 bp**	0201N
11	110 bp	430 bp	0106
12	210 bp	430 bp	0107

[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 DRB4 SSP subtypings.
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 bp or more. Size differences shorter than 20 bp are not given. For high resolution SSP kits the 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 band may sometimes be observed. Such bands can be disregarded and do not influence the interpretation of the SSP typings.
[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 tubes, or a band of 515 base pairs, for some tubes.
Tube 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 DRB4 subtyping.
In addition, tubes number 4, 8, 9 and 10 contain the primer pair giving rise to the longer, 515 bp, internal positive control band in order to allow kit identification.

PLEASE NOTE: All the SSP kits, except the B*37, B*41, B*42, B*46, B*47, B*48, B*49, B*50, B*53, B*67, B*78, B*81 and B*82 kits and the Cw*01, Cw*02, Cw*08, Cw*12,Cw*14, Cw*15, Cw*16, Cw*17 and Cw*18 kits, from *Olerup* SSP AB can be uniquely identified by the number of tubes and the kit-specific pattern of the two differently sized control bands.

In the presence of a specific amplification the intensity of the control band often decreases.
[3]Primer mix 3 may yield somewhat less specific PCR product than the other DRB4 primer mixes.
[4]The DRB1*150101 to DRB1*1522 and DRB1*160101 to DRB1*160502 and DRB1*1607 to DRB1*1611 alleles might be faintly amplified by primer mix 7.
'?' The nucleotide sequences of the 3rd exon of the DRB4*0104, DRB4*0105 and DRB4*0107 alleles are not yet available. Thus, it is not known whether the DRB4*0104, DRB4*0105 and DRB4*0107 alleles will be amplified by primer mix 3 or 7. The complete 2nd exon nucleotide sequence of the DRB4*0105 allele is not known. Thus, it is not known whether the DRB4*0105 allele will be amplified by primer mix 4 or not. Second intron sequences of the DRB4*0104 to DRB4*0107 and the DRB4*0201N alleles is not known. Thus, it is not known whether the these alleles will be amplified by primer mix 8 or not.

INTERPRETATION TABLE

DRB4 SSP subtyping

Amplification patterns of the DRB4 alleles

	Tube							
	1	**2**	**3**	**4**	**5**	**6**	**7** [8]	**8**
Length of spec.	**185**	**140**	**130**	**245**	**150**	**190**	**155**	**290**
PCR product								
Length of int.	**515**	**430**	**430**	**515**	**430**	**430**	**430**	**515**
pos. control[1]								
5'-primer(s)[2]	**28**	**42**	**105** [4]	**1st i**[5]	**1st i**[7]	**28**	**96**	**2nd i**[9]
	5'-g AT[3']	**5'-AgT**[3']	**5'-A AA**[3']	**5'-ggg**[3']	**5'-CAA**[3']	**5'-g AT**[3']	**5'-CAA**[3']	**5'-TgA**[3']
3'-primer(s)[3]	**76**	**76**	**135** [4]	**5** [6]	**42**	**77**	**135** [4]	**2nd i**[9]
	5'-T gT[3']	**5'-T gC**[3']	**5'-gCT**[3']	**5'-Tg C**[3']	**5'-TC A**[3']	**5'-A gT**[3']	**5'-gCC**[3']	**5'-TTC**[3']
Tube No.	**1**	**2**	**3**	**4**	**5**	**6**	**7** [8]	**8**
DRB4 allele								
***01010101**	+		+	+				+
***0102**		+		+			+	
***01030101, 010302-010304**	+			+			+	
***01030102N**[10]	+				+		+	
***0104**			?	+		+	?	?
***0105**	+		?	?			?	?
***0106**	+		+	+				?
***0107**	+		?	+			?	?
***0201N**			+	+				?
***0301N**			+					+
DRB4 allele								
Tube No.	**1**	**2**	**3**	**4**	**5**	**6**	**7** [8]	**8**

[1]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 tubes, or a band of 515 base pairs, for some tubes.
Tube 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 DRB4 subtyping.
In addition, tubes number 4, 8, 9 and 10 contain the primer pair giving rise to the longer, 515 bp, internal positive control band in order to allow kit identification.

[2]The codon, in the 2nd or 3rd exon unless otherwise noted, matching the specificity-determining 3'-end of the primer is given. Codon numbering as in *Tissue Antigens* 1998, **51:II**, 467-507. The sequence of the 3 terminal nucleotides of the primer is given. Empty spaces indicate codon boundaries.

[3]The codon, in the 2nd or 3rd exon unless otherwise noted, matching the specificity-determining 3'-end of the primer is given in the anti-sense direction. Codon numbering as in *Tissue Antigens* 1998, **51:II**, 467-507. The sequence of the 3 terminal nucleotides of the primer is given. Empty spaces indicate codon boundaries.

INTERPRETATION TABLE				
DRB4 SSP subtyping				
Amplification patterns of the DRB4 alleles				
Tube				
9	10	11	12	
155	80	110	210	Length of spec.
				PCR product
515	515	430	430	Length of int.
				pos. control[1]
42	28	112	28	5'-primer(s)[2]
5'-AgT3'	5'-g AT3'	5'-AC T3'	5'-g AT3'	
81	42	135 [4]	84	3'-primer(s)[3]
5'-gTg3'	5'-TC A3'	5'-gCT3'	5'-CCg3'	
9	10	11	12	Tube No.
				DRB4 allele
				*01010101
				*0102
				*01030101, 010302-010304
				*01030102N[10]
				*0104
+				*0105
		+		*0106
			+	*0107
	+			*0201N
				*0301N
				DRB4 allele
9	10	11	12	Tube No.

[4]Matching sequences within the 3rd exon.
[5]Matching sequences within the 1st intron.
[6]Matching sequences from the 3'-end of the 1st intron into the 5'-end of the 2nd exon.
[7]Matching the sequence of the 3'-end of the 1st intron.
[8]The DRB1*150101 to DRB1*1522 and DRB1*160101 to DRB1*1605 and DRB1*1607 to DRB1*1611 alleles might be faintly amplified by primer mix 7.
[9]Matching sequences within the 2nd intron.
[10]The DRB4*01010102N allele has been renamed to DRB4*01030102N.
'?' The nucleotide sequences of the 3rd exon of the DRB4*0104, DRB4*0105 and DRB4*0107 alleles are not yet available. Thus, it is not known whether the DRB4*0104, DRB4*0105 and DRB4*0107 alleles will be amplified by primer mix 3 or 7. The complete 2nd exon nucleotide sequence of the DRB4*0105 allele is not known. Thus, it is not known whether the DRB4*0105 allele will be amplified by primer mix 4 or not. Second intron sequences of the DRB4*0104 to DRB4*0107 and the DRB4*0201N alleles is not known. Thus, it is not known whether the these alleles will be amplified by primer mix 8 or not.

CELL LINE VALIDATION SHEET

DRB4 SSP kit

					Tube											
					1	2	3	4	5	6	7	8	9	10	11	12
				Prod. No.:	200735701	200735702	200735703	200735704	200735705	200735706	200735707	200735708	200735709	200735710	200735711	200735712
	cell line		DRB4													
1	9001	SA			-	-	-	-	-	-	-	-	-	-	-	-
2	9280	LK707	*0103		+	-	-	+	-	-	+	-	-	-	-	-
3	9011	E4181324			-	-	-	-	-	-	f	-	-	-	-	-
4	9275	GU373			-	-	-	-	-	-	-	-	-	-	-	-
5	9009	KAS011			-	-	-	-	-	-	f	-	-	-	-	-
6	9353	SM	*0103		+	-	-	+	-	-	+	-	-	-	-	-
7	9020	QBL			-	-	-	-	-	-	-	-	-	-	-	-
8	9007	DEM	*0103		+	-	-	+	-	-	+	-	-	-	-	-
9	9026	YAR	*0103		+	-	-	+	-	-	+	-	-	-	-	-
10	9107	LKT3	*0103		+	-	-	+	-	-	+	-	-	-	-	-
11	9051	PITOUT	*0101		+	-	+	+	-	-	-	+	-	-	-	-
12	9052	DBB	*0103N		+	-	-	-	+	-	+	-	-	-	-	-
13	9067	BTB			-	-	-	-	-	-	-	-	-	-	-	-
14	9071	OLGA			-	-	-	-	-	-	-	-	-	-	-	-
15	9075	DKB	*0103		+	-	-	+	-	-	+	-	-	-	-	-
16	9037	SWEIG007			-	-	-	-	-	-	-	-	-	-	-	-
17	9008	WILJON			-	-	-	-	-	-	f	-	-	-	-	-
18	9257	32367	*0101		+	-	+	+	-	-	-	+	-	-	-	-
19	9038	BM16			-	-	-	-	-	-	-	-	-	-	-	-
20	9059	SLE005			-	-	-	-	-	-	-	-	-	-	-	-
21	9064	AMALA			-	-	-	-	-	-	-	-	-	-	-	-
22	9056	KOSE			-	-	-	-	-	-	-	-	-	-	-	-
23	9124	IHL			-	-	-	-	-	-	-	-	-	-	-	-
24	9035	JBUSH			-	-	-	-	-	-	-	-	-	-	-	-
25	9049	IBW9	*0101		+	-	+	+	-	-	-	+	-	-	-	-
26	9285	WT49			-	-	-	-	-	-	-	-	-	-	-	-
27	9191	CH1007	*0103		+	-	-	+	-	-	+	-	-	-	-	-
28	9320	BEL5GB	*0101		+	-	+	+	-	-	+	+	-	-	-	-
29	9050	MOU	*0101		+	-	+	+	-	-	-	+	-	-	-	-
30	9021	RSH			-	-	-	-	-	-	-	-	-	-	-	-
31	9019	DUCAF			-	-	-	-	-	-	-	-	-	-	-	-
32	9297	HAG			-	-	-	-	-	-	-	-	-	-	-	-
33	9098	MT14B	*0103		+	-	-	+	-	-	+	-	-	-	-	-
34	9104	DHIF			-	-	-	-	-	-	-	-	-	-	-	-
35	9302	SSTO	*0103		+	-	-	+	-	-	+	-	-	-	-	-
36	9024	KT17	*0103		+	-	-	+	-	-	+	-	-	-	-	-
37	9065	HHKB			-	-	-	-	-	-	-	-	-	-	-	-
38	9099	LZL			-	-	-	-	-	-	-	-	-	-	-	-
39	9315	CML	*0102		-	+	-	+	-	-	+	-	-	-	-	-
40	9134	WHONP199	*0103		+	-	-	+	-	-	+	-	-	-	-	-
41	9055	H0301			-	-	-	-	-	-	-	-	-	-	-	-
42	9066	TAB089			-	-	-	-	-	-	-	-	-	-	-	-
43	9076	T7526	*0103		+	-	-	+	-	-	+	-	-	-	-	-
44	9057	TEM			-	-	-	-	-	-	-	-	-	-	-	-
45	9239	SHJO	*0101	*0103	+	-	+	+	-	-	+	+	-	-	-	-
46	9013	SCHU			-	-	-	-	-	-	f	-	-	-	-	-
47	9045	TUBO			-	-	-	-	-	-	-	-	-	-	-	-
48	9303	TER-ND			-	-	-	-	-	-	-	-	-	-	-	-

CERTIFICATE OF ANALYSIS

Olerup SSP™ DRB4 SSP

Product number: **101.122-24/06 – licensed for PCR**
101.122-24u/06u – not licensed for PCR
Lot number: **Y01**
Expiry date: **2009-June-01**
Number of tests: **24 test – Product No. 101.122-24**
6 tests – Product No. 101.122-06
Number of tubes per test: **12**

Tube specifications:

Tube No.	Production No.	Tube No.	Production No.
1	2007-357-01	9	2007-357-09
2	2007-357-02	10	2007-357-10
3	2007-357-03	11	2007-357-11
4	2007-357-04	12	2007-357-12
5	2007-357-07		
6	2007-357-06		
7	2007-357-07		
8	2007-357-08		

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

No DNAs carrying the alleles to be amplified by primer solutions No. 6 and 9 to 12 were available. The specificities of the primers in primer solutions 6 and 9 were tested by separately adding one additional 5'-primer, respectively, one additional 3'-primer. In primer solutions 10 and 11 it was only possible to test the 3'-primers, the 5'-primers were not possible to test. In primer solution 12 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: 2007-August-29

Approved by:

Quality Control, Supervisor

Declaration of Conformity

Product name: *Olerup* SSP™ DRB4
Product number: 101.122-24/06, 101.122-24u/06u
Lot number: Y01

Intended use: DRB4 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 and ISO 13485:2003, following the provisions of the 98/79/EC Directive on *in vitro* diagnostic medical devices, Annex II List B, conformity assessed using Annex IV, as transposed into the national laws of the Member States of the European Union.

The Technical Documentation 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.

Notified Body: Lloyd's Register Quality Assurance Limited, Hiramford, Middlemarch Office Village, Siskin Drive, Coventry CV3 4FJ, United Kingdom. (Notified Body number: 0088.)

Saltsjöbaden, Sweden
2007-August-29

Olle Olerup

WARRANTY

Olerup SSP AB warrants its products to the original purchaser against defects in materials and workmanship under normal use and application. *Olerup* SSP AB's sole obligation under this warranty shall be to replace, at no charge, any product that does not meet the performance standards stated on the product specification sheet.

This warranty applies only to products that have been handled and stored in accordance with *Olerup* SSP AB's recommendations, and does not apply to products that have been the subject of alternation, misuse, or abuse.

All claims under this warranty must be directed to *Olerup* SSP AB in writing and must be accompanied by a copy of the purchaser's invoice. This warranty is in lieu of all other warranties, expressed or implied, including the warranties of merchantability and fitness for a particular purpose. In no case shall *Olerup* SSP AB be liable for incidental or consequential damages.

This product may not be reformulated, repacked or resold in any form without the written consent of *Olerup* SSP AB, Hasselstigen 1, SE-133 33 Saltsjöbaden, Sweden.

Handle all samples as if capable of transmitting disease. All work should be performed wearing gloves and appropriate protection.

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