

Olerup SSP[®] HLA-B*78

Product number:	101.551-06u – without Taq polymerase
Lot number:	48K
Expiry date:	2012-September-01
Number of tests:	6
Number of wells per test:	15
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. 48K.

CHANGES COMPARED TO THE PREVIOUS OLERUP SSP[®] HLA-B*78 LOT.

The HLA-B*78 specificity and interpretation tables have been updated for the HLA-B alleles described since the previous Olerup SSP[®] HLA-B*78 lot was made (Lot No. 66F).

Two wells have been added to the HLA-B*78kit,
wells **14 and 15**.

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

Well	5'-primer	3'-primer	rationale
10	-	Added	Increased yield of specific PCR product.
14	New	New	Improved allelic resolution.
15	New	New	New primer pair for the B*78:07 allele.

Changes in revision R01 compared to R00:

1. Primer mix 15 contains the shorter, 800 bp, positive control band. This has been corrected in the Specificity and Interpretation Tables.

PRODUCT DESCRIPTION

HLA-B*78 SSP typing

CONTENT

The primer set contains 5'- and 3'-primers for identifying the B*78:01 to B*78:07 alleles.

PLATE LAYOUT

Each HLA-B*78 test consists of 15 PCR reactions in a 16 well cut PCR plate. Well 16 is empty.

1	2	3	4	5	6	7	8
9	10	11	12	13	14	15	empty

The 16 well PCR plate is marked with 'HLA-B*78' in silver/gray ink.

Well No. 1 is marked with the Lot No '48K'.

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 16 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*78 SSP subtypings will be influenced by many other HLA-B alleles due to sharing of sequence motifs.

UNIQUELY IDENTIFIED ALLELES

All the HLA-B*78, i.e. **B*78:01 to B*78:07**, recognized by the HLA Nomenclature Committee in July 2010¹ will be amplified by the primers in the HLA-B*78 SSP kit.

¹HLA-B alleles listed on the IMGT/HLA web page 2010-July-16, release 3.1.0, www.ebi.ac.uk/imgt/hla.

RESOLUTION IN HOMO- AND HETEROZYGOTES

A total of 8 HLA-B*78 alleles generate 8 amplification patterns that can be combined in 36 homozygous and heterozygous combinations. 15 of these genotypes do not give rise to unique amplification patterns.

+++++--- -++++--- *78:02:01, *78:03 = *78:02:02, *78:03
+++++--- -+++++ *78:02:01, *78:07 = *78:02:02, *78:07
+++++--- -++++--- *78:01, *78:02:01 = *78:01, *78:02:02
+++++--- -++++--- *78:01, *78:03 = *78:03, *78:03
+++++--- -+++++ *78:02:01, *78:06 = *78:05, *78:06 = *78:06, *78:06
+++++--- -++++--- *78:02:01, *78:05 = *78:05, *78:05
+++++--- -++++--- *78:02:01, *78:02:02 = *78:02:02, *78:02:02

SPECIFICITY TABLE

HLA-B*78 SSP subtyping

Specificities and sizes of the PCR products of the 15 primer mixes used for HLA-B*78 SSP subtyping

Primer Mix	Size of spec. PCR product ¹	Size of control band ²	Amplified HLA-B*78 alleles	Other amplified HLA-B alleles ³
1	265 bp	800 bp	*78:01-78:03, 78:05-78:07	*13:15, 49:09, 51:01:01-51:01:17, 51:03, 51:07:01-51:09:02, 51:11N- 51:14, 51:16-51:22, 51:24:01- 51:24:03, 51:26-51:33, 51:35, 51:37-51:39, 51:41N, 51:43- 51:44N, 51:48-51:53, 51:55, 51:57- 51:58, 51:60-51:61, 51:63, 51:65- 51:80, 51:82-51:92, 51:94-51:96, 52:01:01-52:02, 52:04-52:10, 52:12-52:21, 56:05:01-56:06, 56:21, 58:08, 73:01-73:02
2	190 bp	1070 bp	*78:01, 78:03, 78:07	*07:65, 56:05:01, 56:06
3	225 bp	1070 bp	*78:02:01- 78:02:02, 78:04-78:06	*08:23, 08:54, 13:09, 13:39, 14:18, 15:01:01:01-15:01:04, 15:01:06- 15:12, 15:14-15:15, 15:18:01- 15:21, 15:25:01-15:35, 15:37- 15:40, 15:42, 15:44-15:56, 15:58, 15:60, 15:62-15:66, 15:69, 15:72- 15:75, 15:77-15:88, 15:90-15:93, 15:96-15:99, 15:102-15:114, 15:116-15:129, 15:131-15:147, 15:149N-15:156, 15:158-15:161, 15:163, 15:165-15:167, 15:169- 15:174, 15:176, 15:178-15:179, 15:181N-15:188, 15:190N-15:195, 15:197-15:202, 18:04, 18:25, 35:01:01:01-35:28, 35:30-35:49, 35:51-35:68:02, 35:70-35:72, 35:74-35:75, 35:77-35:83, 35:85- 35:135, 35:137-35:145N, 40:01:01- 40:01:12, 40:07, 40:10:01- 40:10:02, 40:12, 40:14:01-40:16, 40:21-40:23, 40:25, 40:30-40:34, 40:36, 40:38, 40:42, 40:45-40:46,

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				40:48-40:49, 40:51-40:55, 40:58-40:63, 40:65, 40:67, 40:69, 40:72:01-40:73, 40:76-40:77, 40:79-40:81, 40:84, 40:87-40:88, 40:92, 40:100-40:102, 40:106, 40:108, 40:112- 40:114, 40:116, 40:118N, 40:121, 40:123-40:126, 40:128-40:130, 40:132, 40:134- 40:141, 40:146, 41:01-41:12, 44:09, 44:46, 44:75, 45:01-45:05, 45:07-45:12, 47:02-47:03, 48:22, 50:01:01-50:02, 50:04-50:09, 52:09, 53:05, 53:16, 55:18, 55:31, 56:23, 57:12
4	170 bp	1070 bp	*78:03	*51:22
5	210 bp	800 bp	*78:04	*13:02:01-13:04, 13:08Q-13:09, 13:14-13:15, 13:18 ^w , 13:19, 13:27, 13:30, 13:32-13:35, 13:37-13:38, 15:155, 27:14, 35:37, 35:60, 39:06:01-39:06:02, 39:33 ^w , 39:34, 39:50, 39:57, 40:06:01:01- 40:06:03, 40:44, 40:53, 40:70, 40:75, 40:83, 40:86, 40:93, 40:96, 40:103, 40:109-40:110, 40:127, 40:131, 44:47, 46:11, 46:18, 51:05 ^w , 51:09:01-51:10, 51:15, 51:19, 51:31, 51:40, 51:54 ^w , 51:73, 51:93, 52:03, 52:10, 54:01-54:05N, 54:07-54:08N, 54:10 ^w , 54:11- 54:19, 54:21-54:23, 55:02:01- 55:02:06, 55:07, 55:10, 55:12- 55:13, 55:16, 55:18-55:19, 55:22- 55:23, 55:26-55:27, 55:30, 55:32, 55:34-55:35, 55:37 ^w , 55:39, 55:41- 55:43, 56:01:01-56:01:04, 56:07- 56:08, 56:14-56:17, 56:19N-56:20, 56:22-56:24, 56:26-56:29, 59:01- 59:05, 73:01-73:02
6⁴	95 bp	1070 bp	*78:05-78:06	*15:202, 18:12, 35:10, 35:13, 35:16, 35:28, 35:69, 35:80, 37:01:01-37:01:05, 37:01:07- 37:05, 37:07, 37:09-37:23, 44:83, 49:03, 52:01:01-52:01:05, 52:03- 52:15, 52:17, 52:19-52:21, 53:17
7	210 bp	1070 bp	*78:01, 78:02:02- 78:03, 78:07	*07:65, 18:04, 35:42:02, 35:43:02, 40:01:11, 40:58, 56:05:01, 56:06

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8	210 bp	1070 bp		*44:06, 49:03, 51:01:01, 51:01:03-51:01:08, 51:01:10-51:02:01, 51:02:03-51:04, 51:06-51:07:01, 51:08-51:09:01, 51:10-51:14, 51:16-51:24:03, 51:26-51:46, 51:48-51:53, 51:55-51:77, 51:79-51:88, 51:90-51:92, 51:94-51:96, 52:01:02, 52:01:04, 52:02-52:03, 52:06:01-52:06:02, 52:09, 52:21, 53:06, 58:08
9	325 bp	1070 bp		*07:02:01-07:02:20, 07:04-07:07, 07:09-07:15, 07:17-07:26, 07:28-07:31, 07:33-07:36, 07:39-07:46, 07:48-07:49N, 07:51-07:68:02, 07:70-07:84, 07:86-07:115, 15:76, 15:101, 27:01-27:11, 27:13-27:15, 27:17, 27:19-27:21, 27:24-27:28, 27:30-27:38, 27:40-27:58, 27:60-27:69, 35:76, 42:01:01-42:02, 42:04-42:06, 42:08-42:10, 42:12-42:14, 44:90, 44:97, 45:06, 46:01:01-46:24, 54:01-54:23, 55:01:01-55:05, 55:07-55:17, 55:19-55:43, 56:01:01-56:16, 56:18-56:22, 56:24-56:29, 67:01:01-67:02, 73:01-73:02, 81:01-81:05, 82:01-82:03, 83:01
10⁵	200 bp	1070 bp	*78:01-78:06	*08:21, 08:25, 13:03, 15:09, 15:30, 15:48, 15:58, 15:73, 15:150, 35:02:01-35:02:04, 35:04:01-35:04:03, 35:06, 35:09:01-35:09:02, 35:12:01-35:12:02, 35:18, 35:22, 35:44, 35:59, 35:81, 35:83, 35:95, 35:129N, 39:32-39:33, 40:05, 40:26, 40:28, 40:63, 40:71, 40:92, 44:10, 44:14, 44:62, 44:77, 44:82, 45:12, 46:11, 51:01:01-51:02:02, 51:02:04-51:09:02, 51:11N-51:15, 51:19-51:20, 51:22-51:24:03, 51:26-51:30, 51:32-51:33, 51:35, 51:38-51:41N, 51:43-51:44N, 51:46, 51:48-51:80, 51:83-51:84, 51:86-51:89, 51:91, 51:95-51:96, 52:01:01-52:07, 52:09-52:11, 52:13-52:21, 53:19, 54:03, 55:08, 56:01:01-56:02, 56:04-56:08,

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				56:13-56:17, 56:20-56:22, 56:24-56:29, 57:02:01-57:03:02, 57:07, 57:09, 57:12, 57:17, 57:28N, 58:08, 58:28, 59:04, 82:01-82:03
11⁴	150 bp	1070 bp		*18:09, 27:52, 37:01:01-37:01:05, 37:01:07-37:04:02, 37:07-37:10, 37:12-37:23, 38:06-38:07, 44:06, 44:83, 49:03, 51:01:01-51:24:03, 51:26-51:46, 51:48-51:96, 52:01:01-52:01:05, 52:03-52:15, 52:17-52:21, 53:01:01-53:23, 58:01:01-58:02, 58:04-58:30
12⁴	145 bp	1070 bp	*78:01-78:07	*07:65, 08:32, 15:202, 18:01:01-18:08, 18:10-18:15, 18:17N-18:36, 18:38-18:47, 18:49-18:50, 35:01:01:01-35:08:01, 35:08:03-35:18, 35:20:01-35:24:02, 35:27-35:45, 35:48, 35:50-35:62, 35:64-35:72, 35:74-35:145N, 37:05, 37:11, 37:14 ^w , 39:19:01-39:19:02, 56:06
13⁴	135 bp	1070 bp	*78:06	*18:49, 35:27, 35:56, 37:05
14	380 bp	1070 bp		*08:03, 08:52, 40:13, 40:19, 40:109, 40:117, 48:18, 51:01:01-51:01:07, 51:01:09-51:01:14, 51:01:16-51:12, 51:16-51:24:03, 51:26-51:36, 51:38-51:41N, 51:43-51:44N, 51:46, 51:48-51:49, 51:51-51:53, 51:55-51:61, 51:64-51:77, 51:79-51:84, 51:86-51:89, 51:91, 51:93-51:96, 52:01:01-52:11, 52:13, 52:15-52:19, 52:21, 53:19, 56:21, 57:02:01-57:03:02, 57:05, 57:07, 57:09, 57:17, 58:08, 58:27-58:28, 59:02
15	245 bp	800 bp	*78:07	*08:09, 15:42, 15:83, 35:60, 39:06:01-39:06:02, 39:34, 39:57, 41:01, 41:05-41:07, 41:09, 41:12, 42:04, 45:08, 46:18, 51:21, 51:36, 54:01-54:02, 54:04-54:05N, 54:07-54:08N, 54:10-54:23, 55:01:01-55:03, 55:05, 55:07, 55:10-55:13, 55:15-55:21, 55:23, 55:25-55:43, 56:23, 59:01-59:03, 59:05

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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*78 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 lengths 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 addition, wells number 5 and 15 contain 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 many non-HLA-B*78 alleles will be amplified by primer mixes 1 to 15.

⁴Specific PCR fragments shorter than 150 base pairs are less intense and not as sharp as longer specific bands.

⁵Primer mix 10 may have a tendency of giving rise to primer oligomer formation.

‘w’, might be weakly amplified.

INTERPRETATION TABLE

HLA-B*78 SSP subtyping

Amplification patterns of the B*78:01 to B*78:07 alleles

	Well							
	1	2	3	4	5	6	7	8
Length of spec.	265	190	225	170	210	95	210	210
PCR product								
Length of int.	800	1070	1070	1070	800	1070	1070	1070
pos. control ¹								
5'-primer ²	357	141	106	141	357	206	141	141
	5'-Tgg 3'	5'-ATT 3'	5'-CCA 3'	5'-ATT 3'	5'-Tgg 3'	5'-gAC 3'	5'-ATT 3'	5'-ATT 3'
			106					
			5'-CCg 3'					
3'-primer ³	583	292	292	272	527	259	311	309
	5'-gTg 3'	5'-gTC 3'	5'-gTA 3'	5'-TgC 3'	5'-CCA 3'	5'-CTC 3'	5'-ggT 3'	5'-ATC 3'
					527			
					5'-CCA 3'			
Well No.	1	2	3	4	5	6	7	8
HLA-B allele								
*78:01	1	2					7	
*78:02:01	1		3					
*78:02:02	1		3				7	
*78:03	1	2		4			7	
*78:04			3		5			
*78:05	1		3			6		
*78:06	1		3			6		
*78:07	1	2					7	
*07:02:01-07:02:20, 07:04-07:07, 07:09-07:15, 07:17-07:26, 07:28-07:31, 07:33-07:36, 07:39-07:46, 07:48-07:49N, 07:51-07:64, 07:66-07:68:02, 07:70-07:84, 07:86-07:115, 15:76, 15:101, 27:01-27:11, 27:13, 27:15, 27:17, 27:19-27:21, 27:24-27:28, 27:30-27:38, 27:40-27:51, 27:53-27:58, 27:60-27:69, 42:01:01-42:02, 42:05:01-42:06, 42:08-42:10, 42:12-42:14, 44:90, 44:97, 45:06, 46:01:01-46:10, 46:12-46:17, 46:19-46:24, 54:06, 54:09, 55:04, 55:09, 55:14, 55:24, 56:03, 56:09-56:12, 56:18, 67:01:01-67:02, 81:01-81:05, 83:01								
*07:65		2					7	
Well No.	1	2	3	4	5	6	7	8

INTERPRETATION TABLE							
HLA-B*78 SSP subtyping							
Amplification patterns of the B*78:01 to B*78:07 alleles							
Well							
9	10	11	12	13	14	15	
325	200	150	145	135	380	245	Length of spec. PCR product
1070	1070	1070	1070	1070	1070	800	Length of int. pos. control ¹
1st 	397	206	206	206	317	357	5'-primer ²
5' -CAg 3'	5' -gCT 3'	5' -gAC 3'	5' -gAC 3'	5' -gAC 3'	5' -gCT 3'	5' -Tgg 3'	
	412						
	5' -ATA 3'						
282	559	317	311	302	412	559	3'-primer ³
5' -gCC 3'	5' -CAg 3'	5' -ggA 3'	5' -ggT 3'	5' -ggT 3'	5' -gTT 3'	5' -CgT 3'	
9	10	11	12	13	14	15	Well No.
							HLA-B allele
	10		12				*78:01
	10		12				*78:02:01
	10		12				*78:02:02
	10		12				*78:03
	10		12				*78:04
	10		12				*78:05
	10		12	13			*78:06
			12			15	*78:07
9							*07:02:01-07:02:20, 07:04-07:07, 07:09-07:15, 07:17-07:26, 07:28-07:31, 07:33-07:36, 07:39-07:46, 07:48-07:49N, 07:51-07:64, 07:66-07:68:02, 07:70-07:84, 07:86-07:115, 15:76, 15:101, 27:01-27:11, 27:13, 27:15, 27:17, 27:19-27:21, 27:24-27:28, 27:30-27:38, 27:40-27:51, 27:53-27:58, 27:60-27:69, 42:01:01-42:02, 42:05:01-42:06, 42:08-42:10, 42:12-42:14, 44:90, 44:97, 45:06, 46:01:01-46:10, 46:12-46:17, 46:19-46:24, 54:06, 54:09, 55:04, 55:09, 55:14, 55:24, 56:03, 56:09-56:12, 56:18, 67:01:01-67:02, 81:01-81:05, 83:01
9			12				*07:65
9	10	11	12	13	14	15	Well No.

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Length of spec.	265	190	225	170	210	95	210	210
PCR product								
Well No.	1	2	3	4	5	6	7	8
*08:03, 08:52, 40:13, 40:19, 40:117, 48:18, 57:05								
*08:09								
*08:21, 08:25, 39:32, 40:05, 40:26, 40:28, 40:71, 44:10, 44:14, 44:62, 44:77, 44:82, 57:28N								
*08:23, 08:54, 13:39, 14:18, 15:01:01:01- 15:01:04, 15:01:06-15:08, 15:10:01-15:12, 15:14-15:15, 15:18:01-15:21, 15:25:01-15:29, 15:31-15:35, 15:37-15:40, 15:44-15:47, 15:49- 15:56, 15:60, 15:62-15:66, 15:69, 15:72, 15:74- 15:75, 15:77-15:82, 15:84-15:88, 15:90-15:93, 15:96-15:99, 15:102-15:114, 15:116-15:129, 15:131-15:147, 15:149N, 15:151-15:154, 15:156, 15:158-15:161, 15:163, 15:165-15:167, 15:169-15:174, 15:176, 15:178-15:179, 15:181N-15:188, 15:190N-15:195, 15:197- 15:201, 35:08:02, 35:19, 35:25-35:26, 35:46- 35:47, 35:49, 35:63, 40:01:01-40:01:10, 40:01:12, 40:07, 40:10:01-40:10:02, 40:12, 40:14:01-40:16, 40:21-40:23, 40:25, 40:30- 40:34, 40:36, 40:38, 40:42, 40:45-40:46, 40:48- 40:49, 40:51-40:52, 40:54-40:55, 40:59-40:62, 40:65, 40:67, 40:69, 40:72:01-40:73, 40:76- 40:77, 40:79-40:81, 40:84, 40:87-40:88, 40:100- 40:102, 40:106, 40:108, 40:112-40:114, 40:116, 40:118N, 40:121, 40:123-40:126, 40:128- 40:130, 40:132, 40:134-40:141, 40:146, 41:02:01-41:04, 41:08, 41:10-41:11, 44:09, 44:46, 44:75, 45:01-45:05, 45:07, 45:09-45:11, 47:02-47:03, 48:22, 50:01:01-50:02, 50:04- 50:09			3					
*08:32, 18:01:01-18:03, 18:05-18:08, 18:10-18:11, 18:13-18:15, 18:17N-18:24, 18:26-18:36, 18:38-18:47, 18:50, 35:29, 35:50, 35:84, 35:136, 39:19:01-39:19:02								
*13:02:01-13:02:09, 13:04, 13:08Q, 13:14, 13:19, 13:27, 13:30, 13:32-13:35, 13:37-13:38, 39:50, 40:06:01:01- 40:06:03, 40:44, 40:70, 40:75, 40:83, 40:86, 40:93, 40:96, 40:103, 40:110, 40:127, 40:131, 44:47					5			
Well No.	1	2	3	4	5	6	7	8

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Lot-specific information

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325	200	150	145	135	380	245	Length of spec. PCR product
9	10	11	12	13	14	15	Well No.
					14		*08:03, 08:52, 40:13, 40:19, 40:117, 48:18, 57:05
						15	*08:09
	10						*08:21, 08:25, 39:32, 40:05, 40:26, 40:28, 40:71, 44:10, 44:14, 44:62, 44:77, 44:82, 57:28N
							*08:23, 08:54, 13:39, 14:18, 15:01:01:01- 15:01:04, 15:01:06-15:08, 15:10:01-15:12, 15:14-15:15, 15:18:01-15:21, 15:25:01-15:29, 15:31-15:35, 15:37-15:40, 15:44-15:47, 15:49- 15:56, 15:60, 15:62-15:66, 15:69, 15:72, 15:74- 15:75, 15:77-15:82, 15:84-15:88, 15:90-15:93, 15:96-15:99, 15:102-15:114, 15:116-15:129, 15:131-15:147, 15:149N, 15:151-15:154, 15:156, 15:158-15:161, 15:163, 15:165-15:167, 15:169-15:174, 15:176, 15:178-15:179, 15:181N-15:188, 15:190N-15:195, 15:197- 15:201, 35:08:02, 35:19, 35:25-35:26, 35:46- 35:47, 35:49, 35:63, 40:01:01-40:01:10, 40:01:12, 40:07, 40:10:01-40:10:02, 40:12, 40:14:01-40:16, 40:21-40:23, 40:25, 40:30- 40:34, 40:36, 40:38, 40:42, 40:45-40:46, 40:48- 40:49, 40:51-40:52, 40:54-40:55, 40:59-40:62, 40:65, 40:67, 40:69, 40:72:01-40:73, 40:76- 40:77, 40:79-40:81, 40:84, 40:87-40:88, 40:100- 40:102, 40:106, 40:108, 40:112-40:114, 40:116, 40:118N, 40:121, 40:123-40:126, 40:128- 40:130, 40:132, 40:134-40:141, 40:146, 41:02:01-41:04, 41:08, 41:10-41:11, 44:09, 44:46, 44:75, 45:01-45:05, 45:07, 45:09-45:11, 47:02-47:03, 48:22, 50:01:01-50:02, 50:04- 50:09
			12				*08:32, 18:01:01-18:03, 18:05-18:08, 18:10-18:11, 18:13-18:15, 18:17N-18:24, 18:26-18:36, 18:38-18:47, 18:50, 35:29, 35:50, 35:84, 35:136, 39:19:01-39:19:02
							*13:02:01-13:02:09, 13:04, 13:08Q, 13:14, 13:19, 13:27, 13:30, 13:32-13:35, 13:37-13:38, 39:50, 40:06:01:01- 40:06:03, 40:44, 40:70, 40:75, 40:83, 40:86, 40:93, 40:96, 40:103, 40:110, 40:127, 40:131, 44:47
9	10	11	12	13	14	15	Well No.

Lot No.: **48K**

Lot-specific information

www.olerup-ssp.com

Length of spec.	265	190	225	170	210	95	210	210
PCR product								
Well No.	1	2	3	4	5	6	7	8
*13:03, 56:17, 59:04					5			
*13:09, 15:155, 40:53			3		5			
*13:15	1				5			
*13:18					w			
*15:09, 15:30, 15:48, 15:58, 15:73, 15:150, 40:63, 40:92, 45:12, 57:12			3					
*15:42, 15:83, 41:01, 41:05-41:07, 41:09, 41:12, 45:08			3					
*15:202, 35:10, 35:13, 35:16, 35:28, 35:80			3			6		
*18:04, 35:42:02, 35:43:02			3				7	
*18:09, 37:08, 38:06-38:07, 53:01:01- 53:04, 53:07-53:15, 53:18, 53:20-53:23, 58:01:01-58:02, 58:04-58:07, 58:09- 58:26, 58:29-58:30								
*18:12, 35:69, 37:11						6		
*18:25, 35:01:01:01-35:01:21, 35:03:01- 35:03:04, 35:05:01-35:05:02, 35:07- 35:08:01, 35:08:03-35:08:04, 35:11:01- 35:11:02, 35:14:01-35:15, 35:17, 35:20:01-35:21, 35:23-35:24:02, 35:30- 35:36, 35:38-35:42:01, 35:43:01, 35:45, 35:48, 35:51-35:55, 35:57-35:58, 35:61- 35:62, 35:64-35:68:02, 35:70-35:72, 35:74-35:75, 35:77-35:79, 35:82, 35:85- 35:94, 35:96-35:128, 35:130N-35:135, 35:137-35:145N			3					
*18:49								
*27:14, 55:22, 56:19N					5			
*27:52								
*35:02:01-35:02:04, 35:04:01-35:04:03, 35:06, 35:09:01-35:09:02, 35:12:01- 35:12:02, 35:18, 35:22, 35:44, 35:59, 35:81, 35:83, 35:95, 35:129N			3					
*35:27, 35:56			3					
*35:37			3		5			
*35:60			3		5			
*35:76								
Well No.	1	2	3	4	5	6	7	8

Lot No.: **48K**

Lot-specific information

www.olerup-ssp.com

325	200	150	145	135	380	245	Length of spec. PCR product
9	10	11	12	13	14	15	Well No.
	10						*13:03, 56:17, 59:04
							*13:09, 15:155, 40:53
							*13:15
							*13:18
	10						*15:09, 15:30, 15:48, 15:58, 15:73, 15:150, 40:63, 40:92, 45:12, 57:12
						15	*15:42, 15:83, 41:01, 41:05-41:07, 41:09, 41:12, 45:08
			12				*15:202, 35:10, 35:13, 35:16, 35:28, 35:80
			12				*18:04, 35:42:02, 35:43:02
		11					*18:09, 37:08, 38:06-38:07, 53:01-01- 53:04, 53:07-53:15, 53:18, 53:20-53:23, 58:01-01-58:02, 58:04-58:07, 58:09- 58:26, 58:29-58:30
			12				*18:12, 35:69, 37:11
			12				*18:25, 35:01:01-01-35:01:21, 35:03:01- 35:03:04, 35:05:01-35:05:02, 35:07- 35:08:01, 35:08:03-35:08:04, 35:11:01- 35:11:02, 35:14:01-35:15, 35:17, 35:20:01-35:21, 35:23-35:24:02, 35:30- 35:36, 35:38-35:42:01, 35:43:01, 35:45, 35:48, 35:51-35:55, 35:57-35:58, 35:61- 35:62, 35:64-35:68:02, 35:70-35:72, 35:74-35:75, 35:77-35:79, 35:82, 35:85- 35:94, 35:96-35:128, 35:130N-35:135, 35:137-35:145N
			12	13			*18:49
9							*27:14, 55:22, 56:19N
9		11					*27:52
	10		12				*35:02:01-35:02:04, 35:04:01-35:04:03, 35:06, 35:09:01-35:09:02, 35:12:01- 35:12:02, 35:18, 35:22, 35:44, 35:59, 35:81, 35:83, 35:95, 35:129N
			12	13			*35:27, 35:56
			12				*35:37
			12			15	*35:60
9			12				*35:76
9	10	11	12	13	14	15	Well No.

Lot No.: **48K**

Lot-specific information

www.olerup-ssp.com

Length of spec. PCR product	265	190	225	170	210	95	210	210
Well No.	1	2	3	4	5	6	7	8
*37:01:01-37:01:05, 37:01:07-37:04:02, 37:07, 37:09-37:10, 37:12-37:13, 37:15- 37:23, 44:83, 53:17						6		
*37:05						6		
*37:14						6		
*39:06:01-39:06:02, 39:34, 39:57, 59:01, 59:03, 59:05					5			
*39:33					w			
*40:01:11, 40:58			3				7	
*40:109					5			
*42:04, 54:20, 55:01:01-55:01:06, 55:03, 55:05, 55:11, 55:15, 55:17, 55:20-55:21, 55:25, 55:28-55:29, 55:33, 55:36, 55:38, 55:40								
*44:06, 51:42, 51:45, 53:06								8
*46:11, 54:03, 56:01:01-56:01:04, 56:07- 56:08, 56:14-56:16, 56:20, 56:22, 56:24, 56:26-56:29					5			
*46:18, 54:01-54:02, 54:04-54:05N, 54:07- 54:08N, 54:11-54:19, 54:21-54:23, 55:02:01-55:02:06, 55:07, 55:10, 55:12- 55:13, 55:16, 55:19, 55:23, 55:26-55:27, 55:30, 55:32, 55:34-55:35, 55:39, 55:41- 55:43					5			
*49:03						6		8
*49:09	1							
*51:01:01, 51:01:03-51:01:07, 51:01:10- 51:01:14, 51:01:16-51:01:17, 51:03, 51:07:01, 51:08, 51:11N-51:12, 51:20, 51:24:01-51:24:03, 51:26-51:30, 51:32- 51:33, 51:35, 51:38-51:39, 51:41N, 51:43- 51:44N, 51:48-51:49, 51:51-51:53, 51:55, 51:57-51:58, 51:60-51:61, 51:65-51:72, 51:74-51:77, 51:79-51:80, 51:83-51:84, 51:86-51:88, 51:91, 51:95-51:96, 58:08	1							8
*51:01:02, 51:01:09, 51:07:02, 51:89, 52:18	1							
*51:01:08, 51:01:15, 51:13:01-51:14, 51:50, 51:63	1							8
*51:02:01, 51:02:04, 51:04, 51:06, 51:23, 51:46, 51:56, 51:59, 51:64								8
Well No.	1	2	3	4	5	6	7	8

Lot No.: **48K**

Lot-specific information

www.olerup-ssp.com

325	200	150	145	135	380	245	Length of spec. PCR product
9	10	11	12	13	14	15	Well No.
		11					*37:01:01-37:01:05, 37:01:07-37:04:02, 37:07, 37:09-37:10, 37:12-37:13, 37:15- 37:23, 44:83, 53:17
			12	13			*37:05
		11	w				*37:14
						15	*39:06:01-39:06:02, 39:34, 39:57, 59:01, 59:03, 59:05
	10						*39:33
							*40:01:11, 40:58
					14		*40:109
9						15	*42:04, 54:20, 55:01:01-55:01:06, 55:03, 55:05, 55:11, 55:15, 55:17, 55:20-55:21, 55:25, 55:28-55:29, 55:33, 55:36, 55:38, 55:40
		11					*44:06, 51:42, 51:45, 53:06
9	10						*46:11, 54:03, 56:01:01-56:01:04, 56:07- 56:08, 56:14-56:16, 56:20, 56:22, 56:24, 56:26-56:29
9						15	*46:18, 54:01-54:02, 54:04-54:05N, 54:07- 54:08N, 54:11-54:19, 54:21-54:23, 55:02:01-55:02:06, 55:07, 55:10, 55:12- 55:13, 55:16, 55:19, 55:23, 55:26-55:27, 55:30, 55:32, 55:34-55:35, 55:39, 55:41- 55:43
		11					*49:03
							*49:09
	10	11				14	*51:01:01, 51:01:03-51:01:07, 51:01:10- 51:01:14, 51:01:16-51:01:17, 51:03, 51:07:01, 51:08, 51:11N-51:12, 51:20, 51:24:01-51:24:03, 51:26-51:30, 51:32- 51:33, 51:35, 51:38-51:39, 51:41N, 51:43- 51:44N, 51:48-51:49, 51:51-51:53, 51:55, 51:57-51:58, 51:60-51:61, 51:65-51:72, 51:74-51:77, 51:79-51:80, 51:83-51:84, 51:86-51:88, 51:91, 51:95-51:96, 58:08
	10	11				14	*51:01:02, 51:01:09, 51:07:02, 51:89, 52:18
	10	11					*51:01:08, 51:01:15, 51:13:01-51:14, 51:50, 51:63
	10	11				14	*51:02:01, 51:02:04, 51:04, 51:06, 51:23, 51:46, 51:56, 51:59, 51:64
9	10	11	12	13	14	15	Well No.

Lot No.: **48K**

Lot-specific information

www.olerup-ssp.com

Length of spec.	265	190	225	170	210	95	210	210
PCR product								
Well No.	1	2	3	4	5	6	7	8
*51:02:02, 53:19, 58:28								
*51:02:03, 51:34, 51:81								8
*51:05					w			
*51:09:01, 51:19, 51:73	1				5			8
*51:09:02	1				5			
*51:10					5			8
*51:15					5			
*51:16-51:18, 51:82, 51:94	1							8
*51:21	1							8
*51:22	1			4				8
*51:31	1				5			8
*51:36								8
*51:37, 51:85, 51:90, 51:92	1							8
*51:40					5			8
*51:54					w			
*51:62								8
*51:78	1							
*51:93					5			
*52:01:01, 52:01:03, 52:01:05, 52:04- 52:05, 52:07, 52:13, 52:15, 52:17, 52:19	1					6		
*52:01:02, 52:01:04, 52:06:01-52:06:02, 52:21	1					6		8
*52:02	1							8
*52:03					5	6		8
*52:08	1					6		
*52:09	1		3			6		8
*52:10	1				5	6		
*52:11						6		
*52:12	1					6		
*52:14, 52:20	1					6		
*52:16	1							
*53:05, 53:16			3					
*54:10, 55:37					w			
*55:08, 56:02, 56:04, 56:13, 56:25, 82:01- 82:03								
*55:18, 56:23			3		5			
*55:31			3					
*56:05:01	1	2					7	
*56:05:02	1							
Well No.	1	2	3	4	5	6	7	8

Lot No.: **48K**

Lot-specific information

www.olerup-ssp.com

325	200	150	145	135	380	245	Length of spec. PCR product
9	10	11	12	13	14	15	Well No.
	10	11			14		*51:02:02, 53:19, 58:28
		11			14		*51:02:03, 51:34, 51:81
	10	11			14		*51:05
	10	11			14		*51:09:01, 51:19, 51:73
	10	11			14		*51:09:02
		11			14		*51:10
	10	11					*51:15
		11			14		*51:16-51:18, 51:82, 51:94
		11			14	15	*51:21
	10	11			14		*51:22
		11			14		*51:31
		11			14	15	*51:36
		11					*51:37, 51:85, 51:90, 51:92
	10	11			14		*51:40
	10	11					*51:54
	10	11					*51:62
	10	11					*51:78
		11			14		*51:93
	10	11			14		*52:01:01, 52:01:03, 52:01:05, 52:04-52:05, 52:07, 52:13, 52:15, 52:17, 52:19
	10	11			14		*52:01:02, 52:01:04, 52:06:01-52:06:02, 52:21
	10				14		*52:02
	10	11			14		*52:03
		11			14		*52:08
	10	11			14		*52:09
	10	11			14		*52:10
	10	11			14		*52:11
		11					*52:12
	10	11					*52:14, 52:20
	10				14		*52:16
		11					*53:05, 53:16
9						15	*54:10, 55:37
9	10						*55:08, 56:02, 56:04, 56:13, 56:25, 82:01-82:03
						15	*55:18, 56:23
9						15	*55:31
9	10						*56:05:01
9	10						*56:05:02
9	10	11	12	13	14	15	Well No.

Length of spec.	265	190	225	170	210	95	210	210
PCR product								
Well No.	1	2	3	4	5	6	7	8
*56:06	1	2					7	
*56:21	1							
*57:02:01-57:03:02, 57:07, 57:09, 57:17								
*58:27								
*59:02					5			
*73:01-73:02	1				5			
HLA-B allele								
Well No.	1	2	3	4	5	6	7	8

325	200	150	145	135	380	245	Length of spec. PCR product
9	10	11	12	13	14	15	Well No.
9	10		12				*56:06
9	10				14		*56:21
	10				14		*57:02:01-57:03:02, 57:07, 57:09, 57:17
		11			14		*58:27
					14	15	*59:02
9							*73:01-73:02
							HLA-B allele
9	10	11	12	13	14	15	Well No.

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 addition, wells number 5 and 15 contain 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 or 1st intron, 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.

'w', might be weakly amplified.

CELL LINE VALIDATION SHEET																			
HLA-B*78 SSP primer set																			
				Well															
				1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	
				Prod. No.:	200957301	200957302	200957303	200957304	200957305	200957306	200957307	200957308	200957309	201076510	200957311	200957312	200957313	201076514	201076515
IHC cell line		B*																	
1	9001	SA	*07:02		-	-	-	-	-	-	-	-	+	-	-	-	-	-	-
2	9280	LK707	*52:01	*73:01	+	-	-	-	+	+	-	-	+	+	+	-	-	+	-
3	9011	E4181324	*52:01		+	-	-	-	-	+	-	-	-	+	+	-	-	+	-
4	9275	GU373	*15:10	*53:01	-	-	+	-	-	-	-	-	-	-	+	-	-	-	-
5	9009	KAS011	*37:01		-	-	-	-	-	+	-	-	-	-	+	-	-	-	-
6	9353	SM	*39:01	*51:01	+	-	-	-	-	-	-	+	-	+	+	-	-	+	-
7	9020	QBL	*18:01		-	-	-	-	-	-	-	-	-	-	-	+	-	-	-
8	9025	DEU	*35:01		-	-	+	-	-	-	-	-	-	-	-	+	-	-	-
9	9026	YAR	*38:01		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
10	9107	LKT3	*54:01		-	-	-	-	+	-	-	-	+	-	-	-	-	-	+
11	9051	PITOUT	*44:03		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
12	9052	DBB	*57:01		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
13	9025	JESTHOM	*27:05		-	-	-	-	-	-	-	-	+	-	-	-	-	-	-
14	9071	OLGA	*15:01	*15:20	-	-	+	-	-	-	-	-	-	-	-	-	-	-	-
15	9075	DKB	*40:01		-	-	+	-	-	-	-	-	-	-	-	-	-	-	-
16	9037	SWEIG007	*40:02		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
17	9282	CTM3953540	*08:01	*55:01	-	-	-	-	-	-	-	-	+	-	-	-	-	-	+
18	9257	32367	*14:01	*56:01	-	-	-	-	+	-	-	-	+	+	-	-	-	-	-
19	9038	BM16	*18:01		-	-	-	-	-	-	-	-	-	-	-	+	-	-	-
20	9059	SLE005	*40:01		-	-	+	-	-	-	-	-	-	-	-	-	-	-	-
21	9064	AMALA	*15:01		-	-	+	-	-	-	-	-	-	-	-	-	-	-	-
22	9056	KOSE	*35:03		-	-	+	-	-	-	-	-	-	-	-	+	-	-	-
23	9124	IHL	*40:02	*56:02	-	-	-	-	-	-	-	-	+	+	-	-	-	-	-
24	9035	JBUSH	*38:01		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
25	9049	IBW9	*14:02		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
26	9285	WT49	*58:01		-	-	-	-	-	-	-	-	-	-	+	-	-	-	-
27	9191	CH1007	*07:05	*51:01	+	-	-	-	-	-	-	+	+	+	-	-	-	+	-
28	9320	BEL5GB	*44:02	*44:03	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
29	9050	MOU	*44:03		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
30	9021	RSH	*42:01		-	-	-	-	-	-	-	-	+	-	-	-	-	-	-
31	9019	DUCAF	*18:01		-	-	-	-	-	-	-	-	-	-	-	+	-	-	-
32	9297	HAG	*41:02		-	-	+	-	-	-	-	-	-	-	-	-	-	-	-
33	9098	MT14B	*40:01		-	-	+	-	-	-	-	-	-	-	-	-	-	-	-
34	9104	DHIF	*38:01		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
35	9302	SSTO	*44:02		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
36	9024	KT17	*15:01	*35:01	-	-	+	-	-	-	-	-	-	-	-	+	-	-	-
37	9065	HKKB	*07:02		-	-	-	-	-	-	-	-	+	-	-	-	-	-	-
38	9099	LZL	*15:01		-	-	+	-	-	-	-	-	-	-	-	-	-	-	-
39	9315	CML	*08:01	*27:05	-	-	-	-	-	-	-	-	+	-	-	-	-	-	-
40	9134	WHONP199	*13:02	*46:01	-	-	-	-	+	-	-	-	+	-	-	-	-	-	-
41	9055	H0301	*14:02		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
42	9066	TAB089	*46:01		-	-	-	-	-	-	-	-	+	-	-	-	-	-	-
43	9076	T7526	*46:01		-	-	-	-	-	-	-	-	+	-	-	-	-	-	-
44	9057	TEM	*38:01		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
45	9239	SHJO	*42:01	*50:01	-	-	+	-	-	-	-	-	+	-	-	-	-	-	-
46	9013	SCHU	*07:02		-	-	-	-	-	-	-	-	+	-	-	-	-	-	-
47	9045	TUBO	*51:01		+	-	-	-	-	-	-	+	-	+	+	-	-	+	-
48	9303	TER-ND	*35:01	*44:03	-	-	+	-	-	-	-	-	-	-	-	+	+	-	-

CERTIFICATE OF ANALYSIS

Olerup SSP® HLA-B*78 SSP

Product number: 101.551-06u – without Taq polymerase
Lot number: 48K
Expiry date: 2012-September-01
Number of tests: 6
Number of wells per test: 15

Well specifications:

Well No.	Production No.	Well No.	Production No.
1	2009-573-01	9	2009-573-09
2	2009-573-02	10	2010-765-10
3	2009-573-03	11	2009-573-11
4	2009-573-04	12	2009-573-12
5	2009-573-05	13	2009-573-13
6	2009-573-06	14	2010-765-14
7	2009-573-07	15	2010-765-15
8	2009-573-08		

The specificity of each primer solution of the HLA-B*78 primer set has been tested against 48 well characterized cell line DNAs.

No DNAs carrying the alleles to be amplified by primer solution 4 and 13 were available. The specificities of the primers in primer solution 4 were tested by separately adding one additional 3'-primer, respectively one additional 5'-primer. In primer solution 13, only the 5'-primer could be tested, the 3'-primer was not possible to test

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

Date of approval: 2011-December-02

Approved by:

Production Quality Control

Declaration of Conformity

Product name: Olerup SSP® HLA-B*78
Product number: 101.551-06u
Lot number: 48K

Intended use: HLA-B*78 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 9001:2008 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, Franzengatan 5, SE-112 51 Stockholm, Sweden.

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

Stockholm, Sweden
2011-December-02

Ann-Cathrin Jareman
Head of QA and Regulatory Affairs

Lot No.: **48K**

Lot-specific information

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