

101.432-12 – including *Taq* polymerase, IFU-01
101.432-12u – without *Taq* polymerase, IFU-02

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

Lot No.: **19S**

Lot-specific information

Olerup SSP[®] HLA-A*33

Product number:	101.432-12 – including <i>Taq</i> polymerase 101.432-12u – without <i>Taq</i> polymerase
Lot number:	19S
Expiry date:	2015-November-01
Number of tests:	12
Number of wells per test:	24
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. 19S.

CHANGES COMPARED TO THE PREVIOUS OLERUP SSP[®] HLA-A*33 LOT (42N)

The HLA-A*33 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

The Lot-specific information for HLA-A*33 including and without *Taq* polymerase is now described in one common Product Insert.

¹As described in section Uniquely Identified Alleles.

The HLA-A*33 specificity and interpretation tables have been updated for the HLA-A alleles described since the previous *Olerup SSP[®]* HLA-A*33 lot was made (**Lot No. 42N**).

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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
6	-	Added	3'-primer added for the A*33:58 allele.
8	Exchanged	-	5'-primer exchanged to decrease unspecific amplifications.
9	-	Added	3'-primer added for the A*33:58 allele.
10	-	Added, Exchanged	3'-primer added for the A*33:42 allele, exchanged 3'-primer for resolution of the A*33:08 allele
12	-	Added	3'-primer added for the A*33:42 allele
17	-	Exchanged	3'-primer exchanged for the A*33:18:02 allele.
22	-	Modified	Increased yield of specific PCR product.
23	Added	Added	Primer pair added for the A*33:52 allele

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PRODUCT DESCRIPTION

HLA-A*33 SSP subtyping

CONTENT

The primer set contains 5'- and 3'-primers for identifying the A*33:01 to A*33:67 alleles.

PLATE LAYOUT

Each test consists of 24 PCR reactions in a 24 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

The 24 well cut PCR plate is marked with 'HLA-A*33' in silver/gray ink.

Well No. 1 is marked with the Lot No. '19S'.

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 covered with a PCR-compatible foil.

Please note: When removing each 24 well PCR plate, make sure that the remaining plates stay covered. Use a scalpel or a similar instrument to carefully cut the foil between the plates.

INTERPRETATION

The interpretation of HLA-A*33 SSP subtypings will be influenced by two A*01, several A*02, nine A*03, five A*11, three A*23, eleven A*24, the A*25, the A*26, most A*29, the A*30:47, most A*31, most A*32, four A*34, the A*43:01, the A*66, two A*68 and the A*74 alleles when present on the other haplotype. In addition, the C*02:02:15 allele will be amplified by primer mix 19 and the B*51:136 allele will be amplified by primer mix 23.

UNIQUELY IDENTIFIED ALLELES

All the HLA-A*33 alleles, i.e. **A*33:01 to A*33:67 alleles**, recognized by the HLA Nomenclature Committee in January 2013¹ will be amplified by the primers in the HLA-A*33 SSP kit².

The HLA-A*33 kit enables separation of the confirmed HLA-A*33 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*33 alleles is listed below.

The HLA-A*33 kit also enables identification of polymorphisms in exons outside of the region encoding the peptide binding domain and of null and alternatively expressed alleles.

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Lot No.: 19S**Lot-specific information**

The HLA-A*33 subtyping kit cannot distinguish the following silent mutations: the A*33:01:01-33:01:07, the A*33:03:01-33:03:013 or the 33:18:01-33:18:02 alleles.

The A*33:29 and 33:39 alleles may be distinguished by the different sizes of the specific PCR products generated by primer mix 20.

The A*33:31 and 33:44 alleles may be distinguished by the different sizes of the specific PCR products generated by primer mix 22.

¹HLA-A alleles listed on the IMGT/HLA web page 2013-January-11, release 3.11.0, www.ebi.ac.uk/imgt/hla.

²The A*33:09 and the A*02:309, 26:22 and 66:09 alleles, the A*33:51 and A*66:15 alleles and the A*33:53, 31:02 and 31:07-31:08 alleles give rise to identical amplification patterns with the HLA-A*33 subtyping kit. These alleles can be distinguished by e.g. the HLA-A low resolution kit and/or the HLA-A*02, HLA-A*26, HLA-A*31 and HLA-A*66 subtyping kits.

ALLELE CONFIRMATION STATUS

Allele	Status ¹	Allele	Status ¹	Allele	Status ¹
A*33:01:01	Confirmed	A*33:14	Unconfirmed	A*33:43	Unconfirmed
A*33:01:02	Confirmed	A*33:15	Unconfirmed	A*33:44	Confirmed
A*33:01:03	Confirmed	A*33:16	Confirmed	A*33:45	Unconfirmed
A*33:01:04	Unconfirmed	A*33:17	Unconfirmed	A*33:46	Unconfirmed
A*33:01:05	Unconfirmed	A*33:18:01	Unconfirmed	A*33:47	Unconfirmed
A*33:01:06	Unconfirmed	A*33:18:02	Unconfirmed	A*33:48	Unconfirmed
A*33:01:07	Unconfirmed	A*33:19	Unconfirmed	A*33:49	Unconfirmed
A*33:03:01	Confirmed	A*33:20	Unconfirmed	A*33:50	Unconfirmed
A*33:03:02	Unconfirmed	A*33:21	Unconfirmed	A*33:51	Unconfirmed
A*33:03:03Q	Unconfirmed	A*33:22	Unconfirmed	A*33:52	Confirmed
A*33:03:04	Unconfirmed	A*33:23	Confirmed	A*33:53	Unconfirmed
A*33:03:05	Unconfirmed	A*33:24	Unconfirmed	A*33:54	Confirmed
A*33:03:06	Unconfirmed	A*33:25	Confirmed	A*33:55	Unconfirmed
A*33:03:07	Confirmed	A*33:26	Confirmed	A*33:56	Unconfirmed
A*33:03:08	Unconfirmed	A*33:27	Confirmed	A*33:57	Unconfirmed
A*33:03:09	Unconfirmed	A*33:28	Unconfirmed	A*33:58	Confirmed
A*33:03:10	Unconfirmed	A*33:29	Unconfirmed	A*33:59	Unconfirmed
A*33:03:11	Unconfirmed	A*33:30	Unconfirmed	A*33:60	Unconfirmed
A*33:03:12	Unconfirmed	A*33:31	Unconfirmed	A*33:61	Unconfirmed
A*33:03:13	Unconfirmed	A*33:32:01	Unconfirmed	A*33:62	Unconfirmed
A*33:04	Confirmed	A*33:32:02	Unconfirmed	A*33:63	Unconfirmed
A*33:05	Confirmed	A*33:33	Confirmed	A*33:64	Unconfirmed
A*33:06	Unconfirmed	A*33:34	Confirmed	A*33:65	Unconfirmed
A*33:07	Confirmed	A*33:35	Unconfirmed	A*33:66	Unconfirmed
A*33:08	Confirmed	A*33:36	Confirmed	A*33:67	Unconfirmed
A*33:09	Confirmed	A*33:37	Unconfirmed		
A*33:10	Unconfirmed	A*33:39	Unconfirmed		
A*33:11	Confirmed	A*33:40	Unconfirmed		
A*33:12	Unconfirmed	A*33:41	Unconfirmed		
A*33:13	Unconfirmed	A*33:42	Confirmed		

¹Allele status “confirmed” or “unconfirmed” as listed on the IMGT/HLA web page 2013-January-11, release 3.11.0, www.ebi.ac.uk/imgt/hla.

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RESOLUTION IN HOMO- AND HETEROZYGOTES

A total of 85 alleles generate 41 amplification patterns that can be combined in 861 homozygous and heterozygous combinations. 571 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.

---+----- ++----- -----	*33:08, *33:08 = *33:08, *33:09 = *33:08, *33:53 = *33:09, *33:53
+---+----- -----+-----	*33:03:01, *33:54 = *33:54, *33:54
+---+----- -----+-----	*33:03:01, *33:52 = *33:52, *33:52
+---+----- -----+-----	*33:03:01, *33:31 = *33:31, *33:31
+---+----- -----+-----	*33:03:01, *33:30 = *33:30, *33:30
+---+----- -----+-----	*33:03:01, *33:29 = *33:29, *33:29
+---+----- -----+-----	*33:03:01, *33:28 = *33:28, *33:28
+---+----- -----+-----	*33:03:01, *33:18:01 = *33:03:01, *33:26 = *33:18:01, *33:26 = *33:26, *33:26
+---+----- -----+-----	*33:03:01, *33:17 = *33:03:01, *33:21 = *33:17, *33:17 = *33:17, *33:21
+---+----- -----+-----	*33:03:01, *33:23 = *33:23, *33:23
+---+----- -----+-----	*33:03:01, *33:15 = *33:03:01, *33:19 = *33:15, *33:15 = *33:15, *33:19
+---+----- -----+-----	*33:03:01, *33:12 = *33:12, *33:12
+---+----- -----+-----	*33:03:01, *33:11 = *33:11, *33:11
+---+----- -----+-----	*33:03:01, *33:10 = *33:10, *33:10
+---+----- -----+-----	*33:03:01, *33:13 = *33:03:01, *33:53 = *33:13, *33:13 = *33:13, *33:53
+---+----- -----+-----	*33:03:01, *33:09 = *33:03:01, *33:14 = *33:09, *33:14 = *33:14, *33:14
+---+----- -----+-----	*33:03:01, *33:24 = *33:24, *33:24
+---+----- -----+-----	*33:03:01, *33:06 = *33:03:01, *33:51 = *33:06, *33:06 = *33:06, *33:51
+---+----- -----+-----	*33:03:01, *33:20 = *33:20, *33:20
+---+----- -----+-----	*33:03:01, *33:33 = *33:33, *33:33
+---+----- -----+-----	*33:18:01, *33:54 = *33:26, *33:54
+---+----- -----+-----	*33:18:01, *33:52 = *33:26, *33:52
+---+----- -----+-----	*33:18:01, *33:31 = *33:26, *33:31
+---+----- -----+-----	*33:18:01, *33:30 = *33:26, *33:30
+---+----- -----+-----	*33:18:01, *33:29 = *33:26, *33:29
+---+----- -----+-----	*33:18:01, *33:28 = *33:26, *33:28
+---+----- -----+-----	*33:17, *33:54 = *33:21, *33:54
+---+----- -----+-----	*33:17, *33:52 = *33:21, *33:52
+---+----- -----+-----	*33:17, *33:31 = *33:21, *33:31
+---+----- -----+-----	*33:17, *33:30 = *33:21, *33:30
+---+----- -----+-----	*33:17, *33:29 = *33:21, *33:29
+---+----- -----+-----	*33:17, *33:28 = *33:21, *33:28
+---+----- -----+-----	*33:17, *33:18:01 = *33:17, *33:26 = *33:18:01, *33:21 = *33:21, *33:26
+---+----- -----+-----	*33:18:01, *33:23 = *33:23, *33:26
+---+----- -----+-----	*33:17, *33:23 = *33:21, *33:23
+---+----- -----+-----	*33:15, *33:54 = *33:19, *33:54
+---+----- -----+-----	*33:15, *33:52 = *33:19, *33:52
+---+----- -----+-----	*33:15, *33:31 = *33:19, *33:31
+---+----- -----+-----	*33:15, *33:30 = *33:19, *33:30
+---+----- -----+-----	*33:15, *33:29 = *33:19, *33:29
+---+----- -----+-----	*33:15, *33:28 = *33:19, *33:28
+---+----- -----+-----	*33:15, *33:18:01 = *33:15, *33:26 = *33:19, *33:26
+---+----- -----+-----	*33:15, *33:17 = *33:15, *33:21 = *33:17, *33:19 = *33:19, *33:21
+---+----- -----+-----	*33:15, *33:23 = *33:19, *33:23
+---+----- -----+-----	*33:12, *33:18:01 = *33:12, *33:26
+---+----- -----+-----	*33:12, *33:17 = *33:12, *33:21
+---+----- -----+-----	*33:12, *33:15 = *33:12, *33:19
+---+----- -----+-----	*33:11, *33:18:01 = *33:11, *33:26
+---+----- -----+-----	*33:03:01, *33:36 = *33:11, *33:17 = *33:11, *33:21 = *33:11, *33:36 = *33:17, *33:36 = *33:21, *33:36 = *33:36, *33:36
+---+----- -----+-----	*33:11, *33:15 = *33:11, *33:19
+---+----- -----+-----	*33:10, *33:18:01 = *33:10, *33:26
+---+----- -----+-----	*33:10, *33:17 = *33:10, *33:21
+---+----- -----+-----	*33:10, *33:15 = *33:10, *33:19



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+--+-----	---+-----	-----	*33:03:01, *33:25 = *33:10, *33:12 = *33:10, *33:25 = *33:12, *33:25 = *33:25, *33:25
+--+-----	-+-----	-----+	*33:13, *33:54 = *33:53, *33:54
+--+-----	-+-----	-----+	*33:13, *33:52 = *33:52, *33:53
+--+-----	-+-----	-----+	*33:13, *33:31 = *33:31, *33:53
+--+-----	-+-----	-----+	*33:13, *33:30 = *33:30, *33:53
+--+-----	-+-----	-----+	*33:13, *33:29 = *33:29, *33:53
+--+-----	-+-----	-----+	*33:13, *33:28 = *33:28, *33:53
+--+-----	-+-----	+-----	*33:13, *33:18:01 = *33:13, *33:26 = *33:18:01, *33:53 = *33:26, *33:53
+--+-----	-+-----	+-----	*33:13, *33:17 = *33:13, *33:21 = *33:17, *33:53
+--+-----	-+-----	+-----	*33:13, *33:23 = *33:23, *33:53
+--+-----	-+-----	+-----	*33:13, *33:15 = *33:13, *33:19 = *33:15, *33:53 = *33:19, *33:53
+--+-----	-+-----	+-----	*33:12, *33:13 = *33:12, *33:53
+--+-----	-+-----	+-----	*33:03:01, *33:42 = *33:11, *33:13 = *33:11, *33:42 = *33:11, *33:53 = *33:13, *33:42 = *33:42, *33:42 = *33:42, *33:53
+--+-----	-+-----	+-----	*33:10, *33:13 = *33:10, *33:53
+--+-----	-+-----	+-----	*33:09, *33:54 = *33:14, *33:54
+--+-----	-+-----	+-----	*33:09, *33:52 = *33:14, *33:52
+--+-----	-+-----	+-----	*33:09, *33:31 = *33:14, *33:31
+--+-----	-+-----	+-----	*33:09, *33:30 = *33:14, *33:30
+--+-----	-+-----	+-----	*33:09, *33:29 = *33:14, *33:29
+--+-----	-+-----	+-----	*33:09, *33:28 = *33:14, *33:28
+--+-----	-+-----	+-----	*33:09, *33:18:01 = *33:09, *33:26 = *33:14, *33:18:01 = *33:14, *33:26
+--+-----	-+-----	+-----	*33:09, *33:17 = *33:14, *33:17 = *33:14, *33:21
+--+-----	-+-----	+-----	*33:09, *33:23 = *33:14, *33:23
+--+-----	-+-----	+-----	*33:09, *33:15 = *33:09, *33:19 = *33:14, *33:15 = *33:14, *33:19
+--+-----	-+-----	+-----	*33:09, *33:12 = *33:12, *33:14
+--+-----	-+-----	+-----	*33:09, *33:11 = *33:11, *33:14
+--+-----	-+-----	+-----	*33:09, *33:10 = *33:10, *33:14
+--+-----	-+-----	+-----	*33:03:01, *33:08 = *33:03:01, *33:22 = *33:08, *33:13 = *33:08, *33:14 = *33:08, *33:22 = *33:09, *33:13 = *33:09, *33:22 = *33:13, *33:14 = *33:13, *33:22 = *33:14, *33:22 = *33:14, *33:53 = *33:22, *33:22 = *33:22, *33:53
+--+-----	-+-----	+-----	*33:18:01, *33:24 = *33:24, *33:26
+--+-----	-+-----	+-----	*33:17, *33:24 = *33:21, *33:24
+--+-----	-+-----	+-----	*33:15, *33:24 = *33:19, *33:24
+--+-----	-+-----	+-----	*33:13, *33:24 = *33:24, *33:53
+--+-----	-+-----	+-----	*33:09, *33:24 = *33:14, *33:24
+--+-----	-+-----	+-----	*33:06, *33:54 = *33:51, *33:54
+--+-----	-+-----	+-----	*33:06, *33:52 = *33:51, *33:52
+--+-----	-+-----	+-----	*33:06, *33:31 = *33:31, *33:51
+--+-----	-+-----	+-----	*33:06, *33:30 = *33:30, *33:51
+--+-----	-+-----	+-----	*33:06, *33:29 = *33:29, *33:51
+--+-----	-+-----	+-----	*33:06, *33:28 = *33:28, *33:51
+--+-----	-+-----	+-----	*33:06, *33:18:01 = *33:06, *33:26 = *33:18:01, *33:51 = *33:26, *33:51
+--+-----	-+-----	+-----	*33:06, *33:17 = *33:06, *33:21 = *33:17, *33:51
+--+-----	-+-----	+-----	*33:06, *33:23 = *33:23, *33:51
+--+-----	-+-----	+-----	*33:06, *33:15 = *33:06, *33:19 = *33:15, *33:51 = *33:19, *33:51
+--+-----	-+-----	+-----	*33:06, *33:12 = *33:12, *33:51
+--+-----	-+-----	+-----	*33:06, *33:11 = *33:11, *33:51
+--+-----	-+-----	+-----	*33:06, *33:10 = *33:10, *33:51
+--+-----	-+-----	+-----	*33:06, *33:13 = *33:06, *33:53 = *33:13, *33:51
+--+-----	-+-----	+-----	*33:06, *33:09 = *33:06, *33:14 = *33:14, *33:51
+--+-----	-+-----	+-----	*33:06, *33:24 = *33:24, *33:51
+--+-----	-+-----	+-----	*33:18:01, *33:20 = *33:20, *33:26
+--+-----	-+-----	+-----	*33:17, *33:20 = *33:20, *33:21
+--+-----	-+-----	+-----	*33:15, *33:20 = *33:19, *33:20
+--+-----	-+-----	+-----	*33:13, *33:20 = *33:20, *33:53
+--+-----	-+-----	+-----	*33:03:01, *33:58 = *33:09, *33:20 = *33:09, *33:58 = *33:14, *33:20 = *33:14, *33:58 = *33:20, *33:58 = *33:58, *33:58
+--+-----	-+-----	+-----	*33:06, *33:20 = *33:20, *33:51
+--+-----	-+-----	+-----	*33:18:01, *33:33 = *33:26, *33:33
+--+-----	-+-----	+-----	*33:17, *33:33 = *33:21, *33:33
+--+-----	-+-----	+-----	*33:15, *33:33 = *33:19, *33:33



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+---+---+ +-----	-----	*33:13, *33:33 = *33:33, *33:53
+---+---+ +-----	-----	*33:09, *33:33 = *33:14, *33:33
+---+---+ +-----	-----	*33:06, *33:33 = *33:33, *33:51
++-+---+ +-----	-----	*33:03:01, *33:04 = *33:04, *33:33
+++-----	-----+	*33:01:01, *33:34 = *33:34, *33:34
+++-----	-----+	*33:01:01, *33:32:01 = *33:32:01, *33:32:01
+++-----	-----+	*33:01:01, *33:27 = *33:27, *33:27
+++-----	-----+	*33:01:01, *33:16 = *33:16, *33:16
+++-----	-----+	*33:01:01, *33:07 = *33:07, *33:07
+++-----	-----	*33:01:01, *33:05 = *33:05, *33:05
+++-----	-----	*33:01:01, *33:03:01 = *33:01:01, *33:40 = *33:03:01, *33:40 = *33:40, *33:40
++-+---+ +-----	-----	*33:18:01, *33:36 = *33:26, *33:36
+---+---+ +-----	-----	*33:15, *33:36 = *33:19, *33:36
+---+---+ +-----	-----	*33:18:01, *33:25 = *33:25, *33:26
+---+---+ +-----	-----	*33:17, *33:25 = *33:21, *33:25
+---+---+ +-----	-----	*33:15, *33:25 = *33:19, *33:25
+---+---+ +-----	-----	*33:18:01, *33:42 = *33:26, *33:42
+---+---+ +-----	-----	*33:13, *33:36 = *33:17, *33:42 = *33:21, *33:42 = *33:36, *33:42 = *33:36, *33:53
+---+---+ +-----	-----	*33:15, *33:42 = *33:19, *33:42
+---+---+ +-----	-----	*33:13, *33:25 = *33:25, *33:53
+---+---+ +-----	-----	*33:09, *33:36 = *33:14, *33:36
+---+---+ +-----	-----	*33:09, *33:25 = *33:14, *33:25
+---+---+ +-----	-----+	*33:08, *33:54 = *33:22, *33:54
+---+---+ +-----	-----+	*33:08, *33:52 = *33:22, *33:52
+---+---+ +-----	-----+	*33:08, *33:31 = *33:22, *33:31
+---+---+ +-----	-----+	*33:08, *33:30 = *33:22, *33:30
+---+---+ +-----	-----+	*33:08, *33:29 = *33:22, *33:29
+---+---+ +-----	-----	*33:08, *33:28 = *33:22, *33:28
+---+---+ +-----	-----	*33:08, *33:18:01 = *33:08, *33:26 = *33:18:01, *33:22 = *33:22, *33:26
+---+---+ +-----	-----	*33:08, *33:17 = *33:17, *33:22 = *33:21, *33:22
+---+---+ +-----	-----	*33:08, *33:23 = *33:22, *33:23
+---+---+ +-----	-----	*33:08, *33:15 = *33:08, *33:19 = *33:15, *33:22 = *33:19, *33:22
+---+---+ +-----	-----	*33:08, *33:12 = *33:12, *33:22
+---+---+ +-----	-----	*33:08, *33:11 = *33:08, *33:42 = *33:09, *33:42 = *33:11, *33:22 = *33:14, *33:42 = *33:22, *33:42
+---+---+ +-----	-----	*33:08, *33:10 = *33:10, *33:22
+---+---+ +-----	-----	*33:08, *33:24 = *33:22, *33:24
+---+---+ +-----	-----	*33:06, *33:36 = *33:36, *33:51
+---+---+ +-----	-----	*33:06, *33:25 = *33:25, *33:51
+---+---+ +-----	-----	*33:06, *33:42 = *33:42, *33:51
+---+---+ +-----	-----	*33:06, *33:08 = *33:06, *33:22 = *33:22, *33:51
+---+---+ +-----	-----	*33:18:01, *33:58 = *33:26, *33:58
+---+---+ +-----	-----	*33:17, *33:58 = *33:21, *33:58
+---+---+ +-----	-----	*33:15, *33:58 = *33:19, *33:58
+---+---+ +-----	-----	*33:08, *33:20 = *33:08, *33:58 = *33:13, *33:58 = *33:20, *33:22 = *33:22, *33:58 = *33:53, *33:58
+---+---+ +-----	-----	*33:06, *33:58 = *33:51, *33:58
+---+---+ +-----	-----	*33:08, *33:33 = *33:22, *33:33
++-+---+ +-----	-----	*33:04, *33:17 = *33:04, *33:21
++-+---+ +-----	-----	*33:04, *33:13 = *33:04, *33:53
++-+---+ +-----	-----	*33:04, *33:09 = *33:04, *33:14
++-+---+ +-----	-----	*33:04, *33:06 = *33:04, *33:51
++++-----	-----+	*33:01:01, *33:54 = *33:03:01, *33:34 = *33:34, *33:40 = *33:34, *33:54 = *33:40, *33:54
++++-----	-----+	*33:01:01, *33:52 = *33:03:01, *33:32:01 = *33:32:01, *33:40 = *33:32:01, *33:52 = *33:40, *33:52
++++-----	-----+	*33:01:01, *33:31 = *33:31, *33:40
++++-----	-----+	*33:01:01, *33:30 = *33:30, *33:40
++++-----	-----+	*33:01:01, *33:29 = *33:29, *33:40
++++-----	-----+	*33:01:01, *33:28 = *33:28, *33:40
++++-----	-----+	*33:03:01, *33:27 = *33:27, *33:40
++++-----	-----+	*33:01:01, *33:26 = *33:18:01, *33:40 = *33:26, *33:40



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++++-----	-----+	-----	*33:01:01, *33:17 = *33:01:01, *33:21 = *33:17, *33:40 = *33:21, *33:40
++++-----	-----+	-----	*33:01:01, *33:23 = *33:03:01, *33:16 = *33:16, *33:23 = *33:16, *33:40 = *33:23, *33:40
++++-----	-----+	-----	*33:01:01, *33:15 = *33:15, *33:40 = *33:19, *33:40
++++-----	-----+	-----	*33:01:01, *33:12 = *33:12, *33:40
++++-----	-----+	-----	*33:01:01, *33:11 = *33:11, *33:40
++++-----	-----+	-----	*33:01:01, *33:10 = *33:10, *33:40
++++-----	-----+	-----	*33:01:01, *33:13 = *33:01:01, *33:53 = *33:13, *33:40 = *33:40, *33:53
++++-----	-----+	-----	*33:01:01, *33:09 = *33:01:01, *33:14 = *33:09, *33:40 = *33:14, *33:40
++++-----	-----+	-----	*33:01:01, *33:24 = *33:03:01, *33:07 = *33:07, *33:24 = *33:07, *33:40 = *33:24, *33:40
++++-----	-----+	-----	*33:01:01, *33:06 = *33:01:01, *33:51 = *33:06, *33:40 = *33:40, *33:51
++++-----	-----+	-----	*33:01:01, *33:20 = *33:03:01, *33:05 = *33:05, *33:20 = *33:05, *33:40 = *33:20, *33:40
++++-----	-----+	-----	*33:01:01, *33:33 = *33:04, *33:40 = *33:33, *33:40
++++-----	-----+	-----	*33:08, *33:36 = *33:22, *33:36
++++-----	-----+	-----	*33:08, *33:25 = *33:22, *33:25
++++-----	-----+	-----	*33:04, *33:08 = *33:04, *33:22
++++-----	-----+	-----	*33:32:01, *33:54 = *33:34, *33:52
++++-----	-----+	-----	*33:17, *33:34 = *33:21, *33:34
++++-----	-----+	-----	*33:17, *33:32:01 = *33:21, *33:32:01
++++-----	-----+	-----	*33:17, *33:27 = *33:21, *33:27
++++-----	-----+	-----	*33:16, *33:54 = *33:23, *33:34
++++-----	-----+	-----	*33:16, *33:52 = *33:23, *33:32:01
++++-----	-----+	-----	*33:16, *33:17 = *33:16, *33:21
++++-----	-----+	-----	*33:01:01, *33:36 = *33:36, *33:40
++++-----	-----+	-----	*33:01:01, *33:25 = *33:25, *33:40
++++-----	-----+	-----	*33:13, *33:34 = *33:34, *33:53
++++-----	-----+	-----	*33:13, *33:32:01 = *33:32:01, *33:53
++++-----	-----+	-----	*33:13, *33:27 = *33:27, *33:53
++++-----	-----+	-----	*33:13, *33:16 = *33:16, *33:53
++++-----	-----+	-----	*33:01:01, *33:42 = *33:40, *33:42
++++-----	-----+	-----	*33:09, *33:34 = *33:14, *33:34
++++-----	-----+	-----	*33:09, *33:32:01 = *33:14, *33:32:01
++++-----	-----+	-----	*33:09, *33:27 = *33:14, *33:27
++++-----	-----+	-----	*33:09, *33:16 = *33:14, *33:16
++++-----	-----+	-----	*33:01:01, *33:08 = *33:01:01, *33:22 = *33:08, *33:40 = *33:22, *33:40
++++-----	-----+	-----	*33:07, *33:54 = *33:24, *33:34
++++-----	-----+	-----	*33:07, *33:52 = *33:24, *33:32:01
++++-----	-----+	-----	*33:07, *33:17 = *33:07, *33:21
++++-----	-----+	-----	*33:07, *33:23 = *33:16, *33:24
++++-----	-----+	-----	*33:07, *33:13 = *33:07, *33:53
++++-----	-----+	-----	*33:07, *33:09 = *33:07, *33:14
++++-----	-----+	-----	*33:06, *33:34 = *33:34, *33:51
++++-----	-----+	-----	*33:06, *33:32:01 = *33:32:01, *33:51
++++-----	-----+	-----	*33:06, *33:27 = *33:27, *33:51
++++-----	-----+	-----	*33:06, *33:16 = *33:16, *33:51
++++-----	-----+	-----	*33:06, *33:07 = *33:07, *33:51
++++-----	-----+	-----	*33:05, *33:54 = *33:20, *33:34
++++-----	-----+	-----	*33:05, *33:52 = *33:20, *33:32:01
++++-----	-----+	-----	*33:05, *33:17 = *33:05, *33:21
++++-----	-----+	-----	*33:05, *33:23 = *33:16, *33:20
++++-----	-----+	-----	*33:05, *33:13 = *33:05, *33:53
++++-----	-----+	-----	*33:01:01, *33:58 = *33:05, *33:09 = *33:05, *33:14 = *33:05, *33:58 = *33:40, *33:58
++++-----	-----+	-----	*33:05, *33:24 = *33:07, *33:20
++++-----	-----+	-----	*33:05, *33:06 = *33:05, *33:51
++++-----	-----+	-----	*33:08, *33:34 = *33:22, *33:34
++++-----	-----+	-----	*33:08, *33:32:01 = *33:22, *33:32:01
++++-----	-----+	-----	*33:08, *33:27 = *33:22, *33:27
++++-----	-----+	-----	*33:08, *33:16 = *33:16, *33:22
++++-----	-----+	-----	*33:07, *33:08 = *33:07, *33:22
++++-----	-----+	-----	*33:05, *33:08 = *33:05, *33:22



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*33:01:01 = *33:01:01-33:01:07 and 33:32:02, 33:49-33:50, 33:64 and 33:67

*33:03:01= *33:03:01-33:03:13 and 33:35, 33:37, 33:41, 33:43, 33:45-33:48, 33:55-33:57, 33:59-33:63 and 33:65-33:66

*33:18:01 = *33:18:01-33:18:02

*33:29 = *33:29 and 33:39

*33:31 = *33:31 and 33:44

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SPECIFICITY TABLE

HLA-A*33 SSP subtyping

Specificities and sizes of the PCR products of the 24 primer mixes used for HLA-A*33 SSP subtyping

Primer Mix	Size of spec. PCR product ¹	Size of control band ²	Amplified HLA-A*33 alleles ³	Other amplified HLA-A alleles ⁴
1	205 bp	800 bp	*33:01:01-33:01:07, 33:03:01-33:07, 33:10-33:20, 33:22-33:37, 33:39-33:50, 33:52, 33:54-33:67	*68:29
2	205 bp	800 bp	*33:01:01-33:01:07, 33:04-33:05, 33:07, 33:16, 33:27, 33:32:01-33:32:02, 33:34, 33:40, 33:49-33:50, 33:64, 33:67	*03:104, 66:04
3	155 bp	1070 bp	*33:01:01-33:01:07, 33:05, 33:07, 33:16, 33:27, 33:32:01-33:32:02, 33:34, 33:40, 33:49-33:50, 33:64, 33:67	*02:332, 03:104, 24:220, 66:04
4	210 bp	1070 bp	*33:03:01-33:03:13, 33:06, 33:08-33:15, 33:17, 33:20-33:26, 33:28-33:31, 33:33, 33:35-33:37, 33:39-33:48, 33:51-33:63, 33:65-33:66	*02:41, 02:65, 02:80, 02:117, 02:135, 02:152, 02:289, 02:304, 02:309, 03:103, 11:116, 23:45, 24:62, 25:01:01-25:22, 26:01:01-26:39, 26:41-26:43:02, 26:45-26:84, 29:32, 31:01:02-31:02, 31:05, 31:07-31:68, 31:70-31:71, 32:01:01-32:03, 32:05-32:29, 32:31, 32:33:01-32:40, 32:42-32:47, 32:49-32:57, 34:01:01-34:01:02, 34:05-34:06, 43:01, 66:01-66:03, 66:05-66:19, 74:01-74:17
5⁵	90 bp	800 bp	*33:04, 33:33	*26:68
6^{5,8}	105 bp, 170 bp	1070 bp	*33:05, 33:20, 33:58	*29:12
7^{5,9}	105 bp, 230 bp	1070 bp	*33:06, 33:51	*11:98, 66:15, 68:04
8^{5,7,10}	160 bp, 235 bp	1070 bp	*33:07, 33:24	*02:243, 29:19, 29:48, 31:54

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9^{8,12}	150 bp, 185 bp	800 bp	*33:08-33:09, 33:14, 33:22, 33:58	*01:20, 01:66, 02:24:01- 02:24:02, 02:137, 02:243, 02:309, 03:95, 26:22, 29:12, 29:22, 29:48, 30:47, 66:09
10¹³	135 bp, 215 bp, 285 bp	800 bp	*33:08, 33:13, 33:22, 33:42, 33:53	*02:24:02, 02:243, 11:43, 24:82, 29:22, 29:48, 31:02-31:03, 31:07-31:08
11⁶	165 bp	1070 bp	*33:10, 33:25	*23:03:01, 24:208, 29:03, 29:33, 31:05, 32:13
12^{5,14}	95 bp, 230 bp	1070 bp	*33:11, 33:36, 33:42	*11:43, 31:66, 68:29
13^{5,6,15}	95 bp, 165 bp	1070 bp	*33:12, 33:25	
14^{5,16}	115 bp, 335 bp	1070 bp	*33:15, 33:19	*02:10, 02:17:01-02:17:02, 02:39, 02:108, 02:110, 02:140, 02:148, 02:242, 02:244, 02:268, 02:300, 02:303, 02:398, 03:15, 03:19, 11:139, 24:04, 24:19, 24:28, 24:44, 24:89, 24:109, 24:129, 29:07, 29:49, 31:29, 31:48
15⁷	140 bp	1070 bp	*33:16, 33:23	
16^{5,17}	95 bp, 210 bp, 245 bp	1070 bp	*33:17, 33:21, 33:36	
17^{5,18}	150 bp	1070 bp	*33:18:01-33:18:02, 33:26	*03:42, 03:133, 23:53, 29:01:01:01-29:04, 29:06-29:31, 29:34, 29:36-29:50, 31:03- 31:04, 31:06, 32:30, 32:32
18⁵	100 bp	1070 bp	*33:27	
19⁵	120 bp	1070 bp	*33:28	*03:01:18, 03:22:02, 32:10, C*02:02:15
20^{5,18}	90 bp, 225 bp	1070 bp	*33:29, 33:39	*32:53
21⁵	115 bp	1070 bp	*33:30	*02:342
22^{5,19}	115 bp, 255 bp	1070 bp	*33:31, 33:44	*02:241, 26:24
23	180 bp	1070 bp	*33:32:01, 33:52	*02:332, 24:220, B*51:136
24^{5,20}	95 bp, 205 bp	1070 bp	*33:34, 33:54	*03:01:18, 11:01:28, 24:208, 29:09, 29:33, 31:24, 32:33:01

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*33 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

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pairs or less are not given. For high resolution SSP kits the respective lengths of the HLA-specific PCR product(s) are given for the alleles amplified by these primer mixes.

Nonspecific amplifications, i.e. a ladder or a smear of bands, may sometimes be seen. GC-rich primers have a higher tendency of giving rise to nonspecific amplifications than other primers.

PCR fragments longer than the control bands may sometimes be observed. Such bands should be disregarded and do not influence the interpretation of the SSP typings.

PCR fragments migrating faster than the control bands, but slower than a 400 bp fragment may be seen in some gel read-outs. Such bands can be disregarded and do not influence the interpretation of the SSP typings.

Some primers may give rise to primer oligomer artifacts. Sometimes this phenomenon is an inherent feature of the primer pair(s) of a primer mix. More often it is due to other factors such as too low amount of DNA in the PCR reactions, taking too long time in setting up the PCR reactions, working at elevated room temperature or using thermal cyclers that are not pre-heated.

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*33 subtyping. In addition, wells number 2, 5, 9 and 10 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.

³For several HLA Class I alleles 1st and/or 4th exon(s) and beyond, as well as intron nucleotide sequences, are not available. In these instances it is not known whether some of the primers of the SSP sets are completely matched with the target sequences or not. We assume that unknown sequences in these regions are conserved within allelic groups.

⁴Due to the sharing of sequence motifs between HLA-A alleles non-HLA-A*33 alleles will be amplified by primer mixes 1 to 12, 14, 17 and 19 to 24. In addition, the C*02:02:15 allele will be amplified by primer mix 19 and the B*51:136 allele will be amplified by primer mix 23.

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

⁶Primer mixes 11 and 13 may have tendencies of unspecific amplifications.

⁷Primer mixes 10 and 15 have a tendency to giving rise to primer oligomer formation.

⁸Primer mix 9 and 10 may give rise to a long unspecific amplification product of approximately 640bp. This should be disregarded when interpreting the HLA-A*33 typings.

⁹Primer mix 6: Specific PCR fragment of 105 bp in the A*33:20 allele. Specific PCR fragment of 175 bp in the A*33:05 and *33:58 and the A*29:12 alleles.

¹⁰Primer mix 7: Specific PCR fragment of 105 bp in the A*33:06 allele. Specific PCR fragment of 230 bp in the A*33:51 and the A*11:98, 66:15 and 68:04 alleles.

¹¹Primer mix 8: Specific PCR fragment of 160 bp in the A*33:07 and the A*31:54 alleles. Specific PCR fragment of 235 bp in the A*33:24 and the A*02:243, 29:19 and 29:48 alleles.

¹²Primer mix 9: Specific PCR fragment of 150 bp in the A*33:14, 33:22 and 33:58 and the A*01:20, 01:66, 02:24:01-02:24:02, 02:137, 02:309, 03:95, 26:22, 29:12, 29:22, 30:47 and 66:09 alleles. Specific PCR fragment of 185 bp in the A*33:08 and 33:09 and the A*02:243 and 29:48 alleles.

¹³Primer mix 10: Specific PCR fragment of 135 bp in the A*33:22 and A*02:24:02 and 29:22 alleles. Specific PCR fragment of 215 bp in the A*33:08, 33:42 and 33:53 and the A*02:243 and 24:82, 29:48, 31:02 and 31:07-31:08 alleles. Specific PCR fragment of 285 bp in the A*33:13 and the A*11:43 and 31:03 alleles.

¹⁴Primer mix 12: Specific PCR fragment of 95 bp in the A*33:36 allele. Specific PCR fragment of 230 bp in the A*33:11 and 33:42 and the A*11:43, 31:66 and 68:29 alleles.

¹⁵Primer mix 13: Specific PCR fragment of 95 bp in the A*33:12 allele. Specific PCR fragment of 165 bp in the A*33:25 allele.

¹⁶Primer mix 14: Specific PCR fragment of 115 bp in the A*33:15 and the A*02:140 and 31:48 alleles. Specific PCR fragment of 335 bp in the A*33:19 and the A*02:10, 02:17:01-02:17:02, 02:39, 02:108, 02:110, 02:148, 02:242, 02:244, 02:268, 02:300, 02:303, 02:398, 03:15, 03:19, 11:139, 24:04, 24:19, 24:28, 24:44, 24:89, 24:109, 24:129, 29:07, 29:49 and 31:29 alleles.

¹⁷Primer mix 16: Specific PCR fragment of 95 bp in the A*33:36 allele. Specific PCR fragment of 210 bp in the A*33:21 allele. Specific PCR fragment of 245 bp in the A*33:17 allele.

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¹⁸Primer mix 20: Specific PCR fragment of 90 bp in the A*33:29 allele. Specific PCR fragment of 225 bp in the A*33:39 and the A*32:53 allele.

¹⁹Primer mix 22: Specific PCR fragment of 115 bp in the A*33:31 and the A*02:241 and 26:24 alleles. Specific PCR fragment of 255 bp in the A*33:44 alleles.

²⁰Primer mix 24: Specific PCR fragment of 95 bp in the A*33:34 and the A*03:01:18, 11:01:28, 24:208, 29:09, 29:33, 31:24 and 32:33:01 alleles. Specific PCR fragment of 205 bp in the A*33:54 allele.

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INTERPRETATION TABLE												
HLA-A*33 SSP subtyping												
Amplification patterns of the A*33:01 to A*33:67 alleles												
	Well ¹¹											
	1	2	3	4	5	6	7	8	9	10	11	12
Length of spec.	205	205	155	210	90	105	105	160	150	135	165	95
PCR product(s)						170	230	235	185	215		230
										285		
Length of int.	800	800	1070	1070	800	1070	1070	1070	800	800	1070	1070
pos. control ¹												
5'-primer ²	97	418	468	414	414	97	103	97	97	97	448	97
	5'-TCA ^{3'}	5'-Agg ^{3'}	5'-TCT ^{3'}	5'-Cag ^{3'}	5'-Cag ^{3'}	5'-TCA ^{3'}	5'-CCT ^{3'}	5'-TCA ^{3'}	5'-TCA ^{3'}	5'-TCA ^{3'}	5'-CCT ^{3'}	5'-TCA ^{3'}
						413	228	413	355	355	652	355
						5'-CCA ^{3'}	5'-ATg ^{3'}	5'-CCA ^{3'}	5'-CCg ^{3'}	5'-CCg ^{3'}	5'-CTg ^{3'}	5'-CCA ^{3'}
3'-primer(s) ³	259	583	583	583	463	221	290	292	218	270	570	277
	5'-gTT ^{3'}	5'-gTg ^{3'}	5'-gTg ^{3'}	5'-gTA ^{3'}	5'-gCT ^{3'}	5'-ACA ^{3'}	5'-CAA ^{3'}	5'-gTg ^{3'}	5'-gCC ^{3'}	5'-ACT ^{3'}	5'-CCg ^{3'}	5'-ggA ^{3'}
						233		530	221	277	778	290
						5'-CCC ^{3'}		5'-CCT ^{3'}	5'-ACA ^{3'}	5'-ggA ^{3'}	5'-TgT ^{3'}	5'-Cag ^{3'}
						475			240	341		407
						5'-Cgg ^{3'}			5'-ggA ^{3'}	5'-CgT ^{3'}		5'-ACT ^{3'}
									453	448		
									5'-Tcg ^{3'}	5'-CAA ^{3'}		
Well No.	1	2	3	4	5	6	7	8	9	10	11	12
HLA-A allele ^{4,5}												
*33:01:01-33:01:07, 33:32:02, 33:49-33:50, 33:64, 33:67	1	2	3									
*33:03:01-33:03:13, 33:35, 33:37, 33:41, 33:43, 33:45-33:48, 33:55-33:57, 33:59-33:63, 33:65- 33:66	1			4								
*33:04	1	2			5							
*33:05	1	2	3			6						
Well No.	1	2	3	4	5	6	7	8	9	10	11	12

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INTERPRETATION TABLE												
HLA-A*33 SSP subtyping												
Amplification patterns of the A*33:01 to A*33:67 alleles												
Well ¹¹												
13	14	15	16	17	18	19	20	21	22	23	24	
95	115	140	95	150	100	120	90	115	115	180	95	Length of spec.
165	335		210				225		255		205	PCR product(s)
			245									
1070	1070	1070	1070	1070	1070	1070	1070	1070	1070	1070	1070	Length of int.
												pos. control ¹
395	317	158	97	161	390	448	397	463	652	112	448	5'-primer ²
5'-gCC ^{3'}	5'-gCg ^{3'}	5'-ggg ^{3'}	5'-TCA ^{3'}	5'-CgC ^{3'}	5'-gAg ^{3'}	5'-CCT ^{3'}	5'-gCg ^{3'}	5'-TgT ^{3'}	5'-CTg ^{3'}	5'-CCT ^{3'}	5'-CCT ^{3'}	
652	652	482	355	413			649			453		
5'-CTg ^{3'}	5'-CTg ^{3'}	5'-ggC ^{3'}	5'-CCA ^{3'}	5'-CCg ^{3'}			5'-ACA ^{3'}			5'-AAA ^{3'}		
448	368	259	265	259	448	527	448	538	728	259	502	3'-primer(s) ³
5'-CAA ^{3'}	5'-CAA ^{3'}	5'-gTT ^{3'}	5'-CCC ^{3'}	5'-gTT ^{3'}	5'-CAA ^{3'}	5'-CCT ^{3'}	5'-CAA ^{3'}	5'-CAA ^{3'}	5'-CCT ^{3'}	5'-gTT ^{3'}	5'-CTT ^{3'}	
778	727	583	299	524			831		866	583	614	
5'-TgT ^{3'}	5'-CCA ^{3'}	5'-gTg ^{3'}	5'-CCg ^{3'}	5'-CAC ^{3'}			5'-TCC ^{3'}		5'-gAT ^{3'}	5'-gTg ^{3'}	5'-TgA ^{3'}	
			407									
			5'-ACT ^{3'}									
13	14	15	16	17	18	19	20	21	22	23	24	Well No.
												HLA-A allele ^{4,5}
												*33:01:01-33:01:07, 33:32:02, 33:49-33:50, 33:64, 33:67
												*33:03:01-33:03:13, 33:35, 33:37, 33:41, 33:43, 33:45-33:48, 33:55-33:57, 33:59-33:63, 33:65- 33:66
												*33:04
												*33:05
13	14	15	16	17	18	19	20	21	22	23	24	Well No.

101.432-12 – including *Taq* polymerase, IFU-01
 101.432-12u – without *Taq* polymerase, IFU-02

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Lot No.: **19S**

Lot-specific information

Length of spec.	205	205	155	210	90	105	105	160	150	135	165	95
PCR product(s)						170	230	235	185	215		230
									285			
Well No.	1	2	3	4	5	6	7	8	9	10	11	12
*33:06	1			4			7					
*33:07	1	2	3					8				
*33:08				4					9	10		
*33:09, 02:309, 26:22, 66:09 ⁶				4					9			
*33:10	1			4							11	
*33:11	1			4								12
*33:12	1			4								
*33:13	1			4						10		
*33:14	1			4					9			
*33:15	1			4								
*33:16	1	2	3									
*33:17	1			4								
*33:18:01-33:18:02	1											
*33:19	1											
*33:20	1			4		6						
*33:21				4								
*33:22	1			4					9	10		
*33:23	1			4								
*33:24	1			4				8				
*33:25	1			4							11	
*33:26	1			4								
*33:27	1	2	3									
*33:28	1			4								
*33:29, 33:39 ⁷	1			4								
*33:30	1			4								
*33:31, 33:44 ⁸	1			4								
*33:32:01	1	2	3									
*33:33	1			4	5							
*33:34	1	2	3									
*33:36	1			4								12
*33:40	1	2	3	4								
*33:42	1			4						10		12
*33:51, 66:15 ⁹				4			7					
*33:52	1			4								
*33:53, 31:02, 31:07-31:08 ¹⁰				4						10		
*33:54	1			4								
*33:58	1			4		6			9			
*01:20, 01:66, 02:24:01, 02:137, 03:95, 30:47									9			
Well No.	1	2	3	4	5	6	7	8	9	10	11	12

101.432-12 – including *Taq* polymerase, IFU-01
 101.432-12u – without *Taq* polymerase, IFU-02

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Lot No.: **19S**

Lot-specific information

95	115	140	95	150	100	120	90	115	115	180	95	Length of spec. PCR product(s)
165	335		210				225		255		205	
			245									
13	14	15	16	17	18	19	20	21	22	23	24	Well No.
												*33:06
												*33:07
												*33:08
												*33:09, 02:309, 26:22, 66:09 ⁶
												*33:10
												*33:11
13												*33:12
												*33:13
												*33:14
	14											*33:15
		15										*33:16
			16									*33:17
				17								*33:18:01-33:18:02
	14											*33:19
												*33:20
			16									*33:21
												*33:22
		15										*33:23
												*33:24
13												*33:25
				17								*33:26
					18							*33:27
						19						*33:28
							20					*33:29, 33:39 ⁷
								21				*33:30
									22			*33:31, 33:44 ⁸
										23		*33:32:01
												*33:33
											24	*33:34
			16									*33:36
												*33:40
												*33:42
												*33:51, 66:15 ⁹
										23		*33:52
												*33:53, 31:02, 31:07-31:08 ¹⁰
											24	*33:54
												*33:58
												*01:20, 01:66, 02:24:01, 02:137, 03:95, 30:47
13	14	15	16	17	18	19	20	21	22	23	24	Well No.

101.432-12 – including *Taq* polymerase, IFU-01
 101.432-12u – without *Taq* polymerase, IFU-02

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Lot No.: **19S**

Lot-specific information

Length of spec.	205	205	155	210	90	105	105	160	150	135	165	95
PCR product(s)						170	230	235	185	215		230
									285			
Well No.	1	2	3	4	5	6	7	8	9	10	11	12
*02:10, 02:17:01-02:17:02, 02:39, 02:108, 02:110, 02:140, 02:148, 02:242, 02:244, 02:268, 02:300, 02:303, 02:398, 03:15, 03:19, 11:139, 24:04, 24:19, 24:28, 24:44, 24:89, 24:109, 24:129												
*02:24:02									9	10		
*02:41, 02:65, 02:80, 02:117, 02:135, 02:152, 02:289, 02:304, 03:103, 11:116, 23:45, 24:62, 25:01:01-25:22, 26:01:01-26:21, 26:23, 26:25N-26:39, 26:41- 26:43:02, 26:45-26:67, 26:69- 26:84, 29:32, 31:01:02-31:01:17, 31:09-31:23, 31:25-31:28, 31:30- 31:47, 31:49-31:53, 31:55-31:65, 31:67-31:68, 31:70-31:71, 32:01:01-32:03, 32:05-32:09, 32:11Q-32:12, 32:14-32:29, 32:31, 32:33:02-32:40, 32:42- 32:47, 32:49-32:52, 32:54-32:57, 34:01:01-34:01:02, 34:05-34:06, 43:01, 66:01-66:03, 66:05-66:08, 66:10-66:14, 66:16-66:19, 74:01- 74:17				4								
*02:241												
*02:243								8	9	10		
*02:332, 24:220			3									
*02:342												
*03:01:18												
*03:22:02, C*02:02:15												
*03:42, 03:133, 23:53, 29:01:01:01-29:02:13, 29:04, 29:06, 29:08N, 29:10-29:11, 29:13-29:18, 29:20-29:21, 29:23- 29:31, 29:34, 29:36-29:47, 29:50, 31:04, 31:06, 32:30, 32:32												
*03:104, 66:04		2	3									
Well No.	1	2	3	4	5	6	7	8	9	10	11	12

101.432-12 – including *Taq* polymerase, IFU-01
 101.432-12u – without *Taq* polymerase, IFU-02

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 “Instructions for Use” (IFU)

Lot No.: **19S**

Lot-specific information

95	115	140	95	150	100	120	90	115	115	180	95	Length of spec.
165	335		210				225		255		205	PCR product(s)
			245									
13	14	15	16	17	18	19	20	21	22	23	24	Well No.
	14											*02:10, 02:17:01-02:17:02, 02:39, 02:108, 02:110, 02:140, 02:148, 02:242, 02:244, 02:268, 02:300, 02:303, 02:398, 03:15, 03:19, 11:139, 24:04, 24:19, 24:28, 24:44, 24:89, 24:109, 24:129
												*02:24:02
												*02:41, 02:65, 02:80, 02:117, 02:135, 02:152, 02:289, 02:304, 03:103, 11:116, 23:45, 24:62, 25:01:01-25:22, 26:01:01-26:21, 26:23, 26:25N-26:39, 26:41-26:43:02, 26:45-26:67, 26:69-26:84, 29:32, 31:01:02-31:01:17, 31:09-31:23, 31:25-31:28, 31:30-31:47, 31:49-31:53, 31:55-31:65, 31:67-31:68, 31:70-31:71, 32:01:01-32:03, 32:05-32:09, 32:11Q-32:12, 32:14-32:29, 32:31, 32:33:02-32:40, 32:42-32:47, 32:49-32:52, 32:54-32:57, 34:01:01-34:01:02, 34:05-34:06, 43:01, 66:01-66:03, 66:05-66:08, 66:10-66:14, 66:16-66:19, 74:01-74:17
								22				*02:241
												*02:243
										23		*02:332, 24:220
								21				*02:342
						19					24	*03:01:18
						19						*03:22:02, C*02:02:15
				17								*03:42, 03:133, 23:53, 29:01:01:01-29:02:13, 29:04, 29:06, 29:08N, 29:10-29:11, 29:13-29:18, 29:20-29:21, 29:23-29:31, 29:34, 29:36-29:47, 29:50, 31:04, 31:06, 32:30, 32:32
												*03:104, 66:04
13	14	15	16	17	18	19	20	21	22	23	24	Well No.

101.432-12 – including *Taq* polymerase, IFU-01
 101.432-12u – without *Taq* polymerase, IFU-02

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

Lot No.: **19S**

Lot-specific information

Length of spec. PCR product(s)	205	205	155	210	90	105	105	160	150	135	165	95
						170	230	235	185	215		230
										285		
Well No.	1	2	3	4	5	6	7	8	9	10	11	12
*11:01:28												
*11:43										10		12
*11:98, 68:04							7					
*23:03:01											11	
*24:82										10		
*24:208, 29:33											11	
*26:24				4								
*26:68				4	5							
*29:03											11	
*29:07, 29:49												
*29:09												
*29:12						6			9			
*29:19								8				
*29:22									9	10		
*29:48								8	9	10		
*31:03										10		
*31:05, 32:13				4							11	
*31:24, 32:33:01				4								
*31:29, 31:48				4								
*31:54				4				8				
*31:66				4								12
*32:10				4								
*32:53				4								
*68:29	1											12
<i>B*51:136</i>												
HLA-A allele^{4,5}												
Well No.	1	2	3	4	5	6	7	8	9	10	11	12

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*33 subtyping.

In addition, wells number 2, 5, 9 and 10 contain the primer pair giving rise to the shorter, 800 bp, internal positive control band in order to allow kit identification.

²The nucleotide position, in the 2nd, 3rd or 4th exon, matching the specificity-determining 3'-end of the primer is given. Nucleotide numbering as on the www.ebi.ac.uk/imgt/hla web site. The sequence of the 3 terminal nucleotides of the primer is given.

³The nucleotide position, in the 2nd, 3rd 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.

101.432-12 – including *Taq* polymerase, IFU-01
 101.432-12u – without *Taq* polymerase, IFU-02

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

Lot No.: **19S**

Lot-specific information

95	115	140	95	150	100	120	90	115	115	180	95	Length of spec. PCR product(s)
165	335		210				225		255		205	
			245									
13	14	15	16	17	18	19	20	21	22	23	24	Well No.
											24	*11:01:28
												*11:43
												*11:98, 68:04
												*23:03:01
												*24:82
											24	*24:208, 29:33
									22			*26:24
												*26:68
				17								*29:03
	14			17								*29:07, 29:49
				17							24	*29:09
				17								*29:12
				17								*29:19
				17								*29:22
				17								*29:48
				17								*31:03
												*31:05, 32:13
											24	*31:24, 32:33:01
	14											*31:29, 31:48
												*31:54
												*31:66
							19					*32:10
							20					*32:53
												*68:29
										23		<i>B*51:136</i>
												HLA-A allele^{4,5}
13	14	15	16	17	18	19	20	21	22	23	24	Well No.

⁴The sequence of the A*3302 allele has been shown to be identical to A*33:03:01.

The Sequence of the A*33:38 allele has been shown to be identical to A*33:44.

⁵HLA-A*33 alleles in bold lettering are listed as confirmed alleles on the on the IMGT/HLA web page www.ebi.ac.uk/imgt/hla, release 3.11.0, January 2013.

⁶The A*33:09 and the A*02:309, 26:22 and 66:09 give rise to identical amplification patterns with the HLA-A*33 subtyping kit. These alleles can be distinguished by e.g. the HLA-A low resolution kit and/or the HLA-A*02, HLA-A*26 and HLA-A*66 subtyping kits.

⁷The A*33:29 and 33:39 alleles may be distinguished by the different sizes of the specific PCR products generated by primer mix 20.

⁸The A*33:31 and 33:44 alleles may be distinguished by the different sizes of the specific PCR products generated by primer mix 22.

⁹The A*33:51 and A*66:15 alleles give rise to identical amplification patterns with the HLA-A*33 subtyping kit. These alleles can be distinguished by e.g. the HLA-A low resolution kit and/or the HLA-A*66 subtyping kit.

101.432-12 – including *Taq* polymerase, IFU-01
101.432-12u – without *Taq* polymerase, IFU-02

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Lot No.: 19S**Lot-specific information**

¹⁰The A*33:53 and A*31:02, 31:07 and 31:08 alleles give rise to identical amplification patterns with the HLA-A*33 subtyping kit. These alleles can be distinguished by e.g. the HLA-A low resolution kit and/or the HLA-A*31 subtyping kit.

¹¹Primer mix 6: Specific PCR fragment of 105 bp in the A*33:20 allele. Specific PCR fragment of 175 bp in the A*33:05 and *33:58 and the A*29:12 alleles.

Primer mix 7: Specific PCR fragment of 105 bp in the A*33:06 allele. Specific PCR fragment of 230 bp in the A*33:51 and the A*11:98, 66:15 and 68:04 alleles.

Primer mix 8: Specific PCR fragment of 160 bp in the A*33:07 and the A*31:54 alleles. Specific PCR fragment of 235 bp in the A*33:24 and the A*02:243, 29:19 and 29:48 alleles.

Primer mix 9: Specific PCR fragment of 150 bp in the A*33:14, 33:22 and 33:58 and the A*01:20, 01:66, 02:24:01-02:24:02, 02:137, 02:309, 03:95, 26:22, 29:12, 29:22, 30:47 and 66:09 alleles. Specific PCR fragment of 185 bp in the A*33:08 and 33:09 and the A*02:243 and 29:48 alleles.

Primer mix 10: Specific PCR fragment of 135 bp in the A*33:22 and A*02:24:02 and 29:22 alleles. Specific PCR fragment of 215 bp in the A*33:08, 33:42 and 33:53 and the A*02:243 and 24:82, 29:48, 31:02 and 31:07-31:08 alleles. Specific PCR fragment of 285 bp in the A*33:13 and the A*11:43 and 31:03 alleles.

Primer mix 12: Specific PCR fragment of 95 bp in the A*33:36 allele. Specific PCR fragment of 230 bp in the A*33:11 and 33:42 and the A*11:43, 31:66 and 68:29 alleles.

Primer mix 13: Specific PCR fragment of 95 bp in the A*33:12 allele. Specific PCR fragment of 165 bp in the A*33:25 allele.

Primer mix 14: Specific PCR fragment of 115 bp in the A*33:15 and the A*02:140 and 31:48 alleles. Specific PCR fragment of 335 bp in the A*33:19 and the A*02:10, 02:17:01-02:17:02, 02:39, 02:108, 02:110, 02:148, 02:242, 02:244, 02:268, 02:300, 02:303, 02:398, 03:15, 03:19, 11:139, 24:04, 24:19, 24:28, 24:44, 24:89, 24:109, 24:129, 29:07, 29:49 and 31:29 alleles.

Primer mix 16: Specific PCR fragment of 95 bp in the A*33:36 allele. Specific PCR fragment of 210 bp in the A*33:21 allele. Specific PCR fragment of 245 bp in the A*33:17 allele.

Primer mix 20: Specific PCR fragment of 90 bp in the A*33:29 allele. Specific PCR fragment of 225 bp in the A*33:39 and the A*32:53 allele.

Primer mix 22: Specific PCR fragment of 115 bp in the A*33:31 and the A*02:241 and 26:24 alleles. Specific PCR fragment of 255 bp in the A*33:44 alleles.

Primer mix 24: Specific PCR fragment of 95 bp in the A*33:34 and the A*03:01:18, 11:01:28, 24:208, 29:09, 29:33, 31:24 and 32:33:01 alleles. Specific PCR fragment of 205 bp in the A*33:54 allele.

101.432-12 – including *Taq* polymerase, IFU-01
 101.432-12u – without *Taq* polymerase, IFU-02

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Lot No.: **19S**

Lot-specific information

CELL LINE VALIDATION SHEET																				
HLA-A*33 SSP subtyping kit																				
				Well																
				1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	
				Lot No.:	201298301	201298302	201298303	200964004	201298305	201317006	201298307	201317008	201317009	201317010	201298311	201317012	200964013	201298314	200964015	201298316
	IHWC cell line	A*	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	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

101.432-12 – including *Taq* polymerase, IFU-01
 101.432-12u – without *Taq* polymerase, IFU-02

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Lot No.: **19S**

Lot-specific information

CELL LINE VALIDATION SHEET											
HLA-A*33 SSP subtyping kit											
				Well							
				17	18	19	20	21	22	23	24
				201317017	201080418	201298319	201298320	201298321	201317022	201317023	201298324
	IHWC cell line	A*	A*	Lot 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 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	-	-	-	-	-	-	-	-
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42	9066 TAB089	*02:07		-	-	-	-	-	-	-	-
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46	9013 SCHU	*03:01		-	-	-	-	-	-	-	-
47	9045 TUBO	*02:16	*03:01	-	-	-	-	-	-	-	-
48	9303 TER-ND	*02:01	*11:01	-	-	-	-	-	-	-	-

101.432-12 – including *Taq* polymerase, IFU-01
 101.432-12u – without *Taq* polymerase, IFU-02

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Lot No.: **19S**

Lot-specific information

CERTIFICATE OF ANALYSIS

Olerup SSP® HLA-A*33 SSP

Product number: 101.432-12 – including *Taq* polymerase
 101.432-12u – without *Taq* polymerase

Lot number: 19S

Expiry date: 2015-November-01

Number of tests: 12

Number of wells per test: 24

Well specifications:

Well No.	Production No.	Well No.	Production No.	Well No.	Production No.
1	2012-983-01	9	2013-170-09	17	2013-170-17
2	2012-983-02	10	2013-170-10	18	2010-804-18
3	2012-983-03	11	2012-983-11	19	2012-983-19
4	2009-640-04	12	2013-170-12	20	2012-983-20
5	2012-983-05	13	2009-640-13	21	2012-983-21
6	2013-170-06	14	2012-983-14	22	2013-170-22
7	2012-983-07	15	2009-640-15	23	2013-170-23
8	2013-170-08	16	2012-983-16	24	2012-983-24

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 13, 15, 16 and 18 to 21, 23 and 24 were available. The specificities of the primers in primer solutions 5, 7 to 13, 19, 23 and 24 were tested by separately adding additional 5'-primers respectively 3'-primers. In primer solution 16 it was only possible to test the 5'-primer, the 3'-primer were not possible to test. In primer solution 15, 18, 20 and 21 it was only possible to test the 3'-primers, the 5'-primers were not possible to test. In primer solutions 7, 13, 17 and 23 one 5'-primer was not possible to test, and in primer solutions 6, 8 to 14, 22 and 24 one 3'-primer was not possible to test. Additional primers in primer solutions 6, 14, 17 and 22 were tested by separately adding one additional 5'-primer and/or one additional 3'-primer.

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

Date of approval: 2013-June-03

Approved by:

Production Quality Control

101.432-12 – including *Taq* polymerase, IFU-01
101.432-12u – without *Taq* polymerase, IFU-02

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Lot No.: **19S**

Lot-specific information

Declaration of Conformity

Product name: *Olerup* SSP® HLA-A*33
Product number: 101.432-12/12u
Lot number: 19S

Intended use: HLA-A*33 high resolution histocompatibility testing

Manufacturer: *Olerup* SSP AB
Franzengatan 5
SE-112 51 Stockholm, Sweden
Phone: +46-8-717 88 27
Fax: +46-8-717 88 18

We, *Olerup* SSP AB, hereby declare that this product, to which this Declaration of Conformity relates is in conformity with the following Standard(s) and other normative document(s) ISO 9001:2008 and ISO 13485:2012, following the provisions of the 98/79/EC Directive on *in vitro* diagnostic medical devices, Annex II List B, conformity assessed using Annex IV, as transposed into the national laws of the Member States of the European Union.

The Technical Documentation File is maintained at *Olerup* SSP AB, Franzengatan 5, SE-112 51 Stockholm, Sweden.

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

Stockholm, Sweden
2013-June-03

Ann-Cathrin Jareman
Head of QA and Regulatory Affairs

101.432-12 – including *Taq* polymerase, IFU-01
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Lot No.: **19S**

Lot-specific information

101.432-12 – including *Taq* polymerase, IFU-01
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Lot No.: **19S**

Lot-specific information

ADDRESSES:

Manufacturer:

Olerup SSP AB, Franzengatan 5, SE-112 51 Stockholm, Sweden.

Tel: +46-8-717 88 27

Fax: +46-8-717 88 18

E-mail: info-ssp@olerup.com

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

Distributed by:

Olerup GmbH, Löwengasse 47 / 6, AT-1030 Vienna, Austria.

Tel: +43-1-710 15 00

Fax: +43-1-710 15 00 10

E-mail: support-at@olerup.com

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

Olerup Inc., 901 S. Bolmar St., Suite R, West Chester, PA 19382

Tel: 1-877-OLERUP1

Fax: 610-344-7989

E-mail: info.us@olerup.com

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

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