

Olerup SSP® HLA-A*68

Product number:	101.418-12/04 – including <i>Taq</i> pol.
Lot number:	70K
Expiry date:	2013-July-01
Number of tests:	12 tests – Product No. 101.418-12 4 tests – Product No. 101.418-04
Number of wells per test:	32
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. 70K.

CHANGES COMPARED TO THE PREVIOUS *OLERUP SSP*® HLA-A*68 LOT

The HLA-A*68 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. 18G).

The amplification patterns for some rare HLA-A*68 alleles only differ by the length of the specific PCR products.

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

Well	5'-primer	3'-primer	rationale
13	-	Added	Primers added for the A*68:50 and 68:51 alleles.
18	-	-	Exchanged positive control primer pair.
25	Added	Added	Primer pair added for the A*68:52 allele.
26	Added	Added	Primer pair added for the A*68:49N allele.
29	-	Added	Primers added for improved resolution of the A*68:37 allele.
31	-	Added	Primer pair added for the A*68:50 allele.
32	-	Added	Primer pair added for the A*68:53 allele.

Change in revision R01 compared to R00:

1. Primer mix 29 does not amplify the A*68:37 allele. This has been corrected in the specificity and amplification tables.

PRODUCT DESCRIPTION

HLA-A*68 SSP subtyping

CONTENT

The primer set contains 5'- and 3'-primers for identifying the A*68:01 to A*68:54 alleles. The HLA-A*69:01 allele is also identified.

PLATE LAYOUT

Each test consists of 32 PCR reactions in a 32 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

The 32 well cut PCR plate is marked with ‘HLA-A*68’ in silver gray ink.

Well No. 1 is marked with the Lot No ‘70K’.

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 32 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-A*68 SSP subtypings will be influenced by most A*01 alleles, several A*02 alleles, most A*03 alleles, the A*11, two A*23, ten A*24 alleles, the A*25, the A*26, the A*29, two A*30 alleles, four A*31 alleles, two A*32 allele, two A*33, the A*34, the A*36, the A*43:01, the A*66, the A*74:13 and the A*80 as well as by the A*69:01 allele when present on the other haplotype. In addition, the B*27:25, B*27:45 and C*02:07 alleles will be amplified by primer mix 17, the B*27:45 allele will be amplified by primer mix 21, the C*03:82 allele will be amplified by primer mix 1 and the C*12:37 allele will be amplified by primer mix 15.

UNIQUELY IDENTIFIED ALLELES

All the HLA-A*68 alleles, i.e. **A*68:01 to A*68:54 as well as the A*69:01 allele**, recognized by the HLA Nomenclature Committee in July 2010¹ will give rise to unique amplification patterns by the primers in the HLA-A*68 subtyping kit.

The HLA-A*68 subtyping kit cannot distinguish the A*68:01:01-68:01:07 alleles, the A*68:02:01:01-68:02:04 alleles, the A*68:03:01-68:03:02 or the A*68:08:01-68:08:02 alleles.

The A*68:29 and A*68:52 alleles can be distinguished by the different sizes of the specific PCR products generated by primer mix 25.

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

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RESOLUTION IN HOMO- AND HETEROZYGOTES

A total of 82 alleles generate 53 amplification patterns that can be combined in 1431 homozygous and heterozygous combinations. 818 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.

+++++---	+-----	+-----+	-----	*68:05, *68:18N = *68:18N, *68:20
+++++---	-----+	+-----+	-----	*68:05, *68:51 = *68:20, *68:51
+++++---	-----+	+-----+	-----	*68:05, *68:40 = *68:20, *68:40
+++++---	-----	+-----+	-----	*68:05, *68:28 = *68:20, *68:28
+++++---	-----	+-----+	-+-----	*68:05, *68:49N = *68:20, *68:49N
+++++---	-----	+-----+	---+-----	*68:05, *68:34 = *68:20, *68:34
+++++---	-----	+-----+	---+-----	*68:05, *68:44 = *68:20, *68:44
+++++---	-----	+-----+	---+-----	*68:05, *68:54 = *68:20, *68:54
+++++---	-----	+-----+	---+-----	*68:05, *68:48 = *68:20, *68:48
+++++---	-----	+-----+	---+-----	*68:05, *68:53 = *68:20, *68:53
+++++---	-----	+-----+	-----	*68:02:01:01, *68:05 = *68:02:01:01, *68:20 = *68:20, *68:39
+++++---	-----	-----+	-----	*68:03:01, *68:39 = *68:30, *68:39
+++-----	+-----	+-----+	-----	*68:04, *68:18N = *68:18N, *68:25
+++-----	-----+	+-----+	-----	*68:04, *68:51 = *68:25, *68:51
+++-----	-----+	+-----+	-----	*68:04, *68:40 = *68:25, *68:31 = *68:25, *68:40
+++-----	-----	+-----+	-----	*68:04, *68:28 = *68:25, *68:28
+++-----	-----	+-----+	-+-----	*68:04, *68:49N = *68:25, *68:49N
+++-----	-----	+-----+	---+-----	*68:04, *68:34 = *68:25, *68:34
+++-----	-----	+-----+	---+-----	*68:04, *68:44 = *68:25, *68:44
+++-----	-----	+-----+	---+-----	*68:04, *68:54 = *68:25, *68:54
+++-----	-----	+-----+	---+-----	*68:04, *68:48 = *68:25, *68:48
+++-----	-----	+-----+	---+-----	*68:04, *68:53 = *68:25, *68:53
+++-----	-----	+-----+	-----	*68:02:01:01, *68:04 = *68:02:01:01, *68:25
+++-----	-----	-----+	-----	*68:04, *68:39 = *68:25, *68:39
+++-----	-----+	+-----+	-----	*68:01:01, *68:15 = *68:15, *68:16 = *68:15, *68:39
+++-----	-----+	+-----+	-----	*68:31, *68:32 = *68:32, *68:40
+++-----	-----	-----+	-----	*68:06, *68:39 = *68:32, *68:39
+++-----	-----+	+-----+	-----	*68:31, *68:46 = *68:40, *68:46
+++-----	-----	-----+	-----	*68:07, *68:39 = *68:39, *68:46
+++-----	+-----	+-----+	-----	*68:12, *68:18N = *68:47, *68:51
+++-----	+-----	+-----+	-----	*68:16, *68:18N = *68:31, *68:47 = *68:40, *68:47
+++-----	+-----	+-----+	-----	*68:08:01, *68:31 = *68:08:01, *68:40
+++-----	+-----	+-----+	-----	*68:18N, *68:24 = *68:28, *68:47
+++-----	+-----	+-----+	-+-----	*68:18N, *68:33 = *68:47, *68:49N
+++-----	+-----	+-----+	---+-----	*68:18N, *68:43 = *68:34, *68:47
+++-----	+-----	+-----+	---+-----	*68:18N, *68:35 = *68:44, *68:47
+++-----	+-----	+-----+	---+-----	*68:18N, *68:36 = *68:18N, *68:42 = *68:47, *68:54
+++-----	+-----	+-----+	---+-----	*68:18N, *68:45 = *68:47, *68:53
+++-----	+-----	+-----+	-----	*68:01:01, *68:18N = *68:02:01:01, *68:47 = *68:18N, *68:39 = *68:18N, *68:47
+++-----	+-----	+-----+	-----	*68:02:01:01, *68:08:01 = *68:08:01, *68:18N
+++-----	+-----	-----+	-----	*68:08:01, *68:39 = *68:39, *68:47
+++-----	-+-----	++-----	-----	*68:26, *68:31 = *68:26, *68:40
+++-----	-+-----	+-----+	-----	*68:09, *68:31 = *68:09, *68:40
+++-----	-+-----	+-----+	-----	*68:17, *68:31 = *68:17, *68:40
+++-----	-+-----	-----+	-----	*68:10, *68:39 = *68:17, *68:39
+++-----	-----+	+-----+	-----	*68:31, *68:38 = *68:38, *68:40
+++-----	-----+	+-----+	-----	*68:11N, *68:31 = *68:11N, *68:40
+++-----	-----+	+-----+	---+-----	*68:02:01:01, *68:38 = *68:11N, *68:44 = *68:38, *68:44
+++-----	-----+	+-----+	---+-----	*68:31, *68:50 = *68:40, *68:50
+++-----	-----+	+-----+	-----	*68:12, *68:31 = *68:12, *68:40 = *68:16, *68:51
+++-----	-----	+-----+	-----	*68:12, *68:28 = *68:24, *68:51
+++-----	-----	+-----+	-+-----	*68:12, *68:49N = *68:33, *68:51
+++-----	-----	+-----+	---+-----	*68:12, *68:34 = *68:43, *68:51
+++-----	-----	+-----+	---+-----	*68:12, *68:44 = *68:35, *68:51
+++-----	-----	+-----+	---+-----	*68:12, *68:54 = *68:36, *68:51 = *68:42, *68:51
+++-----	-----	+-----+	---+-----	*68:02:01:01, *68:50 = *68:12, *68:48 = *68:48, *68:50 = *68:50, *68:51

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+++-----	-----+	+-----+	-----+	*68:12, *68:53 = *68:45, *68:51
+++-----	-----+	+-----+	-----	*68:01:01, *68:51 = *68:02:01:01, *68:12 = *68:12, *68:51 = *68:39, *68:51
+++-----	-----+	+-----+	-----	*68:31, *68:41 = *68:40, *68:41
+++-----	-----+	+-----+	-----	*68:13, *68:39 = *68:39, *68:41
+++-----	-----+	+-----+	-----	*68:19, *68:31 = *68:19, *68:40
+++-----	-----+	+-----+	-----	*68:21, *68:31 = *68:21, *68:40
+++-----	-----+	+-----+	-----	*68:22, *68:31 = *68:22, *68:40
+++-----	-----+	+-----+	-----	*68:23, *68:31 = *68:23, *68:40
+++-----	-----+	+-----+	-----	*68:16, *68:28 = *68:24, *68:31 = *68:24, *68:40
+++-----	-----+	+-----+	-----	*68:29, *68:31 = *68:29, *68:40
+++-----	-----+	+-----+	-----	*68:16, *68:49N = *68:31, *68:33 = *68:33, *68:40
+++-----	-----+	+-----+	-----	*68:16, *68:34 = *68:31, *68:43 = *68:40, *68:43
+++-----	-----+	+-----+	-----	*68:16, *68:44 = *68:31, *68:35 = *68:35, *68:40
+++-----	-----+	+-----+	-----	*68:31, *68:37 = *68:37, *68:40
+++-----	-----+	+-----+	-----	*68:16, *68:54 = *68:31, *68:42 = *68:36, *68:40 = *68:40, *68:42
+++-----	-----+	+-----+	-----	*68:16, *68:53 = *68:31, *68:45 = *68:40, *68:45
+++-----	-----+	+-----+	-----	*68:01:01, *68:31 = *68:01:01, *68:40 = *68:02:01:01, *68:16 = *68:16, *68:31 = *68:16, *68:40 = *68:31, *68:39 = *68:39, *68:40
+++-----	-----+	+-----+	-----	*68:02:01:01, *68:21 = *68:21, *68:53
+++-----	-----+	+-----+	-----	*68:24, *68:49N = *68:28, *68:33
+++-----	-----+	+-----+	-----	*68:24, *68:34 = *68:28, *68:43
+++-----	-----+	+-----+	-----	*68:24, *68:44 = *68:28, *68:35
+++-----	-----+	+-----+	-----	*68:24, *68:54 = *68:28, *68:36 = *68:28, *68:42
+++-----	-----+	+-----+	-----	*68:24, *68:53 = *68:28, *68:45
+++-----	-----+	+-----+	-----	*68:01:01, *68:28 = *68:02:01:01, *68:24 = *68:24, *68:28 = *68:28, *68:39
+++-----	-----+	+-----+	-----	*68:33, *68:34 = *68:43, *68:49N
+++-----	-----+	+-----+	-----	*68:33, *68:44 = *68:35, *68:49N
+++-----	-----+	+-----+	-----	*68:33, *68:54 = *68:36, *68:49N = *68:42, *68:49N
+++-----	-----+	+-----+	-----	*68:33, *68:53 = *68:45, *68:49N
+++-----	-----+	+-----+	-----	*68:01:01, *68:49N = *68:02:01:01, *68:33 = *68:33, *68:49N = *68:39, *68:49N
+++-----	-----+	+-----+	-----	*68:34, *68:35 = *68:43, *68:44
+++-----	-----+	+-----+	-----	*68:34, *68:36 = *68:34, *68:42 = *68:43, *68:54
+++-----	-----+	+-----+	-----	*68:34, *68:45 = *68:43, *68:53
+++-----	-----+	+-----+	-----	*68:01:01, *68:34 = *68:02:01:01, *68:43 = *68:34, *68:39 = *68:34, *68:43
+++-----	-----+	+-----+	-----	*68:35, *68:54 = *68:36, *68:44 = *68:42, *68:44
+++-----	-----+	+-----+	-----	*68:35, *68:53 = *68:44, *68:45
+++-----	-----+	+-----+	-----	*68:01:01, *68:44 = *68:02:01:01, *68:35 = *68:35, *68:44 = *68:39, *68:44
+++-----	-----+	+-----+	-----	*68:02:01:01, *68:37 = *68:37, *68:54
+++-----	-----+	+-----+	-----	*68:36, *68:48 = *68:42, *68:48
+++-----	-----+	+-----+	-----	*68:36, *68:53 = *68:42, *68:53 = *68:45, *68:54
+++-----	-----+	+-----+	-----	*68:01:01, *68:54 = *68:02:01:01, *68:36 = *68:02:01:01, *68:42 = *68:36, *68:54 = *68:39, *68:54 = *68:42, *68:54
+++-----	-----+	+-----+	-----	*68:01:01, *68:48 = *68:39, *68:48
+++-----	-----+	+-----+	-----	*68:01:01, *68:53 = *68:02:01:01, *68:45 = *68:39, *68:53 = *68:45, *68:53
+++-----	-----+	+-----+	-----	*68:01:01, *68:02:01:01 = *68:02:01:01, *68:39 = *68:27, *68:39
+++-----	-----+	+-----+	-----	*68:36, *68:39 = *68:39, *68:42
+++-----	-----+	+-----+	-----	*68:01:01, *68:39 = *68:39, *68:39
+++-----	-----+	+-----+	-----	*68:03:01, *68:25 = *68:04, *68:30 = *68:25, *68:30
+++-----	-----+	+-----+	-----	*68:06, *68:20 = *68:20, *68:32
+++-----	-----+	+-----+	-----	*68:05, *68:06 = *68:05, *68:32
+++-----	-----+	+-----+	-----	*68:07, *68:20 = *68:20, *68:46
+++-----	-----+	+-----+	-----	*68:05, *68:07 = *68:05, *68:46
+++-----	-----+	+-----+	-----	*68:08:01, *68:20 = *68:20, *68:47
+++-----	-----+	+-----+	-----	*68:05, *68:08:01 = *68:05, *68:47
+++-----	-----+	+-----+	-----	*68:10, *68:20 = *68:17, *68:20
+++-----	-----+	+-----+	-----	*68:05, *68:10 = *68:05, *68:17
+++-----	-----+	+-----+	-----	*68:13, *68:20 = *68:20, *68:41
+++-----	-----+	+-----+	-----	*68:05, *68:13 = *68:05, *68:41

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+++---+--	-----	+-----+	-----	*68:01:01, *68:20 = *68:05, *68:27 = *68:20, *68:27 = *68:20, *68:30
+++---+--	-----	-----+	-----	*68:01:01, *68:05 = *68:05, *68:30
+++---+--	-----	-----+	-----	*68:03:01, *68:06 = *68:03:01, *68:32 = *68:30, *68:32
+++---+--	-----	-----+	-----	*68:03:01, *68:07 = *68:03:01, *68:46 = *68:30, *68:46
+++---+--	+-----	-----+	-----	*68:03:01, *68:08:01 = *68:03:01, *68:47 = *68:08:01, *68:30 = *68:30, *68:47
+++---+--	-+-----	-+-----+	-----	*68:03:01, *68:26 = *68:26, *68:30
+++---+--	-+-----	-----+	-----	*68:03:01, *68:09 = *68:09, *68:30
+++---+--	-+-----	-----+	-----	*68:03:01, *68:10 = *68:03:01, *68:17 = *68:17, *68:30
+++---+--	-+-----	-----+	-+-----	*68:03:01, *68:38 = *68:30, *68:38
+++---+--	-+-----	-----+	-----	*68:03:01, *68:11N = *68:11N, *68:30
+++---+--	-+-----	-----+	-+-----	*68:03:01, *68:50 = *68:30, *68:50
+++---+--	-+-----	-----+	-----	*68:03:01, *68:12 = *68:12, *68:30
+++---+--	-+-----	-----+	-----	*68:03:01, *68:13 = *68:03:01, *68:41 = *68:30, *68:41
+++---+--	-+-----	-----+	-----	*68:03:01, *68:19 = *68:19, *68:30
+++---+--	-+-----	-----+	-----	*68:03:01, *68:16 = *68:16, *68:30
+++---+--	-+-----	-+-----+	-----+	*68:03:01, *68:21 = *68:21, *68:30
+++---+--	-+-----	-+-----+	-----	*68:03:01, *68:22 = *68:22, *68:30
+++---+--	-+-----	-+-----+	-----	*68:03:01, *68:23 = *68:23, *68:30
+++---+--	-+-----	-+-----+	-----	*68:03:01, *68:24 = *68:24, *68:30
+++---+--	-+-----	-+-----+	+-----	*68:03:01, *68:29 = *68:29, *68:30
+++---+--	-+-----	-+-----+	-+-----	*68:03:01, *68:33 = *68:30, *68:33
+++---+--	-+-----	-+-----+	-+-----	*68:03:01, *68:43 = *68:30, *68:43
+++---+--	-+-----	-+-----+	-+-----	*68:03:01, *68:35 = *68:30, *68:35
+++---+--	-+-----	-+-----+	-+-----	*68:03:01, *68:37 = *68:30, *68:37
+++---+--	-+-----	-+-----+	-+-----	*68:03:01, *68:42 = *68:30, *68:36 = *68:30, *68:42
+++---+--	-+-----	-+-----+	-+-----	*68:03:01, *68:45 = *68:30, *68:45
+++---+--	-+-----	-+-----+	-----	*68:01:01, *68:03:01 = *68:01:01, *68:30 = *68:03:01, *68:30
+++---+--	-+-----	-+-----+	-----	*68:04, *68:06 = *68:04, *68:32 = *68:06, *68:25 = *68:25, *68:32
+++---+--	-+-----	-+-----+	-----	*68:04, *68:07 = *68:04, *68:46 = *68:07, *68:25 = *68:25, *68:46
+++---+--	-+-----	-+-----+	-----	*68:04, *68:08:01 = *68:04, *68:47 = *68:08:01, *68:25 = *68:25, *68:47
+++---+--	-+-----	-+-----+	-----	*68:04, *68:26 = *68:25, *68:26
+++---+--	-+-----	-+-----+	-----	*68:04, *68:09 = *68:09, *68:25
+++---+--	-+-----	-+-----+	-----	*68:04, *68:14 = *68:14, *68:25
+++---+--	-+-----	-+-----+	-----	*68:04, *68:10 = *68:04, *68:17 = *68:10, *68:25 = *68:17, *68:25
+++---+--	-+-----	-+-----+	-+-----	*68:04, *68:38 = *68:25, *68:38
+++---+--	-+-----	-+-----+	-----	*68:04, *68:11N = *68:11N, *68:25
+++---+--	-+-----	-+-----+	-+-----	*68:04, *68:50 = *68:25, *68:50
+++---+--	-+-----	-+-----+	-----	*68:04, *68:12 = *68:12, *68:25
+++---+--	-+-----	-+-----+	-----	*68:04, *68:13 = *68:04, *68:41 = *68:13, *68:25 = *68:25, *68:41
+++---+--	-+-----	-+-----+	-----	*68:04, *68:19 = *68:19, *68:25
+++---+--	-+-----	-+-----+	-----	*68:04, *68:16 = *68:16, *68:25
+++---+--	-+-----	-+-----+	-----	*68:04, *68:27 = *68:25, *68:27
+++---+--	-+-----	-+-----+	-+-----	*68:04, *68:21 = *68:21, *68:25
+++---+--	-+-----	-+-----+	-----	*68:04, *68:22 = *68:22, *68:25
+++---+--	-+-----	-+-----+	-----	*68:04, *68:23 = *68:23, *68:25
+++---+--	-+-----	-+-----+	-----	*68:04, *68:24 = *68:24, *68:25
+++---+--	-+-----	-+-----+	+-----	*68:04, *68:29 = *68:25, *68:29
+++---+--	-+-----	-+-----+	-+-----	*68:04, *68:33 = *68:25, *68:33
+++---+--	-+-----	-+-----+	-+-----	*68:04, *68:43 = *68:25, *68:43
+++---+--	-+-----	-+-----+	-+-----	*68:04, *68:35 = *68:25, *68:35
+++---+--	-+-----	-+-----+	-+-----	*68:04, *68:37 = *68:25, *68:37
+++---+--	-+-----	-+-----+	-+-----	*68:04, *68:42 = *68:25, *68:36 = *68:25, *68:42
+++---+--	-+-----	-+-----+	-+-----	*68:04, *68:45 = *68:25, *68:45
+++---+--	-+-----	-+-----+	-----	*68:01:01, *68:04 = *68:01:01, *68:25 = *68:04, *68:25 = *68:25, *68:25
+++---+--	-+-----	-+-----+	-----	*68:06, *68:46 = *68:07, *68:32 = *68:32, *68:46
+++---+--	-+-----	-+-----+	-----	*68:06, *68:47 = *68:08:01, *68:32 = *68:32, *68:47
+++---+--	-+-----	-+-----+	-----	*68:06, *68:17 = *68:10, *68:32 = *68:17, *68:32
+++---+--	-+-----	-+-----+	-+-----	*68:06, *68:38 = *68:32, *68:38
+++---+--	-+-----	-+-----+	-----	*68:06, *68:11N = *68:11N, *68:32
+++---+--	-+-----	-+-----+	-+-----	*68:06, *68:50 = *68:32, *68:50
+++---+--	-+-----	-+-----+	-----	*68:06, *68:12 = *68:12, *68:32
+++---+--	-+-----	-+-----+	-----	*68:06, *68:41 = *68:13, *68:32 = *68:32, *68:41
+++---+--	-+-----	-+-----+	-----	*68:06, *68:19 = *68:19, *68:32

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+++++--	-----+	-----++	-----	*68:06, *68:16 = *68:16, *68:32
+++++--	-----	-+-----	-----+	*68:06, *68:21 = *68:21, *68:32
+++++--	-----	--+-----	-----	*68:06, *68:22 = *68:22, *68:32
+++++--	-----	---+-----	-----	*68:06, *68:23 = *68:23, *68:32
+++++--	-----	-----++	-----	*68:06, *68:24 = *68:24, *68:32
+++++--	-----	-----++	+-----	*68:06, *68:29 = *68:29, *68:32
+++++--	-----	-----++	-+-----	*68:06, *68:33 = *68:32, *68:33
+++++--	-----	-----++	-+-----	*68:06, *68:43 = *68:32, *68:43
+++++--	-----	-----++	---+-----	*68:06, *68:35 = *68:32, *68:35
+++++--	-----	-----++	---+-----	*68:06, *68:37 = *68:32, *68:37
+++++--	-----	-----++	---+-----	*68:06, *68:36 = *68:06, *68:42 = *68:32, *68:36 = *68:32, *68:42
+++++--	-----	-----++	-----+	*68:06, *68:45 = *68:32, *68:45
+++++--	-----	-----++	-----	*68:01:01, *68:06 = *68:01:01, *68:32 = *68:06, *68:32 = *68:32, *68:32
+++++--	+-----	-----++	-----	*68:07, *68:08:01 = *68:07, *68:47 = *68:08:01, *68:46 = *68:46, *68:47
+++++--	-+-----	-+-----	-----	*68:07, *68:26 = *68:26, *68:46
+++++--	-+-----	-----++	-----	*68:07, *68:09 = *68:09, *68:46
+++++--	---+-----	-----++	-----	*68:07, *68:17 = *68:10, *68:46 = *68:17, *68:46
+++++--	---+-----	-----++	---+-----	*68:07, *68:38 = *68:38, *68:46
+++++--	---+-----	-----++	-----	*68:07, *68:11N = *68:11N, *68:46
+++++--	---+-----	-----++	-----+	*68:07, *68:50 = *68:46, *68:50
+++++--	---+-----	-----++	-----	*68:07, *68:12 = *68:12, *68:46
+++++--	---+-----	-----++	-----	*68:07, *68:41 = *68:13, *68:46 = *68:41, *68:46
+++++--	---+-----	-----++	-----	*68:07, *68:19 = *68:19, *68:46
+++++--	---+-----	-----++	-----	*68:07, *68:16 = *68:16, *68:46
+++++--	---+-----	-+-----	-----+	*68:07, *68:21 = *68:21, *68:46
+++++--	---+-----	--+-----	-----	*68:07, *68:22 = *68:22, *68:46
+++++--	---+-----	---+-----	-----	*68:07, *68:23 = *68:23, *68:46
+++++--	---+-----	-----++	-----	*68:07, *68:24 = *68:24, *68:46
+++++--	---+-----	-----++	+-----	*68:07, *68:29 = *68:29, *68:46
+++++--	---+-----	-----++	-+-----	*68:07, *68:33 = *68:33, *68:46
+++++--	---+-----	-----++	-+-----	*68:07, *68:43 = *68:43, *68:46
+++++--	---+-----	-----++	---+-----	*68:07, *68:35 = *68:35, *68:46
+++++--	---+-----	-----++	---+-----	*68:07, *68:37 = *68:37, *68:46
+++++--	---+-----	-----++	---+-----	*68:07, *68:36 = *68:07, *68:42 = *68:36, *68:46 = *68:42, *68:46
+++++--	---+-----	-----++	-----+	*68:07, *68:45 = *68:45, *68:46
+++++--	---+-----	-----++	-----	*68:01:01, *68:07 = *68:01:01, *68:46 = *68:07, *68:46 = *68:46, *68:46
+++++--	-+-----	-----++	-----	*68:08:01, *68:14 = *68:14, *68:47
+++++--	-+-----	-----++	-----	*68:08:01, *68:10 = *68:08:01, *68:17 = *68:10, *68:47 = *68:17, *68:47
+++++--	-+-----	-----++	---+-----	*68:08:01, *68:38 = *68:38, *68:47
+++++--	-+-----	-----++	-----	*68:08:01, *68:11N = *68:11N, *68:47
+++++--	-+-----	-----++	-----+	*68:08:01, *68:50 = *68:47, *68:50
+++++--	-+-----	-----++	-----	*68:08:01, *68:12 = *68:12, *68:47
+++++--	-+-----	-----++	-----	*68:08:01, *68:13 = *68:08:01, *68:41 = *68:13, *68:47 = *68:41, *68:47
+++++--	-+-----	-----++	-----	*68:08:01, *68:19 = *68:19, *68:47
+++++--	-+-----	-----++	-----	*68:08:01, *68:16 = *68:16, *68:47
+++++--	-+-----	-+-----	-----+	*68:08:01, *68:21 = *68:21, *68:47
+++++--	-+-----	--+-----	-----	*68:08:01, *68:22 = *68:22, *68:47
+++++--	-+-----	---+-----	-----	*68:08:01, *68:23 = *68:23, *68:47
+++++--	-+-----	---+-----	-----	*68:08:01, *68:24 = *68:24, *68:47
+++++--	-+-----	-----++	+-----	*68:08:01, *68:29 = *68:29, *68:47
+++++--	-+-----	-----++	-+-----	*68:08:01, *68:33 = *68:33, *68:47
+++++--	-+-----	-----++	-+-----	*68:08:01, *68:43 = *68:43, *68:47
+++++--	-+-----	-----++	---+-----	*68:08:01, *68:35 = *68:35, *68:47
+++++--	-+-----	-----++	---+-----	*68:08:01, *68:37 = *68:37, *68:47
+++++--	-+-----	-----++	---+-----	*68:08:01, *68:36 = *68:08:01, *68:42 = *68:36, *68:47 = *68:42, *68:47
+++++--	-+-----	-----++	-----+	*68:08:01, *68:45 = *68:45, *68:47
+++++--	-+-----	-----++	-----	*68:01:01, *68:08:01 = *68:01:01, *68:47 = *68:08:01, *68:47 = *68:47, *68:47
+++++--	-+-----	-+-----	-----	*68:10, *68:26 = *68:17, *68:26
+++++--	-+-----	-----++	-----	*68:09, *68:10 = *68:09, *68:17
+++++--	-+-----	-+-----	-----	*68:13, *68:26 = *68:26, *68:41
+++++--	-+-----	-----++	-----	*68:09, *68:13 = *68:09, *68:41
+++++--	-+-----	-----++	---+-----	*68:26, *68:36 = *68:26, *68:42
+++++--	-+-----	-+-----	-----+	*68:09, *68:21 = *68:21, *68:26 = *68:26, *68:45

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++-----	-+-----	-----++	----+---	*68:09, *68:36 = *68:09, *68:42
++-----	---+-----	-----++	----+---	*68:10, *68:38 = *68:17, *68:38
++-----	---+-----	-----++	-----	*68:10, *68:11N = *68:11N, *68:17
++-----	---+-----	-----++	-----+--	*68:10, *68:50 = *68:17, *68:50
++-----	---+-----	-----++	-----	*68:10, *68:12 = *68:12, *68:17
++-----	---+-----	-----++	-----	*68:10, *68:41 = *68:13, *68:17 = *68:17, *68:41
++-----	---+-----	-----++	----+---	*68:14, *68:36 = *68:14, *68:42
++-----	---+-----	-----++	-----	*68:01:01, *68:14 = *68:10, *68:19 = *68:14, *68:17 = *68:14, *68:19 = *68:17, *68:19
++-----	---+-----	-----++	-----	*68:10, *68:16 = *68:16, *68:17
++-----	---+-----	---+-----	-----+--	*68:10, *68:21 = *68:17, *68:21
++-----	---+-----	---+-----	-----	*68:10, *68:22 = *68:17, *68:22
++-----	---+-----	---+-----	-----	*68:10, *68:23 = *68:17, *68:23
++-----	---+-----	---+-----	-----	*68:10, *68:24 = *68:17, *68:24
++-----	---+-----	---+-----	+-----	*68:10, *68:29 = *68:17, *68:29
++-----	---+-----	---+-----	+-----	*68:10, *68:33 = *68:17, *68:33
++-----	---+-----	---+-----	---+-----	*68:10, *68:43 = *68:17, *68:43
++-----	---+-----	---+-----	---+-----	*68:10, *68:35 = *68:17, *68:35
++-----	---+-----	---+-----	---+-----	*68:10, *68:37 = *68:17, *68:37
++-----	---+-----	---+-----	---+-----	*68:10, *68:36 = *68:10, *68:42 = *68:17, *68:36 = *68:17, *68:42
++-----	---+-----	---+-----	-----+--	*68:10, *68:45 = *68:17, *68:45
++-----	---+-----	---+-----	-----	*68:01:01, *68:10 = *68:01:01, *68:17 = *68:10, *68:17 = *68:17, *68:17
++-----	---+-----	---+-----	---+-----	*68:13, *68:38 = *68:38, *68:41
++-----	---+-----	---+-----	-----	*68:11N, *68:13 = *68:11N, *68:41
++-----	---+-----	---+-----	---+-----	*68:36, *68:38 = *68:38, *68:42
++-----	---+-----	---+-----	---+-----	*68:01:01, *68:38 = *68:11N, *68:35 = *68:11N, *68:38 = *68:35, *68:38 = *68:38, *68:38
++-----	---+-----	---+-----	---+-----	*68:11N, *68:36 = *68:11N, *68:42
++-----	---+-----	---+-----	-----	*68:01:01, *68:11N = *68:11N, *68:11N
++-----	---+-----	---+-----	-----+--	*68:13, *68:50 = *68:41, *68:50
++-----	---+-----	---+-----	-----	*68:12, *68:13 = *68:12, *68:41
++-----	---+-----	---+-----	---+-----	*68:36, *68:50 = *68:42, *68:50
++-----	---+-----	---+-----	---+-----	*68:12, *68:36 = *68:12, *68:42
++-----	---+-----	---+-----	-----+--	*68:01:01, *68:50 = *68:12, *68:50 = *68:50, *68:50
++-----	---+-----	---+-----	-----	*68:01:01, *68:12 = *68:12, *68:12
++-----	---+-----	---+-----	-----	*68:13, *68:19 = *68:19, *68:41
++-----	---+-----	---+-----	-----	*68:13, *68:16 = *68:16, *68:41
++-----	---+-----	---+-----	-----+--	*68:13, *68:21 = *68:21, *68:41
++-----	---+-----	---+-----	-----	*68:13, *68:22 = *68:22, *68:41
++-----	---+-----	---+-----	-----	*68:13, *68:23 = *68:23, *68:41
++-----	---+-----	---+-----	-----	*68:13, *68:24 = *68:24, *68:41
++-----	---+-----	---+-----	+-----	*68:13, *68:29 = *68:29, *68:41
++-----	---+-----	---+-----	+-----	*68:13, *68:33 = *68:33, *68:41
++-----	---+-----	---+-----	---+-----	*68:13, *68:43 = *68:41, *68:43
++-----	---+-----	---+-----	---+-----	*68:13, *68:35 = *68:35, *68:41
++-----	---+-----	---+-----	---+-----	*68:13, *68:37 = *68:37, *68:41
++-----	---+-----	---+-----	---+-----	*68:13, *68:36 = *68:13, *68:42 = *68:36, *68:41 = *68:41, *68:42
++-----	---+-----	---+-----	-----+--	*68:13, *68:45 = *68:41, *68:45
++-----	---+-----	---+-----	-----	*68:01:01, *68:13 = *68:01:01, *68:41 = *68:13, *68:41 = *68:41, *68:41
++-----	---+-----	---+-----	---+-----	*68:19, *68:36 = *68:19, *68:42
++-----	---+-----	---+-----	-----	*68:01:01, *68:19 = *68:19, *68:19
++-----	---+-----	---+-----	---+-----	*68:16, *68:36 = *68:16, *68:42
++-----	---+-----	---+-----	-----	*68:01:01, *68:16 = *68:16, *68:16
++-----	---+-----	---+-----	+-----	*68:27, *68:36 = *68:27, *68:42
++-----	---+-----	---+-----	---+-----	*68:21, *68:36 = *68:21, *68:42
++-----	---+-----	---+-----	-----+--	*68:01:01, *68:21 = *68:21, *68:21 = *68:21, *68:45
++-----	---+-----	---+-----	---+-----	*68:22, *68:36 = *68:22, *68:42
++-----	---+-----	---+-----	-----	*68:01:01, *68:22 = *68:22, *68:22
++-----	---+-----	---+-----	---+-----	*68:23, *68:36 = *68:23, *68:42
++-----	---+-----	---+-----	-----	*68:01:01, *68:23 = *68:23, *68:23
++-----	---+-----	---+-----	---+-----	*68:24, *68:36 = *68:24, *68:42
++-----	---+-----	---+-----	-----	*68:01:01, *68:24 = *68:24, *68:24
++-----	---+-----	---+-----	+-----	*68:29, *68:36 = *68:29, *68:42
++-----	---+-----	---+-----	+-----	*68:01:01, *68:29 = *68:29, *68:29

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++-----	-----	-----++	-+--+---	*68:33, *68:36 = *68:33, *68:42
++-----	-----	-----++	-+-----	*68:01:01, *68:33 = *68:33, *68:33
++-----	-----	-----++	-+--+---	*68:36, *68:43 = *68:42, *68:43
++-----	-----	-----++	-+--+---	*68:01:01, *68:43 = *68:43, *68:43
++-----	-----	-----++	---+--+	*68:35, *68:36 = *68:35, *68:42
++-----	-----	-----++	---+---	*68:01:01, *68:35 = *68:35, *68:35
++-----	-----	-----++	---+--+	*68:01:01, *68:37 = *68:36, *68:37 = *68:37, *68:37 = *68:37, *68:42
++-----	-----	-----++	---+--+	*68:36, *68:45 = *68:42, *68:45
++-----	-----	-----++	---+---	*68:01:01, *68:36 = *68:01:01, *68:42 = *68:36, *68:42 = *68:42, *68:42
++-----	-----	-----++	-----+	*68:01:01, *68:45 = *68:45, *68:45
+-----+	-----+	+-----+	-----	*68:30, *68:31 = *68:30, *68:40
+-----+	-----+	+-----+	-----	*68:02:01:01, *68:15 = *68:15, *68:27 = *68:15, *68:40
+-----+	-----+	+-----+	-----	*68:06, *68:31 = *68:06, *68:40
+-----+	-----+	+-----+	-----	*68:07, *68:31 = *68:07, *68:40
+-----+	-----+	+-----+	-----	*68:18N, *68:31 = *68:18N, *68:40
++-----	+-----	+-----	-----	*68:02:01:01, *68:18N = *68:18N, *68:18N = *68:18N, *68:27
+-----	---+---+	+-----+	-----	*68:14, *68:31 = *68:14, *68:40
+-----	---+---+	+-----+	-----	*68:10, *68:31 = *68:10, *68:40
+-----	---+---+	+-----+	-----	*68:31, *68:51 = *68:40, *68:51
+-----	---+---+	+-----+	-----	*68:02:01:01, *68:51 = *68:27, *68:51 = *68:51, *68:51
+-----	---+---+	+-----+	-----	*68:13, *68:31 = *68:13, *68:40
+-----	---+---+	+-----+	-----	*68:28, *68:31 = *68:28, *68:40
+-----	-----+	+-----	-+-----	*68:31, *68:49N = *68:40, *68:49N
++-----	-----+	+-----	-+-----	*68:31, *68:34 = *68:34, *68:40
+-----	-----+	+-----	-+-----	*68:31, *68:44 = *68:40, *68:44
+-----	-----+	+-----	---+---	*68:31, *68:54 = *68:40, *68:54
+-----	-----+	+-----	---+---	*68:31, *68:48 = *68:40, *68:48
+-----	-----+	+-----	---+---	*68:31, *68:53 = *68:40, *68:53
+-----	-----+	+-----	-----	*68:02:01:01, *68:31 = *68:02:01:01, *68:40 = *68:27, *68:31 = *68:27, *68:40 = *68:31, *68:40 = *68:40, *68:40
++-----	-----	+-----	-----	*68:02:01:01, *68:28 = *68:27, *68:28 = *68:28, *68:28
+-----	-----	+-----	-+-----	*68:02:01:01, *68:49N = *68:27, *68:49N = *68:49N, *68:49N
+-----	-----	+-----	-+-----	*68:02:01:01, *68:34 = *68:27, *68:34 = *68:34, *68:34
+-----	-----	+-----	---+---	*68:02:01:01, *68:44 = *68:27, *68:44 = *68:44, *68:44
+-----	-----	+-----	---+---	*68:02:01:01, *68:54 = *68:27, *68:54 = *68:54, *68:54
+-----	-----	+-----	---+---	*68:02:01:01, *68:48 = *68:27, *68:48 = *68:48, *68:48
+-----	-----	+-----	---+---	*68:02:01:01, *68:53 = *68:27, *68:53 = *68:53, *68:53
++-----	-----	+-----	-----	*68:02:01:01, *68:02:01:01 = *68:02:01:01, *68:27
+-----	---+---+	-----+	-----	*68:10, *68:14 = *68:14, *68:14
---+---+	-----+	+-----+	-----	*68:03:01, *68:15 = *68:05, *68:15 = *68:05, *68:31 = *68:15, *68:20 = *68:20, *68:31
---+---+	-----+	+-----+	-----	*68:03:01, *68:20 = *68:05, *68:20 = *68:20, *68:20
---+---+	-----+	+-----+	-----	*68:03:01, *68:05 = *68:05, *68:05
---+---+	-----+	+-----+	-----	*68:15, *68:15 = *68:15, *68:31

*68:01:01 = *68:01:01-68:01:07
 *68:02:01:01 = *68:02:01:01-68:02:04
 *68:03:01 = *68:03:01-68:03:02
 *68:08:01 = *68:08:01-68:08:02
 *68:29 = *68:29 and 68:52

SPECIFICITY TABLE

HLA-A*68 SSP subtyping

Specificities and sizes of the PCR products of the 32 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	*68:01:01-68:02:04, 68:06-68:14, 68:16-68:19, 68:21-68:30, 68:32-68:35, 68:37-68:45, 68:46 ^w , 68:47-68:54	*01:13, 02:34-02:35:03, 02:56:01-02:56:02, 02:62, 02:78, 02:103, 03:01:01-03:01:08, 03:01:10-03:07, 03:09-03:31, 03:33-03:35, 03:37-03:40, 03:42-03:56, 03:58-03:82, 11:01:01-11:01:22, 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, 11:58-11:64, 24:19, 30:18, 34:01:01-34:08, 66:01-66:02, 66:04, 66:06-66:10, 66:12-66:14, 69:01, 74:13, C*03:82
2	435 bp	1070 bp	*68:01:01-68:01:07, 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	*01:51, 03:24, 11:10, 33:18, 34:02-34:04, 34:07-34:08
3	195 bp	1070 bp	*68:02:01:01-68:02:04, 68:15, 68:18N, 68:28, 68:31, 68:34, 68:39-68:40, 68:44, 68:48-68:49N, 68:51, 68:53-68:54	
4 ⁹	180 bp, 225 bp	1070 bp	*68:03:01-68:03:02, 68:05, 68:20, 68:30	*02:06:05
5 ¹⁰	140 bp, 235 bp	800 bp	*68:04, 68:25	*66:15
6	225 bp	1070 bp	*68:05, 68:15, 68:20	*02:06:05, 02:122, 02:143

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7¹¹	135 bp, 155 bp	1070 bp	*68:06, 68:32	*02:52
8¹²	160 bp, 240 bp	800 bp	*68:07, 68:46	
9^{7,13}	150 bp, 195 bp, 250 bp	800 bp	*68:08:01-68:08:02, 68:18N, 68:47	*26:43:01-26:43:02, 34:03? 34:04?, 34:06?-34:08?, 66:06
10	165 bp	800 bp	*68:09, 68:26	*01:12, 01:19, 03:10, 11:01:01- 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, 11:51-11:58, 11:60- 11:64, 24:17, 24:41, 29:05
11¹⁴	160 bp, 200 bp	800 bp	*68:10, 68:14, 68:17	
12¹⁵	205 bp, 405 bp	1070 bp	*68:11N, 68:38	
13¹⁶	210 bp, 240 bp	800 bp	*68:12, 68:50-68:51	*26:18
14¹⁷	150 bp, 195 bp	800 bp	*68:13, 68:41	
15^{8,18}	145 bp, 205 bp	1070 bp	*68:14, 68:19	*02:121, 02:237, 03:17, 24:18, C*12:37
16¹⁹	150 bp, 215 bp	1070 bp	*68:15-68:16, 68:31, 68:40	*02:122, 02:143
17²⁰	165 bp, 185 bp	1070 bp	*68:02:01:01- 68:02:04, 68:15, 68:18N, 68:20, 68:27-68:28, 68:31, 68:34, 68:40, 68:44, 68:48-68:49N, 68:51, 68:53-68:54	*02:02 ^w , 02:03:01-02:03:03, 02:05:01 ^w -02:05:03 ^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, 23:02, 24:06, 24:87, 24:138, 25:01:01- 25:03, 25:05-25:11, 25:13, 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, 26:49-26:50, 31:30, 32:10, 34:01:01-34:01:02, 34:05, 43:01, 66:01-66:05, 66:07-66:15, B*27:25, B*27:45, C*02:07

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18 ^{7,21}	200 bp, 225 bp	800 bp	*68:21, 68:26	*01:01:01:01-01:04N, 01:06-01:29, 01:31N-01:66, 03:04, 03:18, 11:27, 11:38-11:39, 24:17, 24:41, 29:03, 80:01-80:02
19 ⁸	325 bp	1070 bp	*68:22	
20 ^{5,8}	90 bp	1070 bp	*68:23	*01:20, 01:66, 02:114, 02:246, 29:22
21 ²²	165 bp, 215 bp	1070 bp	*68:24, 68:28	*02:49, 24:87, B*27:45
22 ⁶	165 bp	800 bp	*68:01:01-68:01:07, 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	*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 -01:52N ^w , 01:54 ^w -01:64 ^w , 01:66 ^w , 02:229, 03:18 ^w , 03:50, 03:66, 11:08, 11:44, 36:01 ^w , 36:02, 36:03 ^w -36:05 ^w
23	185 bp	1070 bp	*68:01:01-68:01:07, 68:03:01-68:05, 68:07-68:14, 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	*02:114, 02:229, 02:246, 03:01:01:01-03:17, 03:20-03:39, 03:41-03:42, 03:44-03:52, 03:54-03:81, 11:04, 11:35, 29:01:01:01-29:02:01:01, 29:02:03-29:02:05, 29:04-29:22, 30:26, 31:03-31:04, 31:06, 32:04, 33:18, 34:02-34:04, 34:07-34:08, 36:01-36:03, 36:05
24 ⁷	375 bp	1070 bp		*02:55, 26:22, 33:22, 66:09, 69:01
25 ^{5,23}	110 bp, 240 bp	1070 bp	*68:29, 68:52	*02:243, 24:82
26 ^{5,7,24}	100 bp, 185 bp	1070 bp	*68:33, 68:49N	
27 ²⁵	185 bp, 235 bp	1070 bp	*68:34, 68:43	
28 ²⁶	200 bp, 230 bp	1070 bp	*68:35, 68:38, 68:44	
29 ^{5-7,27}	80 bp, 250 bp	800 bp	*68:36, 68:42, 68:54	*02:03:01-02:03:03, 02:26 ^w , 02:99 ^w , 02:117, 02:148, 02:171:02 ^w , 02:253, 02:258, 02:264, 11:25 ^w
30 ^{7,28}	145 bp, 245 bp	1070 bp	*68:37	*02:117, 02:135, 25:01:01-25:07, 25:10-25:13,

				26:01:01-26:01:14, 26:01:16-26:10, 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, 26:48-26:50, 34:01:01-34:01:02, 34:05, 43:01, 66:01-66:15
31⁷	220 bp	1070 bp	*68:48, 68:50	*25:01:01-25:04, 25:06-25:07, 25:09-25:13, 26:01:01-26:10, 26:12-26:43:02, 26:45-26:46, 26:48-26:50, 34:01:01-34:01:02, 34:03 [?] -34:08 [?] , 43:01, 66:01-66:15
32²⁹	165 bp, 195 bp	1070 bp	*68:21, 68:45, 68:53	*02:74:02, 02:159, 23:25, 24:24, 24:67, 26:16

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 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 order to help in the correct orientation of the HLA-A*68 subtyping.

In addition, wells number 5, 8 to 11, 13, 14, 18, 22 and 29 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.

³The A*68:29 and A*68:52 alleles can be distinguished by the different sizes of the specific PCR products generated by primer mix 25.

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, 10, 13, 15 to 18, 20 to 25 and 29 to 32. In addition, the B*27:25, B*27:45 and C*02:07 alleles will be amplified by primer mix 17, the B*27:45 allele will be amplified by primer mix 21, the C*03:82 allele will be amplified by primer mix 1 and the C*12:37 allele will be amplified by primer mix 15.

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

⁶Primer mixes 1, 22 and 29 may yield less specific PCR product than the other A*68 primer mixes.

⁷Primer mix 9, 18, 24, 26, 29, 30 and 31 may give rise to non-specific amplifications.

⁸Primer mixes 15, 19 and 20 have a tendency of giving rise to a primer oligomer artifact.

⁹Primer mix 4: Specific PCR fragment of 180 bp in the A*68:30 allele. Specific PCR fragment of 225 bp in the A*68:03:01-68:03:02, A*68:05 and A*68:20 alleles. Specific PCR fragment of 180 and 225 bp in the A*02:06:05 allele.

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¹⁰Primer mix 5: Specific PCR fragment of 140 bp in the A*68:25 allele. Specific PCR fragment of 235 bp in the A*68:04 and the A*66:15 alleles.

¹¹Primer mix 7: Specific PCR fragment of 135 bp in the A*68:06 and A*02:52 alleles. Specific PCR fragment of 155 bp in the A*68:32 allele.

¹²Primer mix 8: Specific PCR fragment of 160 bp in the A*68:07 allele. Specific PCR fragment of 240 bp in the A*68:46 allele.

¹³Primer mix 9: Specific PCR fragment of 150 bp in the A*68:18N allele. Specific PCR fragment of 195 bp in the A*68:47 allele. Specific PCR fragment of 250 bp in the A*68:08:01-68:08:02 and in the A*26:43:01-26:43:02, 34:03[?]-34:04[?], 34:06[?]-34:08[?] and 66:06 alleles.

¹⁴Primer mix 11: Specific PCR fragment of 160 bp in the A*68:17 allele. Specific PCR fragment of 200 bp in the A*68:10 and A*68:14 alleles.

¹⁵Primer mix 12: Specific PCR fragment of 205 bp in the A*68:38 allele. Specific PCR fragment of 405 bp in the A*68:11N allele.

¹⁶Primer mix 13: Specific PCR fragment of 210 bp in the A*68:12 and A*68:50 alleles. Specific PCR fragment of 240 bp in the A*68:51 and 26:18 alleles.

¹⁷Primer mix 14: Specific PCR fragment of 150 bp in the A*68:41 allele. Specific PCR fragment of 195 bp in the A*68:13 allele.

¹⁸Primer mix 15: Specific PCR fragment of 145 bp in the A*68:19 and in the A*02:237, 03:17 and 24:18 alleles. Specific PCR fragment of 205 bp in the A*68:14 and in the A*02:121 and in the C*12:37 alleles.

¹⁹Primer mix 16: Specific PCR fragment of 150 bp in the A*68:16 allele. Specific PCR fragment of 215 bp in the A*68:15, 68:31 and 68:40 and in the A*02:122 and 02:143 alleles.

²⁰Primer mix 17: Specific PCR fragment of 165 bp in the A*68:02:01:01-68:02:04, 68:15, 68:18N, 68:27-68:28, 68:31, 68:34, 68:40, 68:44, 68:48-68:49N, 68:51 and 68:53-68:54 and in the A*02:02^w, 02:03:01-02:03:03, 02:05:01^w-02:05:03^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, 23:02, 24:06, 24:87, 24:138, 25:01:01-25:03, 25:05-25:11, 25:13, 26:01:01-26:01:04, 26:01:07-26:07:02, 26:09-26:26, 26:28-26:39, 26:42, 26:45-26:47, 26:49-26:50, 31:30, 32:10, 34:01:01-34:01:02, 34:05, 43:01, 66:01-66:05, 66:07-66:15 and in the B*27:25, B*27:45 and C*02:07 alleles. Specific PCR fragment of 185 bp in the A*68:20 allele. Specific PCR fragment of 165 and 185 bp in the A*26:41 allele.

²¹Primer mix 18: Specific PCR fragment of 200 bp in the A*68:26 and in the A*01:01:01:01-01:04N, 01:06-01:29, 01:31N-01:66, 03:18, 11:27, 11:38-11:39, 24:17, 24:41, 29:03 and 80:01-80:02 alleles. Specific PCR fragment of 225 bp in the A*68:21 and A*03:04 alleles.

²²Primer mix 21: Specific PCR fragment of 165 bp in the A*68:28 and in the A*02:49, 24:87 and in the B*27:45 alleles. Specific PCR fragment of 215 bp in the A*68:24 allele.

²³Primer mix 25: Specific PCR fragment of 110 bp in the A*68:52 allele. Specific PCR fragment of 240 bp in the A*68:29 and in the A*02:243 and 24:82 alleles.

²⁴Primer mix 26: Specific PCR fragment of 100 bp in the A*68:49N allele. Specific PCR fragment of 185 bp in the A*68:33 allele.

²⁵Primer mix 27: Specific PCR fragment of 185 bp in the A*68:34 allele. Specific PCR fragment of 235 bp in the A*68:43 allele.

²⁶Primer mix 28: Specific PCR fragment of 200 bp in the A*68:35 and 68:38 alleles. Specific PCR fragment of 230 bp in the A*68:44 allele.

²⁷Primer mix 29: Specific PCR fragment of 80 bp in the A*68:42, 68:54, 02:03:01-02:03:03, 02:26^w, 02:99^w, 02:117, 02:148, 02:171:02^w, 02:253, 02:258, 02:264, 11:25^w alleles. Specific PCR fragment of 250 bp in the A*68:36 allele.

²⁸Primer mix 30: Specific PCR fragment of 145 bp in the A*02:117, 02:135, 25:01:01-25:07, 25:10-25:13, 26:01:01-26:01:14, 26:01:16-26:10, 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, 26:48-26:50, 34:01:01-34:01:02, 34:05, 43:01 and 66:01-66:15 alleles. Specific PCR fragment of 245 bp in the A*68:37 allele.

²⁹Primer mix 32: Specific PCR fragment of 165 bp in the A*68:53 and 02:159 alleles. Specific PCR fragment of 195 bp in the A*68:21 and 68:45 and in the A*02:74:02, 23:25, 24:24, 24:67 and 26:16 alleles.

'w, may be weakly amplified.

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

INTERPRETATION TABLE																
HLA-A*68 SSP subtyping																
Amplification patterns of the A*68:01 to A*68:54 alleles																
	Well⁵															
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Length of spec. PCR product(s)	195	435	195	180	140	225	135	160	150	165	160	205	210	150	145	150
				225	235		155	240	195		200	405	240	195	205	215
									250							
Length of int. pos. control ¹	800	1070	1070	1070	800	1070	1070	800	800	800	800	1070	800	800	1070	1070
5'-primer(s) ²	127	261	106	102	98	102	145	98	106	413	98	47	2 nd	103	453	106
	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'	5'-CCT 3'	5'-CCT 3'	5'-AAA 3'	5'-CCA 3'
					397	106	414	418	2 nd		419	376		413		413
					5'-gCC 3'	5'-CCA 3'	5'-gAA 3'	5'-AgC 3'	5'-CCT 3'		5'-ggT 3'	5'-gCA 3'		5'-CCg 3'		5'-CCg 3'
3'-primer(s) ³	282	413	259	240	290	292	259	299	216	538	256	282	497	255	555	278
	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'	5'-TgA 3'	5'-Cgg 3'	5'-CCA 3'	5'-ggC 3'
	282			282	497		506	539	479		538	538	497	521	616	282
	5'-gAC 3'			5'-gAg 3'	5'-Tgg 3'		5'-TgT 3'	5'-TCC 3'	5'-CCA 3'		5'-CCA 3'	5'-CCA 3'	5'-TgA 3'	5'-ggA 3'	5'-CgC 3'	5'-gAg 3'
				292												
				5'-gTg 3'									5'-CAC 3'			5'-gAg 3'
									538							282
									538							524
									5'-CAA 3'							5'-CAA 3'
Well No.	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
HLA-A allele																
*68:01:01-68:01:07	1	2														
*68:02:01:01-68:02:04	1		3													
*68:03:01-68:03:02		2		4												
*68:04		2			5											
*68:05		2		4		6										
Well No.	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16

INTERPRETATION TABLE																
HLA-A*68 SSP subtyping																
Amplification patterns of the A*68:01 to A*68:54 alleles																
Well⁵																
17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	
165	200	325	90	165	165	185	375	110	100	185	200	80	145	220	165	Length of spec. PCR product(s)
185	225			215				240	185	235	230	250	245		195	
1070	800	1070	1070	1070	800	1070	1070	1070	1070	1070	1070	800	1070	1070	1070	Length of int. pos. control¹
395	413	317	362	102	413	413	261	28	453	87	121	102	102	2 nd I	98	5'-primer(s)²
5'-gCA ^{3'}	5'-CCg ^{3'}	5'-gCA ^{3'}	5'-gAg ^{3'}	5'-ACT ^{3'}	5'-CCg ^{3'}	5'-CCg ^{3'}	5'-AAC ^{3'}	5'-TCg ^{3'}	5'-AAA ^{3'}	5'-ATA ^{3'}	5'-gCT ^{3'}	5'-ACT ^{3'}	5'-ACT ^{3'}	5'-CCT ^{3'}	5'-CTC ^{3'}	
413			362	413				383	666	413	349	489	414		453	3'-primer(s)³
5'-CCA ^{3'}			5'-gAg ^{3'}	5'-CCA ^{3'}				5'-ggA ^{3'}	5'-gAA ^{3'}	5'-CCA ^{3'}	5'-CTg ^{3'}	5'-gCA ^{3'}	5'-Cag ^{3'}		5'-AAA ^{3'}	
											376					3'-primer(s)³
											5'-gCA ^{3'}					
539	570	362	413	275	539	559	355	97	512	282	282	308	308	502	259	3'-primer(s)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'}	5'-ggT ^{3'}	5'-ACT ^{3'}	5'-gAC ^{3'}	5'-gAC ^{3'}	5'-TCT ^{3'}	5'-TCT ^{3'}	5'-CTT ^{3'}	5'-gTT ^{3'}	
	595			538				453	808	559	538	317	517	506	578	3'-primer(s)³
	5'-CCg ^{3'}			5'-CCg ^{3'}				5'-TCT ^{3'}	5'-AgA ^{3'}	5'-CAT ^{3'}	5'-CCA ^{3'}	5'-ggA ^{3'}	5'-CgT ^{3'}	5'-TgC ^{3'}	5'-Tgg ^{3'}	
												527			595	3'-primer(s)³
												5'-CCT ^{3'}			5'-CCg ^{3'}	
17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	Well No.
					22	23										HLA-A allele
17																
					22	23										*68:01:01-68:01:07
					22	23										*68:02:01:01-68:02:04
					22	23										*68:03:01-68:03:02
					22	23										*68:04
					22	23										*68:05
17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	Well No.

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Length of spec.	195	435	195	180	140	225	135	160	150	165	160	205	210	150	145	150
PCR product(s)				225	235		155	240	195		200	405	240	195	205	215
									250							
Well No.	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
*68:06	1						7									
*68:07	1							8								
*68:08:01-68:08:02	1	2							9							
*68:09	1	2								10						
*68:10	1										11					
*68:11N	1	2										12				
*68:12	1	2											13			
*68:13	1													14		
*68:14	1										11				15	
*68:15			3			6										16
*68:16	1	2														16
*68:17	1	2									11					
*68:18N	1		3						9							
*68:19	1	2													15	
*68:20		2		4		6										
*68:21	1	2														
*68:22	1	2														
*68:23	1	2														
*68:24	1	2														
*68:25	1	2			5											
*68:26	1	2								10						
*68:27	1															
*68:28	1		3													
*68:29, 68:52 ⁴	1	2														
*68:30	1			4												
*68:31			3													16
*68:32	1	2					7									
*68:33	1	2														
*68:34	1		3													
*68:35	1	2														
*68:36		2														
*68:37	1	2														
*68:38	1	2										12				
*68:39	1	2	3													
*68:40	1		3													16
*68:41	1	2												14		
*68:42	1	2														
*68:43	1	2														
*68:44	1		3													
Well No.	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16

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165	200	325	90	165	165	185	375	110	100	185	200	80	145	220	165	Length of spec. PCR product(s)
185	225			215				240	185	235	230	250	245		195	
17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	Well No.
																*68:06
					22	23										*68:07
						23										*68:08:01-68:08:02
						23										*68:09
					22	23										*68:10
					22	23										*68:11N
					22	23										*68:12
					22	23										*68:13
17					22	23										*68:14
																*68:15
					22	23										*68:16
					22	23										*68:17
17																*68:18N
					22	23										*68:19
17					22	23										*68:20
	18				22	23									32	*68:21
		19			22	23										*68:22
			20		22	23										*68:23
				21	22	23										*68:24
					22	23										*68:25
	18															*68:26
17																*68:27
17				21												*68:28
					22	23		25								*68:29, 68:52 ⁴
					22	23										*68:30
17																*68:31
					22	23										*68:32
					22	23		26								*68:33
17										27						*68:34
					22	23					28					*68:35
					22	23						29				*68:36
					22	23							30			*68:37
					22	23					28					*68:38
					22	23										*68:39
17																*68:40
					22	23										*68:41
					22	23						29				*68:42
					22	23				27						*68:43
17											28					*68:44
17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	Well No.

Lot No.: **70K**

Lot-specific Information

www.olerup-ssp.com

Length of spec.	195	435	195	180	140	225	135	160	150	165	160	205	210	150	145	150
PCR product(s)				225	235		155	240	195		200	405	240	195	205	215
									250							
Well No.	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
*68:45	1	2														
*68:46	w	2						8								
*68:47	1	2							9							
*68:48	1		3													
*68:49N	1		3													
*68:50	1	2											13			
*68:51	1		3										13			
*68:53	1		3													
*68:54	1		3													
*01:01:01:01-01:04N, 01:07-01:11N, 01:14- 01:18N, 01:21-01:24, 01:26-01:29, 01:31N- 01:50, 01:52N, 01:54- 01:64																
*01:06, 01:25, 01:53N, 01:65, 29:03, 80:01- 80:02																
*01:12, 01:19, 11:38, 24:17, 24:41										10						
*01:13, 03:18	1															
*01:20, 01:66																
*01:51		2														
*02:02, 02:05:01- 02:05:03, 02:08, 02:47, 02:63, 02:102, 02:115, 02:154-02:155, 02:172, 02:179, 02:186, 02:209, 02:232																
*02:03:01-02:03:03, 02:148, 02:253, 02:258, 02:264																
*02:06:05				4		6										
*02:22:01-02:22:02, 02:50, 02:104, 02:136, 02:191, 02:230, 23:02, 24:06, 24:138, 25:08, 26:11N, 26:47, 31:30, 32:10, <i>B</i> *27:25, <i>C</i> *02:07																
Well No.	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16

Lot No.: **70K**

Lot-specific Information

www.olerup-ssp.com

165	200	325	90	165	165	185	375	110	100	185	200	80	145	220	165	Length of spec. PCR product(s)
185	225			215				240	185	235	230	250	245		195	
17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	Well No.
					22	23									32	*68:45
					22	23										*68:46
					22	23										*68:47
17														31		*68:48
17									26							*68:49N
					22	23								31		*68:50
17																*68:51
17															32	*68:53
17												29				*68:54
	18				w											*01:01:01:01-01:04N, 01:07-01:11N, 01:14- 01:18N, 01:21-01:24, 01:26-01:29, 01:31N- 01:50, 01:52N, 01:54- 01:64
	18															*01:06, 01:25, 01:53N, 01:65, 29:03, 80:01- 80:02
	18															*01:12, 01:19, 11:38, 24:17, 24:41
	18				w											*01:13, 03:18
	18		20		w											*01:20, 01:66
	18				w											*01:51
	w															*02:02, 02:05:01- 02:05:03, 02:08, 02:47, 02:63, 02:102, 02:115, 02:154-02:155, 02:172, 02:179, 02:186, 02:209, 02:232
17												29				*02:03:01-02:03:03, 02:148, 02:253, 02:258, 02:264
																*02:06:05
17																*02:22:01-02:22:02, 02:50, 02:104, 02:136, 02:191, 02:230, 23:02, 24:06, 24:138, 25:08, 26:11N, 26:47, 31:30, 32:10, B*27:25, C*02:07
17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	Well No.

Lot No.: **70K**

Lot-specific Information

www.olerup-ssp.com

Length of spec.	195	435	195	180	140	225	135	160	150	165	160	205	210	150	145	150
PCR product(s)				225	235		155	240	195		200	405	240	195	205	215
									250							
Well No.	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
*02:26, 02:99, 02:171:02																
*02:34-02:35:03, 02:56:01-02:56:02, 02:62, 02:78, 02:103, 03:19, 03:40, 03:43, 03:53, 03:82, 11:09, 11:22-11:24:02, 11:31, 11:50Q, 11:59, 24:19, 30:18, 74:13, C*03:82	1															
*02:49, 24:87, B*27:45																
*02:52							7									
*02:55, 33:22																
*02:74:02, 02:159, 23:25, 24:24, 24:67																
*02:114, 02:246, 29:22																
*02:117																
*02:121, 02:237, 24:18, C*12:37															15	
*02:122						6										16
*02:135, 25:05																
*02:143						6										16
*02:229, 36:02																
*02:243, 24:82																
*03:01:01-03:01:08, 03:01:10-03:03N, 03:05- 03:07, 03:09, 03:11N- 03:16, 03:20-03:23, 03:25-03:31, 03:33- 03:35, 03:37-03:39, 03:42, 03:44-03:49, 03:51-03:52, 03:54- 03:56, 03:58-03:65, 03:67-03:81, 11:35	1															
*03:01:09, 03:08, 03:32, 03:36N, 03:41, 03:57, 29:01:01:01- 29:02:01:01, 29:02:03- 29:02:05, 29:04, 29:06- 29:21, 30:26, 31:03- 31:04, 31:06, 32:04																
Well No.	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16

Lot No.: **70K**

Lot-specific Information

www.olerup-ssp.com

165	200	325	90	165	165	185	375	110	100	185	200	80	145	220	165	Length of spec.
185	225			215				240	185	235	230	250	245		195	PCR product(s)
17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	Well No.
												w				*02:26, 02:99, 02:171:02 *02:34-02:35:03, 02:56:01-02:56:02, 02:62, 02:78, 02:103, 03:19, 03:40, 03:43, 03:53, 03:82, 11:09, 11:22-11:24:02, 11:31, 11:50Q, 11:59, 24:19, 30:18, 74:13, C*03:82
17				21												*02:49, 24:87, B*27:45 *02:52
							24								32	*02:55, 33:22 *02:74:02, 02:159, 23:25, 24:24, 24:67 *02:114, 02:246, 29:22
17			20			23						29	30			*02:117
17																*02:121, 02:237, 24:18, C*12:37 *02:122
17													30			*02:135, 25:05 *02:143
					22	23										*02:229, 36:02 *02:243, 24:82
								25								*03:01:01-01-03:01:08, 03:01:10-03:03N, 03:05- 03:07, 03:09, 03:11N- 03:16, 03:20-03:23, 03:25-03:31, 03:33- 03:35, 03:37-03:39, 03:42, 03:44-03:49, 03:51-03:52, 03:54- 03:56, 03:58-03:65, 03:67-03:81, 11:35
																*03:01:09, 03:08, 03:32, 03:36N, 03:41, 03:57, 29:01:01:01- 29:02:01:01, 29:02:03- 29:02:05, 29:04, 29:06- 29:21, 30:26, 31:03- 31:04, 31:06, 32:04
17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	Well No.

Lot No.: **70K**

Lot-specific Information

www.olerup-ssp.com

Length of spec.	195	435	195	180	140	225	135	160	150	165	160	205	210	150	145	150
PCR product(s)				225	235		155	240	195		200	405	240	195	205	215
									250							
Well No.	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
*03:04	1															
*03:10, 11:04	1									10						
*03:17	1														15	
*03:24, 34:02	1	2														
*03:50, 03:66	1															
*11:01:01-11:01:22, 11:03, 11:05-11:07, 11:11-11:13, 11:15:01- 11:15:02, 11:20-11:21N, 11:26, 11:29-11:30, 11:32-11:34, 11:36- 11:37, 11:41-11:43, 11:46-11:49, 11:52Q, 11:54-11:56, 11:58, 11:60-11:64	1									10						
*11:02:01-11:02:03, 11:14, 11:16-11:19, 11:40, 11:45, 11:51, 11:53, 11:57										10						
*11:08, 11:44	1															
*11:10	1	2								10						
*11:25	1															
*11:27, 11:39	1									10						
*25:01:01-25:03, 25:06- 25:07, 25:10-25:11, 25:13, 26:01:01- 26:01:04, 26:01:07- 26:01:14, 26:01:16- 26:07:02, 26:09-26:10, 26:12-26:13, 26:15, 26:17, 26:19-26:21, 26:23-26:26, 26:29- 26:39, 26:41-26:42, 26:45-26:46, 26:49- 26:50, 43:01, 66:03, 66:05, 66:11																
*25:04, 25:12N, 26:01:05- 26:01:06, 26:08, 26:27, 26:48																
Well No.	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16

Lot No.: **70K**

Lot-specific Information

www.olerup-ssp.com

165	200	325	90	165	165	185	375	110	100	185	200	80	145	220	165	Length of spec. PCR product(s)	
185	225			215				240	185	235	230	250	245		195		
17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	Well No.	
	18					23										*03:04	
						23										*03:10, 11:04	
						23										*03:17	
						23										*03:24, 34:02	
					22	23										*03:50, 03:66	
																*11:01:01-11:01:22, 11:03, 11:05-11:07, 11:11-11:13, 11:15:01- 11:15:02, 11:20-11:21N, 11:26, 11:29-11:30, 11:32-11:34, 11:36- 11:37, 11:41-11:43, 11:46-11:49, 11:52Q, 11:54-11:56, 11:58, 11:60-11:64	
																*11:02:01-11:02:03, 11:14, 11:16-11:19, 11:40, 11:45, 11:51, 11:53, 11:57	
					22											*11:08, 11:44	
																*11:10	
												w				*11:25	
	18															*11:27, 11:39	
																*25:01:01-25:03, 25:06- 25:07, 25:10-25:11, 25:13, 26:01:01- 26:01:04, 26:01:07- 26:01:14, 26:01:16- 26:07:02, 26:09-26:10, 26:12-26:13, 26:15, 26:17, 26:19-26:21, 26:23-26:26, 26:29- 26:39, 26:41-26:42, 26:45-26:46, 26:49- 26:50, 43:01, 66:03, 66:05, 66:11	
17													30	31			
																*25:04, 25:12N, 26:01:05- 26:01:06, 26:08, 26:27, 26:48	
													30	31			
17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	Well No.	

Length of spec.	195	435	195	180	140	225	135	160	150	165	160	205	210	150	145	150
PCR product(s)				225	235		155	240	195		200	405	240	195	205	215
									250							
Well No.	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
*25:09, 26:01:15, 26:14, 26:28																
*26:16																
*26:18													13			
*26:22																
*26:40																
*26:43:01-26:43:02									9							
*29:05										10						
*33:18		2														
*34:01:01-34:01:02, 66:01-66:02, 66:04, 66:07-66:08, 66:10, 66:12-66:14	1															
*34:03-34:04, 34:07-34:08	1	2							?							
*34:05	1															
*34:06	1								?							
*36:01, 36:03, 36:05																
*36:04																
*66:06	1								9							
*66:09	1															
*66:15					5											
*69:01	1															
Well No.	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16

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-A*68 subtyping.

In addition, wells number 5, 8 to 11, 13, 14, 18, 22 and 29 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 1st, 2nd, 3rd or 4th exon or the 2nd 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, 3rd or 4th 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.

⁴The A*68:29 and A*68:52 alleles can be distinguished by the different sizes of the specific PCR products generated by primer mix 25.

Lot No.: **70K**

Lot-specific Information

www.olerup-ssp.com

165	200	325	90	165	165	185	375	110	100	185	200	80	145	220	165	Length of spec. PCR product(s)
185	225			215				240	185	235	230	250	245		195	
17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	Well No.
17														31		*25:09, 26:01:15, 26:14, 26:28
17													30	31	32	*26:16
17														31		*26:18
17							24						30	31		*26:22
														31		*26:40
													30	31		*26:43:01-26:43:02
						23										*29:05
						23										*33:18
17													30	31		*34:01:01-34:01:02, 66:01-66:02, 66:04, 66:07-66:08, 66:10, 66:12-66:14
						23								?		*34:03-34:04, 34:07-34:08
17													30	?		*34:05
														?		*34:06
					w	23										*36:01, 36:03, 36:05
					w											*36:04
													30	31		*66:06
17							24						30	31		*66:09
17													30	31		*66:15
							24									*69:01
17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	Well No.

⁵Primer mix 4: Specific PCR fragment of 180 bp in the A*68:30 allele. Specific PCR fragment of 225 bp in the A*68:03:01-68:03:02, A*68:05 and A*68:20 alleles. Specific PCR fragment of 180 and 225 bp in the A*02:06:05 allele.

Primer mix 5: Specific PCR fragment of 140 bp in the A*68:25 allele. Specific PCR fragment of 235 bp in the A*68:04 and the A*66:15 alleles.

Primer mix 7: Specific PCR fragment of 135 bp in the A*68:06 and A*02:52 alleles. Specific PCR fragment of 155 bp in the A*68:32 allele.

Primer mix 8: Specific PCR fragment of 160 bp in the A*68:07 allele. Specific PCR fragment of 240 bp in the A*68:46 allele.

Primer mix 9: Specific PCR fragment of 150 bp in the A*68:18N allele. Specific PCR fragment of 195 bp in the A*68:47 allele. Specific PCR fragment of 250 bp in the A*68:08:01-68:08:02 and in the A*26:43:01-26:43:02, 34:03[?]-34:04[?], 34:06[?]-34:08[?] and 66:06 alleles.

Primer mix 11: Specific PCR fragment of 160 bp in the A*68:17 allele. Specific PCR fragment of 200 bp in the A*68:10 and A*68:14 alleles.

Primer mix 12: Specific PCR fragment of 205 bp in the A*68:38 allele. Specific PCR fragment of 405 bp in the A*68:11N allele.

Primer mix 13: Specific PCR fragment of 210 bp in the A*68:12 and A*68:50 alleles. Specific PCR fragment of 240 bp in the A*68:51 and 26:18 alleles.

Primer mix 14: Specific PCR fragment of 150 bp in the A*68:41 allele. Specific PCR fragment of 195 bp in the A*68:13 allele.

Lot No.: **70K**

Lot-specific Information

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Primer mix 15: Specific PCR fragment of 145 bp in the A*68:19 and in the A*02:237, 03:17 and 24:18 alleles. Specific PCR fragment of 205 bp in the A*68:14 and in the A*02:121 and in the C*12:37 alleles.

Primer mix 16: Specific PCR fragment of 150 bp in the A*68:16 allele. Specific PCR fragment of 215 bp in the A*68:15, 68:31 and 68:40 and in the A*02:122 and 02:143 alleles.

Primer mix 17: Specific PCR fragment of 165 bp in the A*68:02:01:01-68:02:04, 68:15, 68:18N, 68:27-68:28, 68:31, 68:34, 68:40, 68:44, 68:48-68:49N, 68:51 and 68:53-68:54 and in the A*02:02^w, 02:03:01-02:03:03, 02:05:01^w-02:05:03^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, 23:02, 24:06, 24:87, 24:138, 25:01:01-25:03, 25:05-25:11, 25:13, 26:01:01-26:01:04, 26:01:07-26:07:02, 26:09-26:26, 26:28-26:39, 26:42, 26:45-26:47, 26:49-26:50, 31:30, 32:10, 34:01:01-34:01:02, 34:05, 43:01, 66:01-66:05, 66:07-66:15 and in the B*27:25, B*27:45 and C*02:07 alleles. Specific PCR fragment of 185 bp in the A*68:20 allele. Specific PCR fragment of 165 and 185 bp in the A*26:41 allele.

Primer mix 18: Specific PCR fragment of 200 bp in the A*68:26 and in the A*01:01:01:01-01:04N, 01:06-01:29, 01:31N-01:66, 03:18, 11:27, 11:38-11:39, 24:17, 24:41, 29:03 and 80:01-80:02 alleles. Specific PCR fragment of 225 bp in the A*68:21 and A*03:04 alleles.

Primer mix 21: Specific PCR fragment of 165 bp in the A*68:28 and in the A*02:49, 24:87 and in the B*27:45 alleles. Specific PCR fragment of 215 bp in the A*68:24 allele.

Primer mix 25: Specific PCR fragment of 110 bp in the A*68:52 allele. Specific PCR fragment of 240 bp in the A*68:29 and in the A*02:243 and 24:82 alleles.

Primer mix 26: Specific PCR fragment of 100 bp in the A*68:49N allele. Specific PCR fragment of 185 bp in the A*68:33 allele.

Primer mix 27: Specific PCR fragment of 185 bp in the A*68:34 allele. Specific PCR fragment of 235 bp in the A*68:43 allele.

Primer mix 28: Specific PCR fragment of 200 bp in the A*68:35 and 68:38 alleles. Specific PCR fragment of 230 bp in the A*68:44 allele.

Primer mix 29: Specific PCR fragment of 80 bp in the A*68:42, 68:54, 02:03:01-02:03:03, 02:26^w, 02:99^w, 02:117, 02:148, 02:171:02^w, 02:253, 02:258, 02:264, 11:25^w alleles. Specific PCR fragment of 250 bp in the A*68:36 allele.

Primer mix 30: Specific PCR fragment of 145 bp in the A*02:117, 02:135, 25:01:01-25:07, 25:10-25:13, 26:01:01-26:01:14, 26:01:16-26:10, 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, 26:48-26:50, 34:01:01-34:01:02, 34:05, 43:01 and 66:01-66:15 alleles. Specific PCR fragment of 245 bp in the A*68:37 allele.

Primer mix 32: Specific PCR fragment of 165 bp in the A*68:53 and 02:159 alleles. Specific PCR fragment of 195 bp in the A*68:21 and 68:45 and in the A*02:74:02, 23:25, 24:24, 24:67 and 26:16 alleles.

'w', may be weakly amplified.

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

CELL LINE VALIDATION SHEET																				
HLA-A*68 SSP subtyping kit																				
				Well																
				1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	
				Prod. No.:	200962701	200732602	200732603	200732604	200732605	201079506	200732607	200962708	200962709	200732610	200732611	200962712	201079513	201079514	200732615	200962716
IHC cell line			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	+	-	-	-	-	-	-	-	-	+	-	-	-	-	-	-

CELL LINE VALIDATION SHEET																				
HLA-A*68 SSP subtyping kit																				
			Prod. No.:	Well																
				17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	
				200732617	201079518	200732619	200732620	200732621	200732622	200732623	200732624	201079525	201079526	200962727	200962728	201079529	200846230	201079531	201079532	
	IHWC cell line	A*																		
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	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

CERTIFICATE OF ANALYSIS

Olerup SSP® HLA-A*68 SSP

Product number: 101.418-12/04 – including *Taq* pol.
Lot number: 70K
Expiry date: 2013-July-01
Number of tests: 12 tests – Product No. 101.418-12
4 tests – Product No. 101.418-04
Number of wells per test: 32

Well specifications:

Well No.	Production No.	Well No.	Production No.	Well No.	Production No.
1	2009-627-01	13	2010-795-13	25	2010-795-25
2	2007-326-02	14	2010-795-14	26	2010-795-26
3	2007-326-03	15	2007-326-15	27	2009-627-27
4	2007-326-04	16	2009-627-16	28	2009-627-28
5	2007-326-05	17	2007-326-17	29	2010-795-29
6	2010-795-06	18	2010-795-18	30	2008-462-30
7	2007-326-07	19	2007-326-19	31	2010-795-31
8	2009-627-08	20	2007-326-20	32	2010-795-32
9	2009-627-09	21	2007-326-21		
10	2007-326-10	22	2007-326-22		
11	2007-326-11	23	2007-326-23		
12	2009-627-12	24	2007-326-24		

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 solutions 5, 7 to 9, 11 to 13, 15, 16, 19 to 21, 25 to 28 and 32 were available. The specificities of the primers in primer solutions 5, 7 to 9, 11, 13, 15, 16, 20, 21, 25 to 27 and 32 were tested by separately adding one additional 5'-primer, respectively one additional 3'-primer. The specificities of the 3'-primers in primer solutions 12, 19 and 28 were tested by separately adding one additional 5'-primer, it was not possible to test the 5'-primers. In primer solution 5, 7, 8, 11, 17, 25 and 27 one of the 5'-primers was not possible to test. In primer solutions 8, 9, 14 to 16, 18, 21, 26, 27, 29, 30 and 32 one or two of the 3'-primers were not possible to test. Additional primers in primer solutions 4, 6, 14 and 29 to 31 were tested by separately adding either one additional 5'-primer, or one additional 3'-primer.

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

Date of approval: 2011-January-31

Approved by:

Quality Control, Supervisor

Lot No.: **70K**

Lot-specific Information

www.olerup-ssp.com

Declaration of Conformity

Product name: *Olerup* SSP® HLA-A*68
Product number: 101.418-12/04
Lot number: 70K

Intended use: HLA-A*68 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 13485:2003, following the provisions of the 98/79/EC Directive on *in vitro* diagnostic medical devices, Annex II List B, 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.

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
2012-October-05

Ann-Cathrin Jareman
Head of QA and Regulatory Affairs

Lot No.: **70K**

Lot-specific Information

www.olerup-ssp.com

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