

Olerup SSP[®] HLA-B*49

Product number:	101.547-06 – including <i>Taq</i> polymerase
Lot number:	64F
Expiry date:	2011-February-01
Number of tests:	6
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. 64F.

CHANGES COMPARED TO THE PREVIOUS *OLERUP SSP[®]* HLA-B*49 LOT.

The HLA-B*49 specificity and interpretation tables have been updated for the HLA-B alleles described since the previous *Olerup SSP[®]* HLA-B*49 lot was made (**Lot No. 17E**).

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

Well	5'-primer	3'-primer	rationale
2	Modified	-	Increases specificity of specific primer pair.
4	Modified	-	Increases specificity of specific primer pair.
8	New	New	New primer pair for the B*4905 allele.

PRODUCT DESCRIPTION

HLA-B*49 SSP typing

CONTENT

The primer set contains 5'- and 3'-primers for identifying the B*4901 to B*4905 alleles.

PLATE LAYOUT

Each HLA-B*49 test consists of 8 PCR reactions in an 8 well cut PCR plate.

1	2	3	4	5	6	7	8
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The 8 well PCR plate is marked with 'B49' in silver/gray ink.

Well No. 1 is marked with the Lot No. '64F'.

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 sealed. Use a scalpel or a similar instrument to carefully cut the foil between the plates.

INTERPRETATION

The interpretation of HLA-B*49 SSP subtypings will be influenced by the B*0809, most B*13, several B*15, two B*18, two B*27, two B*35, the B*3710, five B*39, several B*40, four B*41, the B*4204, most B*44, nine B*45, two B*46, the B*4704, three B*50, most B*51, several B*52, several B*54, most B*55, several B*56, the B*5808, four B*59, the B*7301 and seven B*78 alleles when present on the other haplotype.

UNIQUELY IDENTIFIED ALLELES

All the HLA-B*49, i.e. **B*4901 to B*4905**, recognized by the HLA Nomenclature Committee in January 2009¹ will be amplified by the primers in the HLA-B*49 SSP kit.

¹HLA-B alleles listed on the IMGT/HLA web page 2009-January-16, release 2.24.0, www.ebi.ac.uk/imgt/hla.

RESOLUTION IN HOMO- AND HETEROZYGOTES

The five HLA-B*49 alleles can be combined in 15 homozygous and heterozygous combinations. Two of these genotypes do not give rise to unique amplification patterns.

+-----+ 4904,4905 = 4905,4905

4901 = 490101 and 490102

SPECIFICITY TABLE

HLA-B*49 SSP subtyping

Specificities and sizes of the PCR products of the 8 primer mixes used for HLA-B*49 SSP subtyping

Primer Mix	Size of spec. PCR product ¹	Size of control band ²	Amplified HLA-B*49 alleles	Other amplified HLA-B alleles ³
1	145 bp	800 bp	490101-490102, 4904, 4905	4013, 4019, 4418, 4425, 4450
2	255 bp	1070 bp	4902	1323, 1809, 2701, 3710, 4047, 4415, 4455
3	145bp	1070 bp	4902	4047, 44020101-4405, 4407, 4410, 4412-4417, 4419N-4424, 4426-4439, 4441-4443, 4445, 4447-4449, 4451-4456N, 4458N, 4459, 4461N-4465, 4704
4	170 bp	1070 bp	4903	1804, 4058, 4434, 5107, 520102, 520104-5203, 5209
5⁴	105 bp	1070 bp	490101-4903	130201-1303, 1308Q, 1309, 1314-1316, 1318, 1319, 1542, 3560, 4415, 4418, 4501, 4503-4508, 4611, 4618, 5001, 5002, 5004, 5115, 5401-5403, 5405N, 5407, 5408N, 5410, 5412, 5413, 5416, 5417, 550101-5503, 5505, 5507, 5509-5512, 5515, 5516, 5518, 5519, 5521, 5522, 5524-5526, 5529-5531, 5533, 5534, 5601, 5607, 5608, 5613, 5614, 5616, 5617, 5619N, 5620, 5623, 5624, 5901, 5904
6	160 bp	1070 bp	490101-4903	1301-1303, 1306-1309, 1311, 1312, 1314-1317, 1319, 1320, 1322, 1323, 1542, 1586, 3560, 3917, 4048, 4071, 4410, 4611, 4618, 5001, 5002, 5004,

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				5115, 5162, 5401-5403, 5405N, 5407, 5408N, 5412, 5413, 5416, 5417, 550101-5503, 5505, 5507, 5510-5512, 5515, 5516, 5518, 5519, 5522, 5524-5526, 5529-5531, 5533, 5534, 5601, 5602, 5604, 5607, 5608, 5610, 5614, 5616, 5617, 5619N, 5620, 5623, 5624, 5901, 5904
7⁴	105 bp	1070 bp	4904, 4905	1304, 1504, 1516, 1567, 1595, 9537, 3537, 390601-390602, 3933, 3934, 4086, 4502, 4509, 511301-511302, 5137, 5163, 5214, 5414, 5513, 5523, 5532, 5622, 5903, 7301
8⁴	70 bp	1070 bp	4905	0809, 130201-1304, 1308Q, 1309, 1314-1316, 1318, 1319, 1504, 1516, 1542, 1567, 1583, 1595, 9537, 2714, 3560, 390601-390602, 3933, 3934, 40060101-400602, 4044, 4053, 4070, 4075, 4083, 4086, 4093, 4101, 4105-4107, 4204, 4420, 4447, 4611, 4618, 510101-5103, 5105, 5107-5116, 5119-512402, 5126-5141N, 5143, 5144N, 5148-5155, 5157, 5158, 5160, 5161, 5163, 520101-5214, 5401-5405N, 5407, 5408N, 5410-5414, 5416, 5417, 550101-5503, 5505, 5507, 5509-5513, 5515-5526, 5528-5534, 5601, 560501-5608, 5613-5617, 5619N-5624, 5808, 5901-5904, 7301, 7801-7806

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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 HLA-B*49 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.

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 1070 base pairs, for most wells, or a band of 800 base pairs, for some wells.

Well number 1 contains the primer pair giving rise to the shorter, 800 bp, internal positive control band in order to help in the correct orientation of the HLA-B*49 SSP subtyping.

In the presence of a specific amplification the intensity of the control band often decreases.

³Due to the sharing of sequence motifs between HLA-B alleles some non-HLA-B*49 alleles will be amplified by primer mixes 1 to 8.

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

HLA-B*49 SSP subtyping								
Amplification patterns of the B*4901 to B*4905 alleles								
	Well							
	1	2	3	4	5	6	7	8
Length of spec.	145	255	145	170	105	160	105	70
PCR product								
Length of int.	800	1070	1070	1070	1070	1070	1070	1070
pos. control¹								
5'-primer²	206	97	206	141	357	420	357	357
	5'-gAA ³	5'-TCC ³	5'-gAA ³	5'-ATT ³	5'-Tgg ³	5'-TTA ³	5'-Tgg ³	5'-Tgg ³
3'-primer(s)³	309	309	309	272	420	538	419	387
	5'-ATC ³	5'-gTg ³	5'-gTg ³	5'-Tgg ³	5'-gCT ³	5'-CAg ³	5'-Cgg ³	5'-TCC ³
							419	
							5'-CgA ³	
Well No.	1	2	3	4	5	6	7	8
HLA-B allele								
*490101-490102	1				5	6		
*4902		2	3		5	6		
*4903				4	5	6		
*4904	1						7	
*4905	1						7	8
*0809, 1583, 2714, 44400601-400602, 4044, 4053, 4070, 4075, 4083, 4093, 4101, 4105-4107, 4204, 510101-5103, 5105, 5108-5112, 5114, 5116, 5119-512402, 5126-5136, 5138-5141N, 5143, 5144N, 5148-5155, 5157, 5158, 5160, 5161, 520101, 520103, 5204-5208, 5210-5213, 5404, 5411, 5517, 5520, 5528, 560501-5606, 5615, 5621, 5808, 5902, 7801-7806								8
*1301, 1306, 1307N, 1311, 1312, 1317, 1320, 1322, 1586, 3917, 4048, 4071, 5162, 5602, 5604, 5610						6		
Well No.	1	2	3	4	5	6	7	8

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Lot-specific information

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Length of spec.	145	255	145	170	105	160	105	70
PCR product								
Well No.	1	2	3	4	5	6	7	8
*130201-1303, 1308Q, 1309, 1314-1316, 1319, 1542, 3560, 4611, 4618, 5115, 5401-5403, 5405N, 5407, 5408N, 5412, 5413, 5416, 5417, 550101-5503, 5505, 5507, 5510-5512, 5515, 5516, 5518, 5519, 5522, 5524-5526, 5529-5531, 5533, 5534, 5601, 5607, 5608, 5614, 5616, 5617, 5619N, 5620, 5623, 5624, 5901, 5904					5	6		8
*1304, 1504, 1516, 1567, 1595, 9537, 390601-390602, 3933, 3934, 4086, 511301-511302, 5137, 5163, 5214, 5414, 5513, 5523, 5532, 5622, 5903, 7301							7	8
*1318, 5410, 5509, 5521, 5613					5			8
*1323		2				6		
*1804, 4058				4				
*1809, 2701, 3710		2						
*3537, 4502, 4509							7	
*4013, 4019, 4425, 4450	1							
*4047, 4455		2	3					
*44020101-4405, 4407, 4412-4414, 4416, 4417, 4419N, 4421-4424, 4426-4433, 4435-4439, 4441-4443, 4445, 4448, 4449, 4451-4454, 4456N, 4458N, 4459, 44601N-4465, 4704			3					
*4410			3			6		
*4415		2	3		5			8
*4418	1				5			
*4420, 4447			3					8
*4434			3	4				
*4501, 4503-4508					5			
*5001, 5002, 5004					5	6		8
*520102, 520104-5203, 5209				4				8
HLA-B allele								
Well No.	1	2	3	4	5	6	7	8

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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 1070 base pairs, for most wells, or a band of 800 base pairs, for some wells.

Well number 1 contains the primer pair giving rise to the shorter, 800 bp, internal positive control band in order to help in the correct orientation of the HLA-B*49 SSP subtyping.

²The nucleotide position, in the 2nd or 3rd exon, matching the specificity-determining 3'-end of the primer is given. 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 nucleotide position, in the 2nd or 3rd exon, matching the specificity-determining 3'-end of the primer is given in the anti-sense direction. 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.

CELL LINE VALIDATION SHEET											
HLA-B*49 SSP primer set											
				Well							
				1	2	3	4	5	6	7	8
				200731801	200956902	200731803	200956904	200731805	200956906	200731807	200956908
				Prod. No.:							
				IHWC cell line	B*						
1	9001	SA	*0702	-	-	-	-	-	-	-	-
2	9002	MZ0707082	*1402	-	-	-	-	-	-	-	+
3	9011	E4181324	*52011	-	-	-	-	-	-	-	+
4	9010	AMAI	*5301	-	-	-	-	-	-	-	-
5	9009	KAS011	*3701	-	-	-	-	-	-	-	-
6	9016	RML	*5101	-	-	-	-	-	-	-	+
7	9020	QBL	*1801	-	-	-	-	-	-	-	-
8	9025	DEU	*3501	-	-	-	-	-	-	-	-
9	9026	YAR	*3801	-	-	-	-	-	-	-	-
10	9107	LKT3	*5401	-	-	-	-	+	+	-	+
11	9051	PITOUT	*44031	-	-	+	-	-	-	-	-
12	9052	DBB	*5701	-	-	-	-	-	-	-	-
13	9004	JESTHOM	*2705	-	-	-	-	-	-	-	-
14	9071	OLGA	*1501	*1520	-	-	-	-	-	-	-
15	9075	DKB	*4001	-	-	-	-	-	-	-	-
16	9036	SPO010	*4402	-	-	+	-	-	-	-	-
17	9282	CTM3953540	*0801	*5501	-	-	-	+	+	-	+
18	9089	BOB	*5101	-	-	-	-	-	-	-	+
19	9038	BM16	*1801	-	-	-	-	-	-	-	-
20	9059	SLE005	*4001	-	-	-	-	-	-	-	-
21	9064	AMALA	*1501	-	-	-	-	-	-	-	-
22	9056	KOSE	*3503	-	-	-	-	-	-	-	-
23	9061	31227ABO	*1801	-	-	-	-	-	-	-	-
24	9035	JBUSH	*3801	-	-	-	-	-	-	-	-
25	9049	IBW9	*1402	-	-	-	-	-	-	-	-
26	9285	WT49	*5801	-	-	-	-	-	-	-	-
27		MAM	*1402	*44	-	-	+	-	-	-	+
28	9320	BEL5GB	*44	-	-	+	-	-	-	-	-
29	9050	MOU	*44031	-	-	+	-	-	-	-	-
30	9021	RSH	*4201	-	-	-	-	-	-	-	-
31	9019	DUCAF	*1801	-	-	-	-	-	-	-	-
32	9297	HAG	*4102	-	-	-	-	-	-	-	-
33	9098	MT14B	*4001	-	-	-	-	-	-	-	-
34	9104	DHIF	*38	-	-	-	-	-	-	-	-
35	9302	SSTO	*44	-	-	+	-	-	-	-	-
36	9024	KT17	*1501	*3501	-	-	-	-	-	-	-
37	9065	HHKB	*0702	-	-	-	-	-	-	-	-
38	9099	LZL	*1501	-	-	-	-	-	-	-	-
39	9315	CML	*08	*2705	-	-	-	-	-	-	-
40	9134	WHONP	*1302	*4601	-	-	-	-	+	-	+
41	9055	H0301	*1402	-	-	-	-	-	-	-	-
42	9066	TAB089	*4601	-	-	-	-	-	-	-	-
43	9076	T7526	*4601	-	-	-	-	-	-	-	-
44	9057	TEM	*3801	-	-	-	-	-	-	-	-
45	9058	OMV	*4501	-	-	-	-	+	-	-	-
46	9013	SCHU	*0702	-	-	-	-	-	-	-	-
47	9045	TUBO	*5101	-	-	-	-	-	-	-	+
48	9303	TER-ND	*3501	*44	-	-	+	-	-	-	-

CERTIFICATE OF ANALYSIS

Olerup SSP[®] HLA-B*49 SSP

Product number: 101.547-06 – including *Taq* polymerase
Lot number: 64F
Expiry date: 2011-February-01
Number of tests: 6
Number of wells per test: 8

Well specifications:

Well No.	Production No.
1	2007-318-01
2	2009-569-02
3	2007-318-03
4	2009-569-04
5	2007-318-05
6	2009-569-06
7	2007-318-07
8	2009-569-08

The specificity of each primer solution of the HLA-B*49 primer set has been tested against 48 well characterized IHWC cell line DNAs.

No DNAs carrying the alleles to be amplified by primer solutions 2 and 4 were available. The specificities of the primers in primer solutions 2 and 4 were tested by separately adding one additional 3'-primer, respectively one additional 5'-primer.

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

Date of approval: 2009-May-27

Approved by:

Quality Control, Supervisor

Declaration of Conformity

Product name: *Olerup* SSP[®] HLA-B*49
Product number: 101.547-06
Lot number: 64F

Intended use: HLA-B*49 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
2009-May-27

Olle Olerup
Managing Director

Lot No.: **64F**

Lot-specific information

www.olerup.com

ADDRESSES:

Manufacturer:

Olerup SSP AB, Hasselstigen 1, SE-133 33 Saltsjöbaden, Sweden.

Tel: +46-8-717 88 27

Fax: +46-8-717 88 18

E-mail: info-ssp@olerup.com

Web page: <http://www.olerup.com>

Distributed by:

Olerup GmbH, Löwengasse 47 / 6, AT-1030 Vienna, Austria.

Tel: +43-1-710 15 00

Fax: +43-1-710 15 00 10

E-mail: support-at@olerup.com

Web page: <http://www.olerup.com>

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**.