

101.418-12/04 – including *Taq* pol., IFU-01
101.418-12u/04 – without *Taq* pol., IFU-02

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

Lot No.: **30X**

Lot-specific information
Olerup SSP® HLA-A*68

Product number:	101.418-12/04 – including <i>Taq</i> pol. 101.418-12u/04u – without <i>Taq</i> pol.
Lot number:	30X
Expiry date:	2017-March-01
Number of tests:	12 tests – Product No. 101.418-12/12u 4 tests – Product No. 101.418-04/04u
Number of wells per test:	47+1
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. 30X.

**CHANGES COMPARED TO THE PREVIOUS OLERUP SSP®
HLA-A*68 LOT (10S)**

The HLA-A*68 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

A well containing Negative Control primer pairs has been added.

The format of the Product Insert and Worksheet have been changed.

Two wells have been added to HLA-A*68, wells **47 to 48**.

¹As described in section Uniquely Identified Alleles.

The HLA-A*68 primer set, specificity and interpretation tables have been updated for the HLA-A alleles described since the previous *Olerup SSP®* HLA-A*68 lot was made (**Lot No. 10S**). The kit design is based on IMGT/HLA database 3.16.0.

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

Well	5'-primer	3'-primer	rationale
14	Exchanged		5'-primer exchanged to decrease primer oligomer formation and to improve HLA-specific amplification, exchanged positive control primer pair.
15	-	Added	3'-primer added from well 40.
18	-	Added	3'-primer added for the A*68:21:02 allele.
22	-	Added	3'-primer added for the A*68:01:14 allele.
26	-	Added	3'-primer added from well 40.
29	-	Added	3'-primer added for the A*68:63 allele.
32	Exchanged	-	5'-primer exchanged to decrease tendency of primer oligomer formation.
37	-	Added	3'-primer added from well 38.
38	-	Moved, added	3'-primer moved to well 37, 3'-primer added for the A*68:91 allele.
40	Removed, added	Added	3'-primer moved to wells 15 and 26, 5'-primer removed, primer pair added for the A*68:106 allele.
42	Added	Added	Primer pair added for the A*68:99 allele.
44	Added	Added	Primer pair added for the A*68:75:02 allele.
45	Added	Added	Primer pairs added for the A*68:72 and A*68:86 alleles.
47	New	New	New primer pair for the A*68:104 allele.
48	-	-	Negative Control

Change in revision R01 compared to R00:

1. Primer mix 23 weakly amplifies the A*68:26 allele. This has been corrected in the Specificity and Interpretation Tables.

Change in revision R02 compared to R01:

1. Primer mix 9 does not amplify the A*68:18N allele. This has been corrected in the Specificity and Interpretation Tables. Thus, this lot of the HLA-A*68 subtyping kit cannot distinguish the A*68:02:01:01-68:02:07, 68:62, 68:64, 68:74, 68:77-68:78, 68:82 and 68:97 alleles and the A*68:18N allele.

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Well **48** contains Negative Control primer pairs, that will amplify more than 95% of the *Olerup SSP*® HLA Class I, DRB, DQB1, DPB1 and DQA1 amplicons as well as all the amplicons generated by the control primer pairs matching the human growth hormone gene.

HLA-specific PCR product sizes range from 75 to 200 base pairs.
The PCR product generated by the positive control primer pair is 430 base pairs.

Length of PCR product	105	200	105	80	75	80	85
5'-primer¹	164	340	440	45	45	43	36
	5'-CAC ^{3'}	5'-Agg ^{3'}	5'-TTA ^{3'}	5'-Tgg ^{3'}	5'-Tgg ^{3'}	5'-Tgg ^{3'}	5'-TAC ^{3'}
							36
							5'-TAT ^{3'}
3'-primer²	231	2nd I	507	59	58	57	47
	5'-TgC ^{3'}	5'-AAA ^{3'}	5'-TTg ^{3'}	5'-CTC ^{3'}	5'-ggC ^{3'}	5'-CTC ^{3'}	5'-ACA ^{3'}
							48
							5'-gCA ^{3'}
							48
							5'-gCC ^{3'}
							52
							5'-TgT ^{3'}
A*	+	+	+				
B*	+	+	+				
C*	+	+	+				
DRB1				+	+		
DRB3				+	+		
DRB5				+			
DQB1					+		
DPB1						+	
DQA1							+

¹The nucleotide position for HLA class I genes and the codon for HLA class II genes, in the 2nd or 3rd exon, matching the specificity-determining 3'-end of the primer is given. Nucleotide and codon numbering as on the www.ebi.ac.uk/imgt/hla web site. The sequence of the 3 terminal nucleotides of the primer is given.

²The nucleotide position for HLA class I genes and the codon for HLA class II genes, in the 2nd or 3rd exon or the 2nd intron, matching the specificity-determining 3'-end of the primer is given in the anti-sense direction. Nucleotide and codon numbering as on the www.ebi.ac.uk/imgt/hla web site. The sequence of the 3 terminal nucleotides of the primer is given.

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PRODUCT DESCRIPTION

HLA-A*68 SSP subtyping

CONTENT

The primer set contains 5'- and 3'-primers for identifying the A*68:01 to A*68:112 alleles. The HLA-A*69:01 to 69:03 alleles are also identified.

PLATE LAYOUT

Each test consists of 48 PCR reactions in a 48 well cut PCR plate.

1	2	3	4	5	6	7	8
9	10	11	12	13	14	15	16
17	18	19	20	21	22	23	24
25	26	27	28	29	30	31	32
33	34	35	36	37	38	39	40
41	42	43	44	45	46	47	NC

The 48 well cut PCR plate is marked with ‘HLA-A*68’ in silver gray ink.

Well No. 1 is marked with the Lot No ‘30X’.

Wells 1 to 47 – HLA-A*68 high resolution primers.

Well 48 – Negative Control (NC).

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 48 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

Due to the sharing of sequence motifs between HLA-A alleles non-HLA-A*68 alleles will be amplified by primer mixes 1, 2, 4 to 7, 9 to 11, 13 to 27, 29 to 32, 34, 36 to 38, 41 to 43, 45 and 46. In addition, a few HLA-B and HLA-C alleles will be amplified by primer mixes 1, 10, 17, 21, 23 and 29.

For further details see Specificity Table.

UNIQUELY IDENTIFIED ALLELES

All the HLA-A*68 alleles, i.e. **A*68:01 to A*68:112 as well as the A*69:01 to 69:03 allele**, recognized by the HLA Nomenclature Committee in April 2014^{1,2} will be amplified by the primers in the HLA-A*68 subtyping kit³.

The HLA-A*68 kit enables separation of the confirmed HLA-A*68 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-A*68 alleles is listed below.

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The HLA-A*68 kit also enables identification of polymorphisms in exons outside of the region encoding the peptide binding domain and of null and alternatively expressed alleles.

The HLA-A*68 subtyping kit cannot distinguish the following silent mutations: the A*68:01:01:01-68:01:01:02, 68:01:03-68:01:05, 68:01:07-68:01:12 68:01:14 and 68:01:18-68:01:20, the A*68:01:02:01-68:01:02:02, 68:01:06 68:01:13 68:01:15-68:01:17 and 68:01:21-68:01:23, the A*68:02:01:01-68:02:07, the A*68:03:01-68:03:02 and the A*68:27:01-68:27:02 alleles.

¹HLA-A alleles listed on the IMGT/HLA web page 2014-April-14, release 3.16.0, www.ebi.ac.uk/imgt/hla.

²Alleles that have been deleted from or renamed in the official WHO HLA Nomenclature up to and including the last IMGT/HLA database release can be retrieved from web page <http://hla.alleles.org/alleles/deleted.html>.

³This lot of the HLA-A*68 subtyping kit cannot distinguish the A*68:02:01:01-68:02:07, 68:62, 68:64, 68:74, 68:77-68:78, 68:82 and 68:97 alleles and the A*68:18N allele.

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ALLELE CONFIRMATION STATUS

Allele	Status ¹	Allele	Status ¹	Allele	Status ¹	Allele	Status ¹
A*68:01:01:01	Confirmed	A*68:07	Confirmed	A*68:43	Unconfirmed	A*68:82	Unconfirmed
A*68:01:01:02	Unconfirmed	A*68:08:01	Unconfirmed	A*68:44	Confirmed	A*68:83	Unconfirmed
A*68:01:02:01	Confirmed	A*68:08:02	Confirmed	A*68:45	Unconfirmed	A*68:84	Unconfirmed
A*68:01:02:02	Unconfirmed	A*68:09	Unconfirmed	A*68:46	Confirmed	A*68:85	Unconfirmed
A*68:01:03	Unconfirmed	A*68:10	Confirmed	A*68:47	Unconfirmed	A*68:86	Confirmed
A*68:01:04	Unconfirmed	A*68:11N	Confirmed	A*68:48	Unconfirmed	A*68:87	Unconfirmed
A*68:01:05	Unconfirmed	A*68:12	Confirmed	A*68:49N	Unconfirmed	A*68:88	Unconfirmed
A*68:01:06	Confirmed	A*68:13:01	Confirmed	A*68:50	Unconfirmed	A*68:89	Unconfirmed
A*68:01:07	Unconfirmed	A*68:13:02	Unconfirmed	A*68:51	Unconfirmed	A*68:90	Unconfirmed
A*68:01:08	Confirmed	A*68:14	Unconfirmed	A*68:52	Unconfirmed	A*68:91	Confirmed
A*68:01:09	Unconfirmed	A*68:15	Confirmed	A*68:53	Confirmed	A*68:92	Unconfirmed
A*68:01:10	Unconfirmed	A*68:16	Confirmed	A*68:54	Confirmed	A*68:93	Unconfirmed
A*68:01:11	Unconfirmed	A*68:17	Confirmed	A*68:55	Confirmed	A*68:94N	Unconfirmed
A*68:01:12	Unconfirmed	A*68:18N	Unconfirmed	A*68:56	Unconfirmed	A*68:95	Unconfirmed
A*68:01:13	Unconfirmed	A*68:19	Confirmed	A*68:57	Unconfirmed	A*68:96	Confirmed
A*68:01:14	Unconfirmed	A*68:20	Unconfirmed	A*68:58	Unconfirmed	A*68:97	Unconfirmed
A*68:01:15	Unconfirmed	A*68:21:01	Unconfirmed	A*68:59N	Confirmed	A*68:98	Unconfirmed
A*68:01:16	Unconfirmed	A*68:21:02	Unconfirmed	A*68:60	Confirmed	A*68:99	Confirmed
A*68:01:17	Unconfirmed	A*68:22	Unconfirmed	A*68:61	Unconfirmed	A*68:100	Unconfirmed
A*68:01:18	Unconfirmed	A*68:23	Unconfirmed	A*68:62	Unconfirmed	A*68:101	Unconfirmed
A*68:01:19	Unconfirmed	A*68:24	Confirmed	A*68:63	Unconfirmed	A*68:102	Unconfirmed
A*68:01:20	Confirmed	A*68:25	Confirmed	A*68:64	Unconfirmed	A*68:103	Unconfirmed
A*68:01:21	Unconfirmed	A*68:26	Unconfirmed	A*68:65	Confirmed	A*68:104	Confirmed
A*68:01:22	Confirmed	A*68:27:01	Confirmed	A*68:66	Unconfirmed	A*68:105	Unconfirmed
A*68:01:23	Unconfirmed	A*68:27:02	Unconfirmed	A*68:67	Confirmed	A*68:106	Confirmed
A*68:02:01:01	Confirmed	A*68:28	Unconfirmed	A*68:68	Confirmed	A*68:107	Unconfirmed
A*68:02:01:02	Unconfirmed	A*68:29	Unconfirmed	A*68:69	Unconfirmed	A*68:108	Unconfirmed
A*68:02:01:03	Confirmed	A*68:30	Unconfirmed	A*68:70	Unconfirmed	A*68:109	Unconfirmed
A*68:02:02	Confirmed	A*68:31	Confirmed	A*68:71	Unconfirmed	A*68:110	Unconfirmed
A*68:02:03	Confirmed	A*68:32	Unconfirmed	A*68:72	Confirmed	A*68:111	Unconfirmed
A*68:02:04	Confirmed	A*68:33	Confirmed	A*68:73	Unconfirmed	A*68:112	Unconfirmed
A*68:02:05	Unconfirmed	A*68:34	Unconfirmed	A*68:74	Unconfirmed		
A*68:02:06	Unconfirmed	A*68:35	Confirmed	A*68:75:01	Unconfirmed		
A*68:02:07	Unconfirmed	A*68:36	Confirmed	A*68:75:02	Unconfirmed		
A*68:03:01	Confirmed	A*68:37	Confirmed	A*68:76	Unconfirmed		
A*68:03:02	Unconfirmed	A*68:38	Unconfirmed	A*68:77	Unconfirmed		
A*68:03:03	Confirmed	A*68:39	Unconfirmed	A*68:78	Unconfirmed		
A*68:04	Unconfirmed	A*68:40	Confirmed	A*68:79	Unconfirmed		
A*68:05	Confirmed	A*68:41	Unconfirmed	A*68:80	Confirmed		
A*68:06	Confirmed	A*68:42	Unconfirmed	A*68:81	Unconfirmed		

¹Allele status “confirmed” or “unconfirmed” as listed on the IMGT/HLA web page 2014-April-14, release 3.16.0, www.ebi.ac.uk/imgt/hla.

RESOLUTION IN HOMO- AND HETEROZYGOTES

Results file with resolution in HLA-A*68 homo- and heterozygotes is available upon request.

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SPECIFICITY TABLE

HLA-A*68 SSP subtyping

Specificities and sizes of the PCR products of the 47+1 primer mixes used for HLA-A*68 SSP subtyping

Primer Mix	Size of spec. PCR product ¹	Size of control band ²	Amplified HLA-A*68 alleles ³	Other amplified HLA-A alleles ⁴
1 ⁶	195 bp	800 bp	*68:01:01:01-68:02:07, 68:06-68:14, 68:16-68:19, 68:21:01-68:30, 68:32-68:35, 68:37-68:45, 68:46 ^w , 68:47-68:56, 68:58-68:83, 68:85-68:89, 68:91, 68:93-68:108, 68:110-68:112	*01:13, 02:34-02:35:03, 02:56:01-02:56:02, 02:62, 02:78, 02:103, 03:01:01:01-03:01:08, 03:01:10-03:01:22, 03:01:24-03:07, 03:09-03:31, 03:33-03:35, 03:37-03:40, 03:42-03:56, 03:58-03:88, 03:90-03:106, 03:109-03:110, 03:112-03:141, 03:143-03:151, 03:153-03:160, 03:162N-03:171, 03:174-03:175, 03:177, 03:179-03:188, 11:01:01-11:01:50, 11:01:52-11:01:62, 11:03-11:13, 11:15:01-11:15:02, 11:20-11:27, 11:29-11:37, 11:39, 11:41-11:44, 11:46-11:50Q, 11:52Q, 11:54-11:56, 11:58-11:70:02, 11:72-11:76, 11:79-11:97, 11:99N-11:100, 11:102-11:105, 11:107-11:109N, 11:112, 11:114-11:120, 11:122-11:139, 11:141-11:146, 11:148-11:160, 11:162-11:167, 11:169-11:175, 11:177, 11:179-11:189, 11:191-11:192, 24:19, 30:18, 30:55, 34:01:01-34:11, 66:01:01-66:02, 66:04, 66:06-66:10, 66:12-66:14, 66:16-66:19, 69:01-69:03, 74:13, C*03:82
2	435 bp	1070 bp	*68:01:01:01-68:01:23, 68:03:01-68:05, 68:08:01-68:09, 68:11N-68:12, 68:16-68:17, 68:19-68:26, 68:29, 68:32-68:33, 68:35-68:39, 68:41-68:43, 68:45-68:47, 68:50, 68:52, 68:55-68:59N, 68:63, 68:65, 68:68-68:73, 68:76, 68:79, 68:83-68:85, 68:87, 68:89-68:91, 68:93-68:96, 68:98-68:103, 68:105-68:109, 68:111-68:112	*01:51, 03:24, 11:10, 33:18:01-33:18:02, 34:02:01-34:04, 34:07-34:09
3	195 bp	1070 bp	*68:02:01:01-68:02:07, 68:15, 68:18N, 68:28, 68:31, 68:34, 68:39-68:40, 68:44, 68:48-68:49N, 68:51,	

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		68:53-68:54, 68:60-68:62, 68:64, 68:67, 68:74, 68:77-68:78, 68:80-68:82, 68:86, 68:92, 68:97, 68:110		
4	180 bp 225 bp	1070 bp	*68:30 *68:03:01-68:03:02, 68:05, 68:20	*02:06:05 *02:06:05
5	140 bp 235 bp	800 bp	*68:25 *68:04	*02:339, 02:407, 02:449 *11:98, 33:51, 66:15
6	230 bp	1070 bp	*68:05, 68:15, 68:20	*02:06:05, 02:122, 02:143
7	145 bp	1070 bp	*68:06, 68:32	*02:52
8	160 bp 240 bp	800 bp	*68:07 *68:46	
9⁷	150 bp 195 bp 250 bp	800 bp	*68:47 *68:08:01-68:08:02, 68:63,	*25:19, 26:43:01-26:43:02, 34:03 ² - 34:04 ² , 34:06 ² -34:10N ² , 66:06
10	165 bp	800 bp	*68:09, 68:26	*01:12, 01:19, 01:127, 01:136, 03:10, 03:167, 11:01:01-11:01:34, 11:01:36- 11:01:56, 11:01:58-11:07, 11:10- 11:21N, 11:26-11:27, 11:29-11:30, 11:32-11:34, 11:36-11:43, 11:45- 11:49, 11:51-11:52Q, 11:54-11:58, 11:60-11:93, 11:95-11:111, 11:114- 11:115N, 11:117-11:129, 11:131- 11:139, 11:141-11:157, 11:159- 11:161, 11:163-11:175, 11:177- 11:182Q, 11:184-11:190, 11:192, 24:17, 24:41, 24:208, 29:05, 29:33, C*16:67
11⁹	160 bp 200 bp	800 bp	*68:17 *68:10, 68:14	*02:358
12	205 bp 405 bp	1070 bp	*68:38, 68:110 *68:11N	
13	210 bp 240 bp	800 bp	*68:12, 68:50 *68:51	*26:18
14	400 bp	800 bp	*68:13:01-68:13:02	*02:217:02, 02:419
15	145 bp 200 bp	1070 bp	*68:19, *68:14, 68:80, 68:81	*02:237, 03:17:01, 03:171, 24:18, 24:204, 24:213 *02:121, 02:425, 23:47, 24:141, 24:234
16	215 bp	1070 bp	*68:15, 68:31, 68:40	*02:122, 02:143
17⁶	175 bp	1070 bp	*68:02:01:01-68:02:07, 68:15, 68:18N, 68:20, 68:27:01-68:28, 68:31, 68:34, 68:40, 68:44, 68:48-68:49N, 68:51, 68:53-68:54, 68:60-68:62, 68:64, 68:67, 68:74, 68:77-68:78, 68:80-68:82, 68:86, 68:92, 68:97, 68:104, 68:110	*02:02 ^w , 02:03:01-02:03:07, 02:05:01 ^w -02:05:06 ^w , 02:08 ^w , 02:22:01-02:22:02, 02:47 ^w , 02:49- 02:50, 02:63 ^w , 02:102 ^w , 02:104, 02:115 ^w , 02:117, 02:122, 02:135- 02:136, 02:148, 02:154 ^w -02:155 ^w , 02:172 ^w , 02:179 ^w , 02:186 ^w , 02:191, 02:209 ^w , 02:230, 02:232 ^w , 02:253, 02:258, 02:264, 02:267, 02:281, 02:286 ^w , 02:315, 02:320 ^w , 02:323,

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				02:324 ^w , 02:337 ^w , 02:344 ^w , 02:345, 02:355, 02:359 ^w , 02:370, 02:373N ^w , 02:376, 02:382, 02:402, 02:412, 02:413 ^w , 02:421 ^w , 02:427, 02:431, 02:433 ^w , 02:447, 02:463, 02:466, 02:480, 02:484 ^w , 02:489 ^w , 02:492 ^w , 02:495 ^w -02:496 ^w , 02:505, 23:02, 24:06, 24:87, 24:138, 24:167, 25:01:01-25:03, 25:05-25:11, 25:13-25:18, 25:20-25:25, 26:01:01-26:01:04, 26:01:07-26:07:02, 26:09-26:26, 26:28-26:39, 26:41-26:42, 26:45-26:47, 26:49-26:66, 26:68-26:72, 26:74-26:80, 26:82-26:85, 26:87-26:90, 26:92, 26:94-26:102, 31:30, 32:10, 34:01:01-34:01:02, 34:05, 34:11, 43:01, 66:01:01-66:05, 66:07-66:19, B*07:197, B*27:25, B*27:45, B*27:108, B*27:115, C*02:07
18	200 bp	800 bp	*68:26, 68:65	*01:01:01:01-01:04N, 01:06-01:29, 01:31N-01:33, 01:35-01:71, 01:73-01:78, 01:80-01:101, 01:103-01:144, 01:146-01:155, 03:18, 03:97, 03:122, 03:135, 03:167, 11:27, 11:38-11:39, 11:94, 23:53, 24:17, 24:41, 24:208, 29:03, 29:33, 80:01:01:01-80:03
	225 bp		*68:21:01-68:21:02	*01:86, 03:04:01-03:04:03, 11:153:01-11:153:02
19	325 bp	1070 bp	*68:22	*33:63
20 ⁵	90 bp	1070 bp	*68:23, 68:105	*01:20, 01:66, 01:73, 01:130, 02:114, 02:246, 02:279, 03:95, 03:177, 29:22
21	165 bp	1070 bp	*68:28	*02:49, 24:87, 66:19, B*07:197, B*27:45, B*27:108
	215 bp		*68:24	
22	170 bp	800 bp	*68:01:01:01-68:01:23, 68:03:01-68:05, 68:07, 68:10-68:14, 68:16-68:17, 68:19-68:25, 68:29-68:30, 68:32-68:33, 68:35-68:39, 68:41-68:43, 68:45-68:47, 68:50, 68:52, 68:55-68:59N, 68:65-68:66, 68:68-68:73, 68:75:01-68:76, 68:79, 68:83-68:85, 68:87-68:91, 68:93-68:96, 68:98-68:103, 68:105-68:107, 68:109, 68:111-68:112	*01:01:01:01 ^w -01:04N ^w , 01:07 ^w -01:11N ^w , 01:13 ^w -01:18N ^w , 01:20 ^w -01:24 ^w , 01:26 ^w -01:29 ^w , 01:31N ^w -01:33 ^w , 01:35 ^w -01:78 ^w , 01:80 ^w -01:97 ^w , 01:98, 01:99 ^w -01:126 ^w , 01:128 ^w -01:135 ^w , 01:137 ^w -01:144 ^w , 01:146 ^w -01:155 ^w , 02:229, 03:18 ^w , 03:50, 03:66, 11:08, 11:44, 11:183, 11:191, 29:01:03, 29:28, 36:01 ^w , 36:02, 36:03 ^w -36:05 ^w
23	185 bp	1070 bp	*68:01:01:01-68:01:23, 68:03:01-68:05, 68:07-68:14, 68:16-68:17, 68:19-68:25, 68:26 ^w , 68:29-68:30, 68:32-68:33, 68:35-68:39, 68:41-68:43, 68:45-68:47, 68:50,	*02:114, 02:229, 02:246, 02:279, 03:01:01:01-03:01:29, 03:01:31-03:01:49, 03:02:01-03:17:02, 03:20-03:39, 03:41-03:42, 03:44:01-03:52, 03:54-03:81, 03:83-03:96, 03:99-03:102, 03:104, 03:106-03:121, 03:123:01-03:134, 03:136-03:166,

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Lot-specific information

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			68:52, 68:55-68:59N, 68:63, 68:66, 68:68- 68:73, 68:75:01-68:76, 68:79, 68:83-68:85, 68:87-68:91, 68:93-68:96, 68:98-68:103, 68:105- 68:109, 68:111-68:112	03:168N-03:169, 03:171-03:185, 03:187-03:188, 11:04, 11:35, 11:130, 29:01:01:01-29:02:01:02, 29:02:03- 29:02:14, 29:04-29:31, 29:34-29:66, 30:26, 31:03-31:04, 31:06, 32:04, 32:30, 32:32, 33:18:01-33:18:02, 34:02:01-34:04, 34:07-34:10N, 36:01-36:03, 36:05, C*16:67
24	375 bp	1070 bp	*68:105	*02:55, 26:22, 33:22, 66:09, 69:01- 69:03
25	240 bp	1070 bp	*68:29	*02:243:01-02:243:02, 24:82
26⁵	100 bp 190 bp	1070 bp	*68:49N *68:33, 68:80	*33:03:17, 24:141
27	185 bp 235 bp	1070 bp	*68:34 *68:43	*02:385
28	200 bp 230 bp	1070 bp	*68:35, 68:38, 68:110 *68:44	
29^{5,6}	80 bp	800 bp	*68:42, 68:54, 68:61, 68:63	*02:03:01-02:03:07, 02:26, 02:99, 02:117, 02:148, 02:171:02, 02:253, 02:258, 02:264, 02:281, 02:315, 02:323, 02:345, 02:355, 02:370, 02:393, 02:402, 02:412, 02:427, 02:431, 02:447, 02:463, 02:466, 02:480, 02:489, 02:505, 03:01:38, 03:123:02, 11:25, 11:191, 26:01:17 B*44:03:19-44:03:20
30	250 bp 145 bp	1070 bp	*68:36-68:37	*02:117, 02:135, 25:01:01-25:07, 25:10-25:25, 26:01:01-26:01:14, 26:01:16-26:01:25, 26:01:27- 26:02:01, 26:03:01-26:10, 26:12- 26:13, 26:15-26:17, 26:19-26:27, 26:29-26:39, 26:41-26:43:02, 26:45- 26:46, 26:48-26:72, 26:74-26:102, 34:01:01-34:01:02, 34:05, 34:11, 43:01, 66:01:01-66:15, 66:17, 66:19
31⁶	245 bp 220 bp	1070 bp	*68:37 *68:48, 68:50	*25:01:01-25:04, 25:06-25:07, 25:09- 25:21, 25:23-25:25, 26:01:01- 26:01:25, 26:01:27-26:02:01, 26:03:01-26:10, 26:12-26:43:02, 26:45-26:46, 26:48-26:53, 26:55- 26:102, 34:01:01-34:01:02, 34:03 [?] - 34:11 [?] , 43:01, 66:01:01-66:15, 66:17, 66:19
32^{5,8}	120 bp	800 bp	*68:21:01, 68:53	*02:74:02, 02:159
33	150 bp	1070 bp	*68:16	
34	165 bp	1070 bp	*68:55	*03:163
35	140 bp	1070 bp	*68:59N	
36	195 bp	1070 bp	*68:01:01:01-68:01:01:02, 68:01:03-68:01:05, 68:01:07-68:01:12, 68:01:14, 68:01:18- 68:01:20, 68:03:03-68:04,	*11:10, 25:01:01-25:01:03, 25:01:05- 25:02, 25:04-25:14, 25:16, 25:18- 25:25, 26:01:01-26:01:29, 26:01:31- 26:06, 26:08-26:15, 26:17-26:18, 26:21-26:34, 26:36-26:43:02,

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			68:08:01, 68:21:02-68:22, 68:25-68:27:02, 68:35, 68:42-68:43, 68:50, 68:55-68:56, 68:58-68:59N, 68:63, 68:68, 68:72, 68:75:02, 68:79, 68:87-68:88, 68:94N, 68:103, 68:106	26:45-26:63, 26:65-26:71N, 26:73-26:82, 26:84-26:88, 26:90-26:91, 26:93-26:102, 33:51, 34:01:01-34:07, 34:09-34:11, 66:01:01-66:19, 69:01-69:03
37	145 bp 285 bp	1070 bp	*68:67 *68:26, 68:65	*26:29, 26:49, 66:10
38	165 bp	1070 bp	*68:91	*25:01:01-25:19, 25:21-25:22, 25:24-25:25, 26:01:01-26:09, 26:11N-26:43:02, 26:45-26:60N, 26:62-26:99, 26:101-26:102, 34:01:01-34:01:02, 34:03 ² -34:11 ² , 43:01, 66:01:01-66:19
39	180 bp	1070 bp	*68:68	
40⁵	95 bp	1070 bp	*68:106	
41	200 bp	1070 bp	*68:45	*24:24, 24:67, 26:16
42	130 bp	1070 bp	*68:60, 68:99	*11:164
43	365 bp	1070 bp	*68:94N	*26:71N
44	190 bp	1070 bp	*68:75:01-68:75:02, 68:96	
45	150 bp 220 bp 255 bp	1070 bp	*68:41 *68:72 *68:86	*01:126 *26:57
46⁵	110 bp	1070 bp	*68:52	*02:396
47	220 bp	1070 bp	*68:01:02:01-68:01:02:02, 68:01:06, 68:01:13, 68:01:15-68:01:17, 68:01:21-68:01:23, 68:06-68:07, 68:08:02-68:09, 68:11N-68:12, 68:13:02, 68:16-68:17, 68:19, 68:21:01, 68:23-68:24, 68:30, 68:32-68:33, 68:37-68:38, 68:41, 68:47, 68:52, 68:65-68:66, 68:69-68:70, 68:73, 68:75:01, 68:76, 68:83, 68:85, 68:91, 68:93, 68:95-68:96, 68:98-68:102, 68:104-68:105, 68:107-68:108, 68:111-68:112	
48¹⁰	-	-	Negative Control	

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-A*68 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 alleles listed are specified according to amplicon length.

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Lot-specific information

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 internal positive control bands are 1070 or 800 base pairs respectively, well distribution as outlined in the table. Well number 1 contains the shorter, 800 bp, internal positive control band. The well distribution of the internal controls can help in orientation of the kit on gel photo, as well as allow for kit identification. 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. Assumption is made that unknown sequences in these regions are conserved within allelic groups.

⁴Due to the sharing of sequence motifs between HLA-A alleles non-HLA-A*68 alleles will be amplified by primer mixes 1, 2, 4 to 7, 9 to 11, 13 to 27, 29 to 32, 34, 36 to 38, 41 to 43, 45 and 46. In addition, a few HLA-B and HLA-C alleles will be amplified by primer mixes 1, 10, 17, 21, 23 and 29.

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

⁶Primer mixes 1, 17, 29 and 31 may give rise to a lower yield of HLA-specific PCR product than the other HLA-A*68 primer mixes.

⁷Primer mix 9 may have tendencies of unspecific amplifications.

⁸Primer mix 32 have a tendency to giving rise to primer oligomer formation.

⁹Primer mix 11 may faintly amplify the A*02:06:05, 02:06:09, 02:122, 11:70, 11:121 and 26:07:01-26:07:02 alleles.

¹⁰Primer mix 48 contains a negative control, which will amplify more than 95% of HLA amplicons as well as the amplicons generated by control primer pairs. PCR product sizes range from 75 to 200 base pairs. The PCR product generated by the control primer pair is 430 base pairs.

'w, may be weakly amplified.

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

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Lot No.: **30X**

Lot-specific information
PRIMER SPECIFICATION

Well No.	1	2	3	4	5	6	7	8	9	10	11	12
Length of spec. PCR product	195	435	195	180	140	230	145	160	150	165	160	205
				225	235			240	195		200	405
									250			
Length of int. pos. control ¹	800	1070	1070	1070	800	1070	1070	800	800	800	800	1070
5'-primer(s) ²	127	261	106	102	98	102	145	98	106	413	98	47
	5'-ggg 3'	5'-AAC 3'	5'-CCA 3'	5'-ACT 3'	5'-CTA 3'	5'-ACT 3'	5'-CCA 3'	5'-CTA 3'	5'-CCA 3'	5'-CCg 3'	5'-CTA 3'	5'-g.T 3'
					397	106	414	418	2 nd I		419	376
					5'-gCC 3'	5'-CCA 3'	5'-gAA 3'	5'-AgC 3'	5'-CCT 3'		5'-ggT 3'	5'-gCA 3'
3'-primer(s) ³	282	413	259	240	290	292	259	299	216	538	256	282
	5'-gAC 3'	5'-gCC 3'	5'-gTT 3'	5'-ggA 3'	5'-CAA 3'	5'-gTg 3'	5'-gTT 3'	5'-TCA 3'	5'-gCT 3'	5'-CTg 3'	5'-CTC 3'	5'-gAC 3'
	282			282	497		506	539	479		538	538
	5'-gAC 3'			5'-gAg 3'	5'-Tgg 3'		5'-TgT 3'	5'-TCC 3'	5'-CCA 3'		5'-CCA 3'	5'-CCA 3'
				292					538			
				5'-gTg 3'					5'-CAg 3'			
									538			
									5'-CAA 3'			
Well No.	1	2	3	4	5	6	7	8	9	10	11	12

Well No.	13	14	15	16	17	18	19	20	21	22	23	24
Length of spec. PCR product	210	400	145	215	175	200	325	90	165	170	185	375
	240		200			225			215			
Length of int. pos. control ¹	800	1070	1070	1070	1070	800	1070	1070	1070	800	1070	1070
5'-primer(s) ²	2 nd I	28	453	106	395	413	317	362	102	413	413	261
	5'-CCT 3'	5'-TCg 3'	5'-AAA 3'	5'-CCA 3'	5'-gCA 3'	5'-CCg 3'	5'-gCA 3'	5'-gAg 3'	5'-ACT 3'	5'-CCg 3'	5'-CCg 3'	5'-AAC 3'
					413			362	413			
					5'-CCA 3'			5'-gAg 3'	5'-CCA 3'			
3'-primer(s) ³	497	255	555	278	539	570	362	413	275	539	559	355
	5'-TgA 3'	5'-Cgg 3'	5'-CCA 3'	5'-ggC 3'	5'-TCC 3'	5'-CCg 3'	5'-TCA 3'	5'-gCC 3'	5'-CCC 3'	5'-TCC 3'	5'-CgT 3'	5'-gAC 3'
	497		605	282		595			538	546		
	5'-TgA 3'		5'-gCC 3'	5'-gAg 3'		5'-CCg 3'			5'-CCg 3'	5'-TAA 3'		
	524		616	282		595						
	5'-CAC 3'		5'-CgC 3'	5'-gAg 3'		5'-CCT 3'						
Well No.	13	14	15	16	17	18	19	20	21	22	23	24

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Lot No.: **30X**

Lot-specific information

Well No.	25	26	27	28	29	30	31	32	33	34	35	36
Length of spec. PCR product	240	100	185	200	80	145	220	120	150	165	140	195
Length of int. pos. control ¹	1070	1070	1070	1070	800	1070	1070	800	1070	1070	1070	1070
5'-primer(s) ²	28 5'-TCg 3'	453 5'-AAA 3' 666 5'-gAA 3'	87 5'-ATA 3' 413 5'-CCA 3'	121 5'-gCT 3' 349 5'-CTg 3' 376 5'-gCA 3'	102 5'-ACT 3' 489 5'-gCA 3'	102 5'-ACT 3' 414 5'-CAg 3'	2 nd I 5'-CCT 3'	506 5'-gCA 3'	413 5'-CCg 3'	160 5'-ACT 3'	413 5'-CCg 3'	106 5'-CCg 3'
3'-primer(s) ³	97 5'-ggT 3'	512 5'-ACT 3' 605 5'-gCC 3' 808 5'-AgA 3'	282 5'-gAC 3' 559 5'-CAT 3'	282 5'-gAC 3' 538 5'-CCA 3'	308 5'-TCT 3' 317 5'-ggA 3' 527 5'-CCT 3' 527 5'-CCT 3'	308 5'-TCT 3' 517 5'-CgT 3'	506 5'-TgC 3'	578 5'-Tgg 3' 595 5'-CCg 3'	524 5'-CAA 3'	282 5'-gAC 3'	512 5'-CCT 3'	259 5'-gTT 3'
Well No.	25	26	27	28	29	30	31	32	33	34	35	36

Well No.	37	38	39	40	41	42	43	44	45	46	47
Length of spec. PCR product	145	165	180	95	200	130	365	190	150	110	220
Length of int. pos. control ¹	1070	1070	1070	1070	1070	1070	1070	1070	1070	1070	1070
5'-primer(s) ²	2 nd I 5'-CCT 3'	2 nd I 5'-CCT 3'	397 5'-gCg 3'	486 5'-ATA 3'	98 5'-CTC 3'	194 5'-CgA 3' 524 5'-CCC 3'	28 5'-TCg 3'	98 5'-CTA 3' 666 5'-gAA 3'	98 5'-CTA 3' 413 5'-CCg 3'	383 5'-ggA 3'	102 5'-ACT 3'
3'-primer(s) ³	430 5'-gCg 3'	453 5'-TCg 3'	538 5'-CCA 3'	538 5'-CCA 3'	259 5'-gTT 3'	282 5'-gAC 3' 616 5'-CgT 3'	224 5'-TCT 3'	256 5'-CCC 3' 809 5'-CAT 3'	277 5'-ggT 3' 311 5'-ggA 3' 521 5'-ggA 3'	453 5'-TCT 3'	282 5'-gAC 3'
Well No.	37	38	39	40	41	42	43	44	45	46	47

¹The internal positive control primer pairs amplify segments of the human growth hormone gene. The internal positive control bands are 1070 or 800 base pairs respectively, well distribution as outlined in the table. Well number 1 contains the shorter, 800 bp, internal positive control band. The well distribution of the internal controls can help in orientation of the kit on gel photo, as well as allow for kit identification. In the presence of a specific amplification the intensity of the control band often decreases.

²The nucleotide position 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 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.

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Lot No.: **30X**

Lot-specific information

CELL LINE VALIDATION SHEET																			
HLA-A*68 SSP subtyping kit ²																			
				Well															
				1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
				201297501	201297502	201297503	201297504	201297505	201297506	201297507	201297508	201297509	201297510	201297511	201297512	201297513	201438014	201441315	201297516
	IHWC cell line ¹	A*	Prod. No.:																
1	9001 SA	*24:02		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
2	9280 LK707	*02:01		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
3	9011 E4181324	*01:01		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
4	9275 GU373	*30:01		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
5	9009 KAS011	*01:01		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
6	9353 SM	*02:01	*26:03	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
7	9020 QBL	*26:01		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
8	9025 DEU	*31:01		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
9	9026 YAR	*26:01		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
10	9107 LKT3	*24:02		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
11	9051 PITOUT	*29:02		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
12	9052 DBB	*02:01		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
13	9004 JESTHOM	*02:01		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
14	9071 OLG A	*31:01		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
15	9075 DKB	*24:02		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
16	9037 SWEIG007	*29:02		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
17	9282 CTM3953540	*03:01	*80:01	+	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
18	9257 32367	*33:03	*74:01	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
19	9038 BM16	*02:01		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
20	9059 SLE005	*02:01		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
21	9064 AMALA	*02:17		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
22	9056 KOSE	*02:01		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
23	9124 IHL	*02:01	*34:01	+	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
24	9035 JBUSH	*32:01		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
25	9049 IBW9	*33:01		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
26	9285 WT49	*02:05		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
27	9191 CH1007	*24:10	*29:01	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
28	9320 BEL5GB	*02:01	*29:02	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
29	9050 MOU	*29:02		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
30	9021 RSH	*30:01	*68:02	+	-	+	-	-	-	-	-	-	-	-	-	-	-	-	-
31	9019 DUCAF	*30:02		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
32	9297 HAG	*02:01		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
33	9098 MT14B	*31:01		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
34	9104 DHIF	*31:01		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
35	9302 SSTO	*32:01		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
36	9024 KT17	*02:06	*11:01	+	-	-	-	-	-	-	-	-	+	-	-	-	-	-	-
37	9065 HHKB	*03:01		+	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
38	9099 LZL	*02:17		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
39	9315 CML	*01:01	*03:01	+	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
40	9134 WHONP199	*02:07	*30:01	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
41	9055 H0301	*03:01		+	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
42	9066 TAB089	*02:07		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
43	9076 T7526	*02:06	*02:07	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
44	9057 TEM	*66:01		+	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
45	9239 SHJO	*23:01	*24:02	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
46	9013 SCHU	*03:01		+	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
47	9045 TUBO	*02:16	*03:01	+	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
48	9303 TER-ND	*02:01	*11:01	+	-	-	-	-	-	-	-	-	+	-	-	-	-	-	-

101.418-12/04 – including *Taq* pol., IFU-01
101.418-12u/04 – without *Taq* pol., IFU-02

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“Instructions for Use” (IFU)

Lot No.: **30X**

Lot-specific information

CELL LINE VALIDATION SHEET																			
HLA-A*68 SSP subtyping kit²																			
			Prod. No.:	Well															
				17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32
	IHWC cell line¹	A*		201297517	201438018	201297519	201297520	201297521	201438022	201297523	201441324	201316025	201441326	201297527	201297528	201438029	201316030	201297531	201438032
1	9001 SA	*24:02		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
2	9280 LK707	*02:01		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
3	9011 E4181324	*01:01		-	+	-	-	-	W	-	-	-	-	-	-	-	-	-	-
4	9275 GU373	*30:01		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
5	9009 KAS011	*01:01		-	+	-	-	-	W	-	-	-	-	-	-	-	-	-	-
6	9353 SM	*02:01	*26:03	+	-	-	-	-	-	-	-	-	-	-	-	-	+	+	-
7	9020 QBL	*26:01		+	-	-	-	-	-	-	-	-	-	-	-	-	+	+	-
8	9025 DEU	*31:01		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
9	9026 YAR	*26:01		+	-	-	-	-	-	-	-	-	-	-	-	-	+	+	-
10	9107 LKT3	*24:02		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
11	9051 PITOUT	*29:02		-	-	-	-	-	-	+	-	-	-	-	-	-	-	-	-
12	9052 DBB	*02:01		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
13	9004 JESTHOM	*02:01		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
14	9071 OLGA	*31:01		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
15	9075 DKB	*24:02		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
16	9037 SWEIG007	*29:02		-	-	-	-	-	-	+	-	-	-	-	-	-	-	-	-
17	9282 CTM3953540	*03:01	*80:01	-	+	-	-	-	-	+	-	-	-	-	-	-	-	-	-
18	9257 32367	*33:03	*74:01	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
19	9038 BM16	*02:01		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
20	9059 SLE005	*02:01		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
21	9064 AMALA	*02:17		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
22	9056 KOSE	*02:01		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
23	9124 IHL	*02:01	*34:01	+	-	-	-	-	-	-	-	-	-	-	-	-	+	+	-
24	9035 JBUSH	*32:01		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
25	9049 IBW9	*33:01		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
26	9285 WT49	*02:05		W	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
27	9191 CH1007	*24:10	*29:01	-	-	-	-	-	-	+	-	-	-	-	-	-	-	-	-
28	9320 BEL5GB	*02:01	*29:02	-	-	-	-	-	-	+	-	-	-	-	-	-	-	-	-
29	9050 MOU	*29:02		-	-	-	-	-	-	+	-	-	-	-	-	-	-	-	-
30	9021 RSH	*30:01	*68:02	+	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
31	9019 DUCAF	*30:02		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
32	9297 HAG	*02:01		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
33	9098 MT14B	*31:01		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
34	9104 DHIF	*31:01		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
35	9302 SSTO	*32:01		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
36	9024 KT17	*02:06	*11:01	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
37	9065 HHKB	*03:01		-	-	-	-	-	-	+	-	-	-	-	-	-	-	-	-
38	9099 LZL	*02:17		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
39	9315 CML	*01:01	*03:01	-	+	-	-	-	W	+	-	-	-	-	-	-	-	-	-
40	9134 WHONP199	*02:07	*30:01	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
41	9055 H0301	*03:01		-	-	-	-	-	-	+	-	-	-	-	-	-	-	-	-
42	9066 TAB089	*02:07		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
43	9076 T7526	*02:06	*02:07	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
44	9057 TEM	*66:01		+	-	-	-	-	-	-	-	-	-	-	-	-	+	+	-
45	9239 SHJO	*23:01	*24:02	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
46	9013 SCHU	*03:01		-	-	-	-	-	-	+	-	-	-	-	-	-	-	-	-
47	9045 TUBO	*02:16	*03:01	-	-	-	-	-	-	+	-	-	-	-	-	-	-	-	-
48	9303 TER-ND	*02:01	*11:01	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

101.418-12/04 – including *Taq* pol., IFU-01
101.418-12u/04 – without *Taq* pol., IFU-02

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Lot No.: **30X**

Lot-specific information

CELL LINE VALIDATION SHEET																			
HLA-A*68 SSP subtyping kit ²																			
				Well															
				33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	
				Prod. No.:	201441333	201297534	201441335	201316036	201438037	201438038	201297539	201441340	201297541	201438042	201316043	201438044	201438045	201316046	201438047
IHCW cell line ¹		A*																	
1	9001 SA	*24:02		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
2	9280 LK707	*02:01		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
3	9011 E4181324	*01:01		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
4	9275 GU373	*30:01		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
5	9009 KAS011	*01:01		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
6	9353 SM	*02:01	*26:03	-	-	-	+	-	+	-	-	-	-	-	-	-	-	-	-
7	9020 QBL	*26:01		-	-	-	+	-	+	-	-	-	-	-	-	-	-	-	-
8	9025 DEU	*31:01		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
9	9026 YAR	*26:01		-	-	-	+	-	+	-	-	-	-	-	-	-	-	-	-
10	9107 LKT3	*24:02		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
11	9051 PITOUT	*29:02		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
12	9052 DBB	*02:01		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
13	9004 JESTHOM	*02:01		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
14	9071 OLGA	*31:01		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
15	9075 DKB	*24:02		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
16	9037 SWEIG007	*29:02		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
17	9282 CTM3953540	*03:01	*80:01	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
18	9257 32367	*33:03	*74:01	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
19	9038 BM16	*02:01		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
20	9059 SLE005	*02:01		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
21	9064 AMALA	*02:17		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
22	9056 KOSE	*02:01		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
23	9124 IHL	*02:01	*34:01	-	-	-	+	-	+	-	-	-	-	-	-	-	-	-	-
24	9035 JBUSH	*32:01		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
25	9049 IBW9	*33:01		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
26	9285 WT49	*02:05		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
27	9191 CH1007	*24:10	*29:01	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
28	9320 BEL5GB	*02:01	*29:02	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
29	9050 MOU	*29:02		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
30	9021 RSH	*30:01	*68:02	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
31	9019 DUCAF	*30:02		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
32	9297 HAG	*02:01		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
33	9098 MT14B	*31:01		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
34	9104 DHIF	*31:01		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
35	9302 SSTO	*32:01		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
36	9024 KT17	*02:06	*11:01	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
37	9065 HHKB	*03:01		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
38	9099 LZL	*02:17		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
39	9315 CML	*01:01	*03:01	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
40	9134 WHONP199	*02:07	*30:01	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
41	9055 H0301	*03:01		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
42	9066 TAB089	*02:07		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
43	9076 T7526	*02:06	*02:07	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
44	9057 TEM	*66:01		-	-	-	+	-	+	-	-	-	-	-	-	-	-	-	-
45	9239 SHJO	*23:01	*24:02	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
46	9013 SCHU	*03:01		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
47	9045 TUBO	*02:16	*03:01	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
48	9303 TER-ND	*02:01	*11:01	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

¹The provided cell line HLA specificities are retrieved from the <http://www.ihwg.org/hla> web site. The specificity of an individual cell line may thus be subject to change.

101.418-12/04 – including *Taq* pol., IFU-01
101.418-12u/04 – without *Taq* pol., IFU-02

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Lot No.: 30X

Lot-specific information

²The specificity of each primer solution in the kit has been tested against 48 well characterized cell line DNAs and where applicable, additional cell line DNAs.

No DNAs carrying the alleles to be amplified by primer solutions 5, 7 to 9, 11 to 16, 19 to 21, 25 to 28, 32 to 35, 37, 39 to 46 were available. The specificities of the primers in primer solutions 5, 7 to 9, 11, 13, 15, 16, 20, 21, 25 to 27, 37 and 41 were tested by separately adding additional 5'-primers, respectively additional 3'-primers. The specificities of the 3'-primers in primer solutions 12, 19, 28, 34, 39, 40, 42 and 46 were tested by separately adding one additional 5'-primer, it was not possible to test the 5'-primers. In primer solutions 14, 32, 33, 35, and 43 to 45 it was only possible to test the 5'-primers, the 3'-primers were not possible to test. In primer solution 5, 7, 8, 11, 17 and 27 one of the 5'-primers was not possible to test. In primer solutions 8, 9, 11, 15 to 16, 18, 21, 22, 26, 27 and 37 one or two of the 3'-primers were not possible to test. Additional primers in primer solutions 4, 6 and 29 were tested by separately adding either one additional 5'-primer, or one additional 3'-primer.

101.418-12/04 – including *Taq* pol., IFU-01
101.418-12u/04 – without *Taq* pol., IFU-02

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Lot No.: **30X**

Lot-specific information

101.418-12/04 – including *Taq* pol., IFU-01
101.418-12u/04 – without *Taq* pol., IFU-02

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“*Instructions for Use*” (IFU)

Lot No.: **30X**

Lot-specific information

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Fax: +43-1-710 15 00 10

E-mail: support-at@olerup.com

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

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For information on *Olerup* SSP distributors worldwide, contact **Olerup GmbH**.