

101.629-06 – including *Taq* polymerase, IFU-01
 101.629-06u – without *Taq* polymerase, IFU-02

Visit www.olerup-ssp.com for
 “Instructions for Use” (IFU)

Lot No.: **83S**

Lot-specific information

Olerup SSP[®] HLA-C*18

Product number:	101.629-06 – including <i>Taq</i> polymerase 101.629-06u – without <i>Taq</i> polymerase
Lot number:	83S
Expiry date:	2016-March-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. 83S.

CHANGES COMPARED TO THE PREVIOUS OLERUP SSP[®] HLA-C*18 Lot (82N)

The HLA-C*18 kit is updated for new alleles to enable separation of:

- Confirmed¹ alleles as listed in the IMGT/HLA database
- Polymorphisms in exons outside of the region encoding the peptide binding domain
- Null and Alternatively expressed alleles

One well have been added to the HLA-C*18 kit, well **8**.

The Lot-specific information for HLA-C*18 including and without *Taq* polymerase is now described in one common Product Insert.

¹As described in section Uniquely Identified Alleles.

The HLA-C*18 specificity and interpretation tables have been updated for the HLA-C alleles described since the previous *Olerup SSP[®]* HLA-C*18 lot was made (**Lot No. 82N**).

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

Well	5'-primer	3'-primer	rationale
7	Added	-	5'-primer added for the C*18:07N allele.
8	New	New	New primer pair for the C*18:06 allele

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PRODUCT DESCRIPTION

HLA-C*18 SSP typing

CONTENT

The primer set contains 5'- and 3'-primers for identifying the C*18:01 to C*18:07N alleles.

PLATE LAYOUT

Each HLA-C*18 test consists of 8 PCR reactions in an 8 well cut PCR plate.

1	2	3	4	5	6	7	8
---	---	---	---	---	---	---	---

The 8 well PCR plate is marked with 'C18' in silver/gray ink.

Well No. 1 is marked with the Lot No. '83S'.

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 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-C*18 SSP subtypings will be influenced by the C*02:22, three C*03, the C*04, three C*05, three C*06, the C*07, three C*08 and the C*12:31 alleles, when present on the other haplotype. In addition, the B*15:137 allele will be amplified by primer mix 5.

UNIQUELY IDENTIFIED ALLELES

All the HLA-C*18 alleles, i.e. **C*18:01 to C*18:07N**, recognized by the HLA Nomenclature Committee in July 2013¹ will be amplified by the primers in the HLA-C*18 SSP kit.

The HLA-C*18 kit enables separation of the confirmed HLA-C*18 alleles as listed in the IMGT/HLA database. An HLA allele is listed as confirmed by IMGT/HLA if it has been sequenced by more than a single laboratory or from multiple sources. Current allele confirmation status for HLA-C*18 alleles is listed below.

The HLA-C*18 kit also enables identification of polymorphisms in exons outside of the region encoding the peptide binding domain and of null and alternatively expressed alleles

¹HLA-C alleles listed on the IMGT/HLA web page 2013-July-25, release 3.13.1, www.ebi.ac.uk/imgt/hla.

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ALLELE CONFIRMATION STATUS

Allele	Status ¹
C*18:01	Confirmed
C*18:02	Unconfirmed
C*18:03	Confirmed
C*18:04	Confirmed
C*18:05	Unconfirmed
C*18:06	Unconfirmed
C*18:07N	Unconfirmed

¹Allele status “confirmed” or “unconfirmed” as listed on the IMGT/HLA web page 2013-July-25, release 3.13.1, www.ebi.ac.uk/imgt/hla.

RESOLUTION IN HOMO- AND HETEROZYGOTES

A total of 7 alleles generate 7 amplification patterns that can be combined in 28 homozygous and heterozygous combinations. 12 of these genotypes do not give rise to unique amplification patterns. The different lengths of the specific PCR products were not considered in these calculations.

++++---+ *18:05, *18:07N = *18:07N, *18:07N
 ++++---+ *18:05, *18:06 = *18:06, *18:07N
 ++++---+ *18:04, *18:05 = *18:04, *18:07N
 ++++---+ *18:03, *18:05 = *18:03, *18:07N
 +-+---+ *18:02, *18:05 = *18:02, *18:07N
 +-+---+ *18:01, *18:05 = *18:01, *18:07N

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Lot-specific information
SPECIFICITY TABLE

HLA-C*18 SSP subtyping

Specificities and sizes of the PCR products of the 8 primer mixes used for HLA-C*18 SSP subtyping

Primer Mix	Size of spec. PCR product ¹	Size of control band ²	Amplified HLA-C*18 alleles ³	Other amplified HLA Class I alleles ⁴
1	425 bp	800 bp	*18:01-18:07N	*06:17, 07:07, 07:09, 07:49, 07:76, 07:210, 07:238, 07:247, 07:315
2	560 bp	1070 bp	*18:01, 18:03 [?] -18:07N [?]	*07:01:01:01-07:33N, 07:35-07:294, 07:296-07:315
3	225 bp	1070 bp	*18:02, 18:03 [?] -18:07N [?]	*04:01:01:01-04:01:52, 04:03:01-04:20, 04:23-04:152
4	535 bp	1070 bp	*18:01-18:04, 18:06-18:07N	*06:02:08
5	165 bp	1070 bp	*18:03	*02:22, 04:94:01-04:94:02, 05:08, 05:52, 05:89, 06:09, 08:27, 08:29, 08:31, 12:31, B*15:137
6	265 bp	1070 bp	*18:04	*07:20, 07:64, 07:73, 07:92, 07:96:01-07:96:02, 07:172
7 ^{5,6}	85 bp, 480 bp	1070 bp	*18:05, 18:07N	*03:08, 03:29, 03:31, 04:112, 04:123N
8	110 bp	1070 bp	*18:06	

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-C*18 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 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.

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Lot No.: 83S**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 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-C*18 SSP subtyping.

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

³For several HLA Class I alleles 1st and/or 4th 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.

⁴Due to the sharing of sequence motifs between HLA-C alleles some non-HLA-C*18 alleles will be amplified by primer mixes 1 to 7. In addition, the B*15:137 allele will be amplified by primer mix 5.

⁵HLA-specific PCR products shorter than 125 base pairs have a lower intensity and are less sharp than longer PCR products.

⁶Primer mix 7: Specific PCR fragment of 85 bp in the C*18:07N and the C*04:123N allele. Specific PCR fragment of 480 bp in the C*18:05 and the C*03:08, 03:29, 03:31 and 04:112 alleles.

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

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Lot-specific information

INTERPRETATION TABLE								
HLA-C*18 SSP subtyping								
Amplification patterns of the C*18:01 to 18:07N alleles								
	Well ⁵							
	1	2	3	4	5	6	7	8
Length of spec.	425	560	225	535	165	265	85	110
PCR product							480	
Length of int.	800	1070	1070	1070	1070	1070	1070	1070
pos. control ¹								
5'-primer ²	47	956	895	213	412	47	270	145
	5' -Agg 3'	5' -ggT 3'	5' -ggA 3'	5' -CCC 3'	5' -ATA 3'	5' -Agg 3'	5' -AAC 3'	5' -CAA 3'
							415	
							5' -ACT 3'	
3'-primer ³	302	1034	956	459	538	142	459	213
	5' -ggT 3'	5' -AgC 3'	5' -CAg 3'	5' -AgA 3'	5' -CCA 3'	5' -TgC 3'	5' -AgA 3'	5' -Cgg 3'
Well No.	1	2	3	4	5	6	7	8
HLA-C allele ⁴								
*18:01	1	2		4				
*18:02	1		3	4				
*18:03	1	?	?	4	5			
*18:04	1	?	?	4		6		
*18:05	1	?	?				7	
*18:06	1	?	?	4				8
*18:07N	1	?	?	4			7	
*02:22, 05:08, 05:52, 05:89, 06:09, 08:27, 08:29, 08:31, 12:31, B*15:137					5			
*03:08, 03:29, 03:31							7	
*04:01:01:01-04:01:52, 04:03:01- 04:20, 04:23-04:93N, 04:95N- 04:111, 04:113-04:122, 04:124- 04:152			3					
*04:94:01-04:94:02			3		5			
*04:112, 04:123N			3				7	
*06:02:08				4				
*06:17	1							
*07:01:01:01-07:06, 07:08, 07:10- 07:19, 07:21-07:33N, 07:35-07:48, 07:50-07:63, 07:65-07:72, 07:74- 07:75, 07:77-07:91, 07:93-07:95, 07:97-07:171, 07:173-07:209, 07:211-07:237, 07:239-07:246, 07:248-07:294, 07:296-07:314		2						
*07:07, 07:09, 07:49, 07:76, 07:210, 07:238, 07:247, 07:315	1	2						
*07:20, 07:64, 07:73, 07:92, 07:96:01-07:96:02, 07:172		2				6		
Well No.	1	2	3	4	5	6	7	8

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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-C*18 SSP subtyping.

²The nucleotide position, in the 1st, 2nd, 3rd, 4th or 5th 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, 3rd, 5th or 6th 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.

⁴HLA-C*18 alleles in bold lettering are listed as confirmed alleles on the IMGT/HLA web page www.ebi.ac.uk/imgt/hla, release 3.13.1, July 2013.

⁵Primer mix 7: Specific PCR fragment of 85 bp in the C*18:07N and the C*04:123N allele. Specific PCR fragment of 480 bp in the C*18:05 and the C*03:08, 03:29, 03:31 and 04:112 alleles.

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

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CELL LINE VALIDATION SHEET												
HLA-C*18 SSP primer set												
				Well								
				1	2	3	4	5	6	7	8	
				Prod. No.:	200964701	200964702	200964703	200964704	200964705	201181606	201324407	201324408
IHCW cell line			C*									
1	9001	SA	*07:02	-	+	-	-	-	-	-	-	-
2	9280	LK707	*07:01	*15:05	-	+	-	-	-	-	-	-
3	9011	E4181324	*12:02		-	-	-	-	-	-	-	-
4	9275	GU373	*03:04	*04:01	-	-	+	-	-	-	-	-
5	9009	KAS011	*06:02		-	-	-	-	-	-	-	-
6	9353	SM	*03:04	*07:02	-	+	-	-	-	-	-	-
7	9020	QBL	*05:01		-	-	-	-	-	-	-	-
8	9025	DEU	*04:01		-	-	+	-	-	-	-	-
9	9026	YAR	*12:03		-	-	-	-	-	-	-	-
10	9107	LKT3	*01:02		-	-	-	-	-	-	-	-
11	9051	PITOUT	*16:01		-	-	-	-	-	-	-	-
12	9052	DBB	*06:02		-	-	-	-	-	-	-	-
13	9004	JESTHOM	*01:02		-	-	-	-	-	-	-	-
14	9071	OLGA	*01:02	*03:04	-	-	-	-	-	-	-	-
15	9075	DKB	*03:04		-	-	-	-	-	-	-	-
16	9037	SWEIG007	*02:02		-	-	-	-	-	-	-	-
17	9282	CTM3953540	*03:03	*07:01	-	+	-	-	-	-	-	-
18	9257	32367	*01:02	*07:05	-	+	-	-	-	-	-	-
19	9038	BM16	*07:01		-	+	-	-	-	-	-	-
20	9059	SLE005	*03:04		-	-	-	-	-	-	-	-
21	9064	AMALA	*03:03		-	-	-	-	-	-	-	-
22	9056	KOSE	*12:03		-	-	-	-	-	-	-	-
23	9124	IHL	*01:02	*15:02	-	-	-	-	-	-	-	-
24	9035	JBUSH	*12:03		-	-	-	-	-	-	-	-
25	9049	IBW9	*08:02		-	-	-	-	-	-	-	-
26	9285	WT49	*07:01		-	+	-	-	-	-	-	-
27	9191	CH1007	*07:04	*15:05	-	+	-	-	-	-	-	-
28	9320	BEL5GB	*05:01	*16:01	-	-	-	-	-	-	-	-
29	9050	MOU	*16:01		-	-	-	-	-	-	-	-
30	9021	RSH	*17:01		-	-	-	-	-	-	-	-
31	9019	DUCAF	*05:01		-	-	-	-	-	-	-	-
32	9297	HAG	*17:01	*17:03	-	-	-	-	-	-	-	-
33	9098	MT14B	*03:04		-	-	-	-	-	-	-	-
34	9104	DHIF	*12:03		-	-	-	-	-	-	-	-
35	9302	SSTO	*05:01		-	-	-	-	-	-	-	-
36	9024	KT17	*03:03	*04:01	-	-	+	-	-	-	-	-
37	9065	HHKB	*07:02		-	+	-	-	-	-	-	-
38	9099	LZL	*03:03		-	-	-	-	-	-	-	-
39	9315	CML	*02:02	*07:01	-	+	-	-	-	-	-	-
40	9134	WHONP199	*01:02	*06:02	-	-	-	-	-	-	-	-
41	9055	H0301	*08:02		-	-	-	-	-	-	-	-
42	9066	TAB089	*01:02		-	-	-	-	-	-	-	-
43	9076	T7526	*01:02	*08:01	-	-	-	-	-	-	-	-
44	9057	TEM	*12:03		-	-	-	-	-	-	-	-
45	9239	SHJO	*06:02	*17:01	-	-	-	-	-	-	-	-
46	9013	SCHU	*07:02		-	+	-	-	-	-	-	-
47	9045	TUBO	*07:04	*15:02	-	+	-	-	-	-	-	-
48	9303	TER-ND	*04:01	*16:01	-	-	+	-	-	-	-	-

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CERTIFICATE OF ANALYSIS

Olerup SSP® HLA-C*18 SSP

Product number: 101.629-06 – including *Taq* polymerase
 101.629-06u – without *Taq* polymerase
 Lot number: 83S
 Expiry date: 2016-March-01
 Number of tests: 6
 Number of wells per test: 8

Well specifications:

HLA-C*18

Well No.	Production No.
1	2009-647-01
2	2009-647-02
3	2009-647-03
4	2009-647-04
5	2009-647-05
6	2011-816-06
7	2013-244-07
8	2013-244-08

The specificity of each primer solution of the HLA-C*18 primer set has been tested against 48 well characterized IHWC cell line DNAs.

No DNAs carrying the alleles to be amplified by primer solutions 5 to 8 were available. The specificities of the primers in primer solutions 5 to 7 were tested by separately adding one additional 5'-primer, respectively one additional 3'-primer. In primer solution 8 it was only possible to test the 3'-primer, the 5'-primer was not possible to test. In primer mix 7, one 5'-primer was not possible to test.

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

Date of approval: 2013-October-09

Approved by:

Production Quality Control

101.629-06– including *Taq* polymerase, IFU-01
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Declaration of Conformity

Product name: *Olerup* SSP® HLA-C*18

Product number: 101.629-06/06u

Lot number: 83S

Intended use: HLA-C*18 high resolution histocompatibility testing

Manufacturer: *Olerup* SSP AB
Franzengatan 5
SE-112 51 Stockholm, 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 9001:2008 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-October-09

Ann-Cathrin Jareman
Head of QA and Regulatory Affairs

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