

***Olerup SSP*[®] HLA-B*14**

Product number:	101.524-12 – including <i>Taq</i> polymerase
Lot number:	46E
Expiry date:	2010-May-01
Number of tests:	12
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. 46E.

CHANGES COMPARED TO THE PREVIOUS *OLERUP SSP*[®] HLA-B*14 Lot

The HLA-B*14 specificity and interpretation tables have been updated for the HLA-B alleles described since the previous *Olerup SSP*[®] HLA-B*14 lot was made (Lot No. X62).

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	-	Increased specificity of specific primer pair.
4	-	Modified	Increased specificity of specific primer pair.
8	-	Modified	Decreased tendency of primer dimer formation.

PRODUCT DESCRIPTION

HLA-B*14 SSP subtyping

CONTENT

The primer set contains 5'- and 3'-primers for identifying the HLA-B*1401 to B*1408 alleles.

PLATE LAYOUT

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

1	2	3	4	5	6	7	8
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The 8 well cut PCR plate is marked with 'B*14'.

Well No. 1 is marked with the Lot No. '46E'.

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

The interpretation of HLA-B*14 SSP subtypings will be influenced by most B*07, four B*15, most B*18, seven B*27, three B*35, two B*37, most B*38, most B*39, many B*40, the B*42, the B*48, three B*51, the B*5402, B*5510, the B*67, the B*7301 and B*81 alleles when present on the other haplotype. In addition, the Cw*0808 allele will be amplified by primer mix 6.

UNIQUELY IDENTIFIED ALLELES

All the HLA-B*14 alleles, i.e. **B*1401 to B*1408**, recognized by the HLA Nomenclature Committee in April 2008¹ will give rise to unique amplification patterns by the primers in the HLA-B*14 subtyping kit².

The HLA-B*14 primer set cannot distinguish the B*140201 and B*140202 alleles or the B*140601 and B*140602 alleles.

¹HLA-B alleles listed on the IMGT/HLA web page 2008-April-08, release 2.21.0, www.ebi.ac.uk/imgt/hla.

²The B*1408, B*3932 and B*3943 alleles will give rise to identical amplification patterns with the HLA-B*14 subtyping kit. The B*1408 allele can be distinguished from the B*3932 and B*3943 alleles by the HLA-B*39 subtyping kit.

RESOLUTION IN HOMO- AND HETEROZYGOTES

The 8 HLA-B*14 alleles can be combined in 36 homozygous and heterozygous combinations. Thirteen of these genotypes did not give rise to different amplification patterns. The different sizes of the specific PCR products generated by primer mix 5 were not considered in these calculations.

+++--++	1404, 1408 = 1406, 1407N
+++--++	1401, 1404 = 1402, 1407N = 1404, 1407N
+++--++	1401, 1406 = 1402, 1408
++--++	1401, 1407N = 1407N, 1407N
+--+--	1402, 1403 = 1403, 1403
+--+--	1402, 1404 = 1404, 1404

SPECIFICITY TABLE

HLA-B*14 SSP subtyping

Specificities and sizes of the PCR products of the 8 primer mixes used for HLA-B*14 SSP subtyping

Primer Mix	Size of spec. PCR product ¹	Size of control band ²	Amplified HLA-B*14 alleles	Other amplified HLA Class I alleles ³
1	265 bp	800 bp	1401-1404, 1407N	
2⁴	185 bp	1070 bp	1401, 1407N, 1408	380101-3803, 3807-3817, 39010101-39010102L, 390103-390201, 3903, 3905-390602, 3907 [?] , 3908, 3909, 3911, 3914, 3915, 3918, 391902, 3922, 3924-3930, 3932-3943, 670101
3⁴	185 bp	800 bp	140201-1403, 1404 ^{weakly} , 1405-140602	3526, 3805, 3904, 3907 [?]
4⁵	85 bp	1070 bp	1403	1813, 5129
5⁶	130, 220 bp	1070 bp	1404, 1407N	3940N
6⁵	95 bp	1070 bp	1405	3903, 3924, 3937, 4206, 4807, Cw*0808
7	260 bp	1070 bp	140601-140602, 1408	1537, 1538, 180101-180103, 1803-1809, 1812, 1813, 1815, 1817N-1820, 1823N-1826, 1828, 1829, 3932, 3943, 4051, 5106, 5145
8	250 bp	1070 bp	1401, 1407N, 1408	070201-0726, 0728, 0730-0737, 0739-0764, 1568, 1571, 180101-1803, 1805-1808, 1810-1815, 1817N-1824, 1826-1829, 2708, 2712, 2718, 2726, 2733, 2740, 2742, 3550, 3584, 3705, 3711, 39010101-39010102L, 390103-3903, 3905-390602, 3907 [?] , 3908-3911, 391301-3920,

3922-3943, 400201-
400602, 4008, 4009,
4011, 4018, 4020, 4024,
4026-4029, 4035, 4037,
4039, 4040, 4044, 4050,
4056, 4057, 4064, 4068,
4070, 4071, 4074, 4075,
4078, 4082, 4083, 4085,
4086, 4201, 4202, 4204-
4209, 480101-4817,
4819, 5402, 5510,
670101-6702, 7301,
8101-8104N

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*14 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*14 subtyping.

In addition, well number 3 contains the primer pair giving rise to the shorter, 800 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.

³Due to the sharing of sequence motifs between HLA-B alleles some non-HLA-B*14 alleles will be amplified by primer mixes 2 to 8. In addition, the Cw*0808 allele will be amplified by primer mix 6.

The B*1408, B*3932 and B*3943 alleles will give rise to identical amplification patterns with the HLA-B*14 subtyping kit. The B*1408 allele can be distinguished from the B*3932 and B*3943 alleles by the HLA-B*39 subtyping kit.

⁴Primer mix 2 and 3 might yield less specific PCR product than the other HLA-B*14 primer mixes.

⁵Short specific PCR fragments are less intense and not as sharp as longer specific bands.

⁶Primer mix 5: Specific PCR fragment of 130 bp in the B*1407N and B*3940N alleles. Specific PCR fragment of 220 bp in the B*1404 allele.

INTERPRETATION TABLE

HLA-B*14 SSP subtyping

Amplification patterns of the B*1401 to B*1408 alleles

	Well ⁴							
	1	2	3	4	5	6	7	8
Length of spec.	265	185	185	85	130	95	260	250
PCR product					220			
Length of int.	800	1070	800	1070	1070	1070	1070	1070
pos. control ¹								
5'-primer(s) ²	361 5'-AgT ³	103 5'-CCT ³	103 5'-CCg ³	539 5'-gCg ³	91 5'-ggC ³	363 5'-AgC ³	363 5'-Agg ³	103 5'-CCT ³
					564 5'-TgA ³			
3'-prime(s) ³	583 5'-gTg ³	246 5'-TAT ³	246 5'-TAT ³	583 5'-gTg ³	269 5'-AgT ³	419 5'-CgA ³	583 5'-gTg ³	311 5'-ggT ³
					3 rd I 5'-TAT ³			
Well No.	1	2	3	4	5	6	7	8
HLA-B allele								
*1401	1	2						8
*140201-140202	1		3					
*1403	1		3	4				
*1404	1		w		5			
*1405			3			6		
*140601-140602			3				7	
*1407N	1	2			5			8
*1408, 3932, 3943 ⁵		2					7	8
*070201-0726, 0728, 0730-0735, 0737, 0739-0764, 1568, 1571, 1802, 1810, 1811, 1814, 1821, 1822, 1827, 2708, 2712, 2718, 2726, 2733, 2740, 2742, 3550, 3584, 3705, 3711, 390202, 3910, 391301-391302, 3916, 3917, 391901, 3920, 3923, 3931, 400201-400602, 4008, 4009, 4011, 4018, 4020, 4024, 4026-4029, 4035, 4037, 4039, 4040, 4044, 4050, 4056, 4057, 4064, 4068, 4070, 4071, 4074, 4075, 4078, 4082, 4083, 4085, 4086, 4201, 4202, 4204-420502, 4207-4209, 480101-4806, 4808-4817, 4019, 5402, 5510, 670102, 6702, 7301, 8101-8104N								8
Well No.	1	2	3	4	5	6	7	8

Length of spec.	265	185	185	85	130	95	260	250
PCR product					220			
Well No.	1	2	3	4	5	6	7	8
*1537, 1538, 1804, 1809, 1825, 4051, 5106, 5145							7	
*180101-180103, 1803, 1805-1808, 1812, 1815, 1817N-1820, 1823N, 1824, 1826, 1828, 1829							7	8
*1813				4			7	8
*3526, 3805, 3904			3					
*380101-3803, 3807-3817		2						
*39010101-39010102L, 390103-390201, 3905-390602, 3908, 3909, 3911, 3914, 3915, 3918, 391902, 3922, 3925N-3930, 3933-3936, 3938Q, 3939, 3941, 3942, 670101		2						8
*3903, 3924, 3937		2				6		8
*3907		?	?					?
*3940N		2			5			8
*4206, 4807						6		8
*5129				4				
HLA-B allele								
Well No.	1	2	3	4	5	6	7	8
Cw*0808						6		
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 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*14 subtyping.

In addition, well number 3 contains the primer pair giving rise to the shorter, 800 bp, internal positive control band in order to allow kit identification.

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 or 3rd intron, 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.

⁴Primer mix 5: Specific PCR fragment of 130 bp in the B*1407N and B*3940N alleles. Specific PCR fragment of 220 bp in the B*1404 allele.

⁵The B*1408, B*3932 and B*3943 alleles will give rise to identical amplification patterns with the HLA-B*14 subtyping kit. The B*1408 allele can be distinguished from the B*3932 and B*3943 alleles by the HLA-B*39 subtyping kit.

'w', might be weakly amplified.

'?', nucleotide sequence of the primer matching sequence is not known.

CELL LINE VALIDATION SHEET									
HLA-B*14 SSP subtyping kit									
						Well			
						1	2	3	4
					Prod. No.:	200732301	20084502	200732303	200845002
						200732305	200732306	200732307	200845002
	IHWC cell line		B*						
1	9001 SA		*0702			-	-	-	+
2	9280 LK707		*5201	*7301		-	-	-	+
3	9011 E4181324		*52011			-	-	-	-
4	9275 GU373		*1510	*5301		-	-	-	-
5	9009 KAS011		*3701			-	-	-	-
6	9353 SM		*3901	*5101		-	-	-	+
7	9020 QBL		*1801			-	-	-	+
8	9007 DEM		*5701			-	-	-	-
9	9026 YAR		*3801			-	+	-	-
10	9107 LKT3		*5401			-	-	-	-
11	9051 PITOUT		*4403			-	-	-	-
12	9052 DBB		*5701			-	-	-	-
13	9067 BTB		*2705			-	-	-	-
14	9071 OLGA		*1501	*1520		-	-	-	-
15	9075 DKB		*4001			-	-	-	-
16	9037 SWEIG007		*4002			-	-	-	+
17	9008 WILJON		*1801			-	-	-	+
18	9257 32367		*1401	*5601		+	+	-	+
19	9038 BM16		*1801			-	-	-	+
20	9059 SLE005		*4001			-	-	-	-
21	9064 AMALA		*1501			-	-	-	-
22	9056 KOSE		*3503			-	-	-	-
23	9124 IHL		*4002	*5602		-	-	-	+
24	9035 JBUSH		*3801			-	+	-	-
25	9049 IBW9		*1402			+	-	+	-
26	9285 WT49		*5801			-	-	-	-
27	9191 CH1007		*0705	*5101		-	-	-	+
28	9320 BEL5GB		*4402	*4403		-	-	-	-
29	9050 MOU		*4403			-	-	-	-
30	9021 RSH		*4201			-	-	-	+
31	9019 DUCAF		*1801			-	-	-	+
32	9297 HAG		*4102			-	-	-	-
33	9098 MT14B		*4001			-	-	-	-
34	9104 DHIF		*3801			-	+	-	-
35	9302 SSTS		*4402			-	-	-	-
36	9024 KT17		*1501	*3501		-	-	-	-
37	9065 HHKB		*0702			-	-	-	+
38	9099 LZL		*1501			-	-	-	-
39	9315 CML		*0801	*2705		-	-	-	-
40	9134 WHONP199		*1302	*4601		-	-	-	-
41	9055 H0301		*1402			+	-	+	-
42	9066 TAB089		*4601			-	-	-	-
43	9076 T7526		*4601			-	-	-	-
44	9057 TEM		*3801			-	+	-	-
45	9239 SHJO		*4201	*5001		-	-	-	+
46	9013 SCHU		*0702			-	-	-	+
47	9045 TUBO		*5101			-	-	-	-
48	9303 TER-ND		*3501	*4403		-	-	-	-

CERTIFICATE OF ANALYSIS

Olerup SSP[®] HLA-B*14 SSP

Product number: 101.524-12 – including *Taq* polymerase
Lot number: 46E
Expiry date: 2010-May-01
Number of tests: 12
Number of wells per test: 8

Well specifications:

Well No.	Production No.
1	2007-323-01
2	2008-450-02
3	2007-323-03
4	2008-450-04
5	2007-323-05
6	2007-323-06
7	2007-323-07
8	2008-450-08

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 solution 4 were available. The specificities of the primers in primer solution 4 were tested by separately adding one additional 5'-primer, respectively one additional 3'-primer.

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

Date of approval: 2009-May-26

Approved by:

Quality Control, Supervisor

Lot No.: **46E**

Lot-specific information

www.olerup.com

Declaration of Conformity

Product name: *Olerup* SSP® HLA-B*14
Product number: 101.524-12
Lot number: 46E

Intended use: HLA-B*14 high resolution histocompatibility testing

Manufacturer: *Olerup* SSP AB
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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 9001:2000 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-26

Olle Olerup
Managing Director

Lot No.: **46E**

Lot-specific information

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