

101.431-12 – including *Taq* polymerase, IFU-01
101.431-12u – without *Taq* polymerase, IFU-02

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“Instructions for Use” (IFU)

Lot No.: **84S**

Lot-specific information
Olerup SSP[®] HLA-A*32

Product number:	101.431-12 – including <i>Taq</i> polymerase 101.431-12u – without <i>Taq</i> polymerase
Lot number:	84S
Expiry date:	2016-April-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. 84S.

**CHANGES COMPARED TO THE PREVIOUS OLERUP SSP[®]
HLA-A*32 LOT (48N)**

The HLA-A*32 kit is updated for new alleles to enable separation of:

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

One well has been added to the HLA-A*32 kit, well **24**.

The Lot-specific information for HLA-A*32 including and without *Taq* polymerase is now described in one common Product Insert.

¹As described in section Uniquely Identified Alleles.

The HLA-A*32 specificity and interpretation tables have been updated for the HLA-A alleles described since the previous *Olerup SSP[®]* HLA-A*32 lot was made (**Lot No. 48N**).

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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
1	Added	-	5'-primer added for the A*32:01:15 allele.
13	-	Exchanged	Exchanged 3'-primer for the A*32:11Q allele.
17	-	Added	3'-primer added for the A*32:44 allele.
19	Added	Added	Primer pair added for the A*32:45N allele.
20	Added	Added	Primer pair added for the A*32:54 allele.
22	-	Added	3'-primer added for the A*32:56N allele.
23	Added	Added	Primer pair added for the A*32:53 allele.
24	New	New	New primer pairs for the A*32:48N and A*32:56N alleles.

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PRODUCT DESCRIPTION

HLA-A*32 SSP subtyping

CONTENT

The primer set contains 5'- and 3'-primers for identifying the A*32:01 to A*32:58 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*32' in silver/gray ink.

Well No. 1 is marked with the Lot No. '84S'.

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*32 SSP subtypings will be influenced by most A*01, several A*02, most A*03, two A*11, most A*23, several A*24, two A*25, three A*26, eight A*29, most A*30, thirteen A*31, six A*33, four A*34, the A*36, the A*66:08, two A*68 and most A*74 alleles when present on the other haplotype. In addition, primer mix 12 will amplify the C*02:02:15 allele.

UNIQUELY IDENTIFIED ALLELES

All the HLA-A*32 alleles, i.e. **A*32:01 to A*32:58 alleles**, recognized by the HLA Nomenclature Committee in July 2013¹ will be amplified by the primers in the HLA-A*32 subtyping kit.

The HLA-A*32 kit enables separation of the confirmed HLA-A*32 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*32 alleles is listed below.

The HLA-A*32 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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The HLA-A*32 subtyping kit cannot distinguish the following silent mutations: the A*32:01:01-32:01:05 and 32:01:07-32:01:15 alleles.

The A*32:21 and A*32:44 alleles can be distinguished by the different sizes of the specific PCR products generated by primer mix 17.

The A*32:23 and A*32:54 alleles can be distinguished by the different sizes of the specific PCR products generated by primer mix 20.

The A*32:28 and A*32:53 alleles can be distinguished by the different sizes of the specific PCR products generated by primer mix 23.

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

ALLELE CONFIRMATION STATUS

Allele	Status ¹	Allele	Status ¹	Allele	Status ¹	Allele	Status ¹
A*32:01:01	Confirmed	A*32:07	Confirmed	A*32:27N	Confirmed	A*32:46	Unconfirmed
A*32:01:02	Unconfirmed	A*32:08	Confirmed	A*32:28	Confirmed	A*32:47	Unconfirmed
A*32:01:03	Confirmed	A*32:09	Unconfirmed	A*32:29	Unconfirmed	A*32:48N	Unconfirmed
A*32:01:04	Confirmed	A*32:10	Unconfirmed	A*32:30	Unconfirmed	A*32:49	Unconfirmed
A*32:01:05	Unconfirmed	A*32:11Q	Unconfirmed	A*32:31	Unconfirmed	A*32:50	Unconfirmed
A*32:01:06	Unconfirmed	A*32:12	Unconfirmed	A*32:32	Unconfirmed	A*32:51	Unconfirmed
A*32:01:07	Unconfirmed	A*32:13	Unconfirmed	A*32:33:01	Unconfirmed	A*32:52	Unconfirmed
A*32:01:08	Confirmed	A*32:14	Unconfirmed	A*32:33:02	Unconfirmed	A*32:53	Unconfirmed
A*32:01:09	Confirmed	A*32:15	Unconfirmed	A*32:34	Unconfirmed	A*32:54	Confirmed
A*32:01:10	Unconfirmed	A*32:16	Confirmed	A*32:35	Unconfirmed	A*32:55:01	Unconfirmed
A*32:01:11	Unconfirmed	A*32:17	Confirmed	A*32:36	Unconfirmed	A*32:55:02	Unconfirmed
A*32:01:12	Unconfirmed	A*32:18	Confirmed	A*32:37	Unconfirmed	A*32:56N	Unconfirmed
A*32:01:13	Unconfirmed	A*32:19N	Confirmed	A*32:38	Unconfirmed	A*32:57	Unconfirmed
A*32:01:14	Confirmed	A*32:20	Confirmed	A*32:39	Unconfirmed	A*32:58	Unconfirmed
A*32:01:15	Unconfirmed	A*32:21	Unconfirmed	A*32:40	Unconfirmed		
A*32:02	Unconfirmed	A*32:22	Unconfirmed	A*32:41	Unconfirmed		
A*32:03	Confirmed	A*32:23	Unconfirmed	A*32:42	Unconfirmed		
A*32:04	Confirmed	A*32:24	Confirmed	A*32:43	Unconfirmed		
A*32:05	Unconfirmed	A*32:25	Confirmed	A*32:44	Confirmed		
A*32:06	Confirmed	A*32:26	Confirmed	A*32:45N	Confirmed		

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

RESOLUTION IN HOMO- AND HETEROZYGOTES

A total of 74 alleles generate 34 amplification patterns that can be combined in 595 homozygous and heterozygous combinations. 388 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.

--+----- +----- ---+----- *32:25, *32:25 = *32:25, *32:39
 -+----- +---+---- - - - - - - - *32:15, *32:15 = *32:15, *32:39
 -+-----+ +----- - - - - - - - *32:07, *32:07 = *32:07, *32:39
 +------ +---+---- - - - - - - - *32:01:06, *32:10 = *32:10, *32:10
 ++----- +----- - - - - - - - *32:01:06, *32:22 = *32:22, *32:22
 ++----- +----- - - - - - - - *32:01:01, *32:01:01 = *32:01:01, *32:01:06 = *32:01:01, *32:39 =

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*32:01:06, *32:39
+-+----- +----- ----- *32:01:06, *32:02 = *32:02, *32:02 = *32:02, *32:22
++----- +----- -----+ *32:01:01, *32:48N = *32:01:06, *32:48N = *32:39, *32:48N = *32:48N,
*32:48N
++----- +----- -----+ *32:01:01, *32:28 = *32:01:06, *32:28 = *32:28, *32:28 = *32:28, *32:39
++----- +----- -----+ *32:01:01, *32:27N = *32:01:06, *32:27N = *32:27N, *32:27N =
*32:27N, *32:39
++----- +----- -----+ *32:01:01, *32:26 = *32:01:06, *32:26 = *32:26, *32:26 = *32:26, *32:39
++----- +----- -----+ *32:01:01, *32:23 = *32:01:06, *32:23 = *32:23, *32:23 = *32:23, *32:39
++----- +----- -----+ *32:01:01, *32:25 = *32:01:01, *32:45N = *32:01:06, *32:25 =
*32:01:06, *32:45N = *32:25, *32:45N = *32:39, *32:45N = *32:45N,
*32:45N
++----- +----- -----+ *32:01:01, *32:24 = *32:01:06, *32:24 = *32:24, *32:24 = *32:24, *32:39
++----- +----- -----+ *32:01:01, *32:21 = *32:01:06, *32:21 = *32:21, *32:21 = *32:21, *32:39
++----- +----- -----+ *32:01:01, *32:14 = *32:01:06, *32:14 = *32:14, *32:14 = *32:14, *32:39
++----- +----- -----+ *32:01:01, *32:13 = *32:01:06, *32:13 = *32:13, *32:13 = *32:13, *32:39
++----- +----- -----+ *32:01:01, *32:12 = *32:01:06, *32:12 = *32:12, *32:12 = *32:12, *32:39
++----- +----- -----+ *32:01:01, *32:11Q = *32:01:01, *32:15 = *32:01:06, *32:11Q =
*32:01:06, *32:15 = *32:11Q, *32:11Q = *32:11Q, *32:15 = *32:11Q,
*32:39
++----- +----- -----+ *32:01:01, *32:10 = *32:01:01, *32:16 = *32:01:06, *32:16 = *32:10,
*32:16 = *32:10, *32:39 = *32:16, *32:16 = *32:16, *32:39
++----- +----- -----+ *32:01:01, *32:09 = *32:01:06, *32:09 = *32:09, *32:09 = *32:09, *32:39
++----- +----- -----+ *32:01:01, *32:08 = *32:01:06, *32:08 = *32:08, *32:08 = *32:08, *32:39
++-----+ +----- -----+ *32:01:01, *32:07 = *32:01:01, *32:19N = *32:01:06, *32:07 =
*32:01:06, *32:19N = *32:07, *32:19N = *32:19N, *32:19N = *32:19N,
*32:39
++-----+ +----- -----+ *32:01:01, *32:05 = *32:01:06, *32:05 = *32:05, *32:05 = *32:05, *32:39
++-----+ +----- -----+ *32:01:01, *32:04 = *32:01:01, *32:52 = *32:01:06, *32:04 = *32:01:06,
*32:52 = *32:04, *32:39 = *32:04, *32:52 = *32:39, *32:52 = *32:52,
*32:52
++-----+ +----- -----+ *32:01:01, *32:03 = *32:01:06, *32:03 = *32:03, *32:03 = *32:03, *32:39
++-----+ +----- -----+ *32:01:01, *32:06 = *32:01:06, *32:06 = *32:06, *32:06 = *32:06, *32:39
+++----- +----- -----+ *32:01:01, *32:22 = *32:22, *32:39
++-----+ +----- -----+ *32:01:01, *32:56N = *32:01:06, *32:56N = *32:27N, *32:48N =
*32:27N, *32:56N = *32:39, *32:56N = *32:48N, *32:56N = *32:56N,
*32:56N
++-----+ +----- -----+ *32:25, *32:48N = *32:45N, *32:48N
++-----+ +----- -----+ *32:25, *32:28 = *32:28, *32:45N
++-----+ +----- -----+ *32:25, *32:27N = *32:27N, *32:45N
++-----+ +----- -----+ *32:25, *32:26 = *32:26, *32:45N
++-----+ +----- -----+ *32:23, *32:25 = *32:23, *32:45N
++-----+ +----- -----+ *32:24, *32:25 = *32:24, *32:45N
++-----+ +----- -----+ *32:21, *32:25 = *32:21, *32:45N
++-----+ +----- -----+ *32:14, *32:25 = *32:14, *32:45N
++-----+ +----- -----+ *32:13, *32:25 = *32:13, *32:45N
++-----+ +----- -----+ *32:12, *32:25 = *32:12, *32:45N
++-----+ +----- -----+ *32:01:01, *32:18 = *32:01:06, *32:18 = *32:12, *32:13 = *32:12, *32:18
= *32:13, *32:18 = *32:18, *32:18 = *32:18, *32:39
++-----+ +----- -----+ *32:11Q, *32:48N = *32:15, *32:48N
++-----+ +----- -----+ *32:11Q, *32:28 = *32:15, *32:28
++-----+ +----- -----+ *32:11Q, *32:27N = *32:15, *32:27N
++-----+ +----- -----+ *32:11Q, *32:26 = *32:15, *32:26
++-----+ +----- -----+ *32:11Q, *32:23 = *32:15, *32:23
++-----+ +----- -----+ *32:11Q, *32:25 = *32:11Q, *32:45N = *32:15, *32:45N
++-----+ +----- -----+ *32:11Q, *32:24 = *32:15, *32:24
++-----+ +----- -----+ *32:11Q, *32:21 = *32:15, *32:21



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++-----+ +-----+-----	*32:11Q, *32:14 = *32:14, *32:15
++-----+ +-----+-----	*32:11Q, *32:13 = *32:13, *32:15
++-----+ +-----+-----	*32:11Q, *32:12 = *32:12, *32:15
++-----+ +-----+-----	*32:10, *32:48N = *32:16, *32:48N
++-----+ +-----+-----	*32:10, *32:28 = *32:16, *32:28
++-----+ +-----+-----	*32:10, *32:27N = *32:16, *32:27N
++-----+ +-----+-----	*32:10, *32:26 = *32:16, *32:26
++-----+ +-----+-----	*32:10, *32:23 = *32:16, *32:23
++-----+ +-----+-----	*32:10, *32:25 = *32:10, *32:45N = *32:16, *32:25 = *32:16, *32:45N
++-----+ +-----+-----	*32:10, *32:24 = *32:16, *32:24
++-----+ +-----+-----	*32:10, *32:21 = *32:16, *32:21
++-----+ +-----+-----	*32:10, *32:14 = *32:14, *32:16
++-----+ +-----+-----	*32:10, *32:13 = *32:13, *32:16
++-----+ +-----+-----	*32:10, *32:12 = *32:12, *32:16
++-----+ +-----+-----	*32:10, *32:11Q = *32:10, *32:15 = *32:11Q, *32:16 = *32:15, *32:16
++-----+ +-----+-----	*32:09, *32:25 = *32:09, *32:45N
++-----+ +-----+-----	*32:09, *32:11Q = *32:09, *32:15
++-----+ +-----+-----	*32:09, *32:10 = *32:09, *32:16
++-----+ +-----+-----	*32:08, *32:25 = *32:08, *32:45N
++-----+ +-----+-----	*32:08, *32:11Q = *32:08, *32:15
++-----+ +-----+-----	*32:08, *32:10 = *32:08, *32:16
++-----+ +-----+-----	*32:07, *32:48N = *32:19N, *32:48N
++-----+ +-----+-----	*32:07, *32:28 = *32:19N, *32:28
++-----+ +-----+-----	*32:07, *32:27N = *32:19N, *32:27N
++-----+ +-----+-----	*32:07, *32:26 = *32:19N, *32:26
++-----+ +-----+-----	*32:07, *32:23 = *32:19N, *32:23
++-----+ +-----+-----	*32:07, *32:45N = *32:19N, *32:25 = *32:19N, *32:45N
++-----+ +-----+-----	*32:07, *32:24 = *32:19N, *32:24
++-----+ +-----+-----	*32:07, *32:21 = *32:19N, *32:21
++-----+ +-----+-----	*32:07, *32:14 = *32:14, *32:19N
++-----+ +-----+-----	*32:07, *32:13 = *32:13, *32:19N
++-----+ +-----+-----	*32:07, *32:12 = *32:12, *32:19N
++-----+ +-----+-----	*32:07, *32:11Q = *32:11Q, *32:19N = *32:15, *32:19N
++-----+ +-----+-----	*32:07, *32:10 = *32:07, *32:16 = *32:10, *32:19N = *32:16, *32:19N
++-----+ +-----+-----	*32:07, *32:09 = *32:09, *32:19N
++-----+ +-----+-----	*32:07, *32:08 = *32:08, *32:19N
++-----+ +-----+-----	*32:05, *32:25 = *32:05, *32:45N
++-----+ +-----+-----	*32:05, *32:11Q = *32:05, *32:15
++-----+ +-----+-----	*32:05, *32:10 = *32:05, *32:16
++-----+ +-----+-----	*32:01:01, *32:17 = *32:01:06, *32:17 = *32:05, *32:08 = *32:05, *32:17 = *32:08, *32:17 = *32:17, *32:17 = *32:17, *32:39
++-----+ +-----+-----	*32:05, *32:07 = *32:05, *32:19N
++-----+ +-----+-----	*32:04, *32:48N = *32:48N, *32:52
++-----+ +-----+-----	*32:04, *32:28 = *32:28, *32:52
++-----+ +-----+-----	*32:04, *32:27N = *32:27N, *32:52
++-----+ +-----+-----	*32:04, *32:26 = *32:26, *32:52
++-----+ +-----+-----	*32:04, *32:23 = *32:23, *32:52
++-----+ +-----+-----	*32:04, *32:25 = *32:04, *32:45N = *32:25, *32:52 = *32:45N, *32:52
++-----+ +-----+-----	*32:04, *32:24 = *32:24, *32:52
++-----+ +-----+-----	*32:04, *32:21 = *32:21, *32:52
++-----+ +-----+-----	*32:04, *32:14 = *32:14, *32:52
++-----+ +-----+-----	*32:04, *32:13 = *32:13, *32:52
++-----+ +-----+-----	*32:04, *32:12 = *32:12, *32:52
++-----+ +-----+-----	*32:04, *32:11Q = *32:04, *32:15 = *32:11Q, *32:52 = *32:15, *32:52
++-----+ +-----+-----	*32:04, *32:10 = *32:04, *32:16 = *32:10, *32:52 = *32:16, *32:52
++-----+ +-----+-----	*32:01:01, *32:20 = *32:01:06, *32:20 = *32:04, *32:09 = *32:04, *32:20 = *32:09, *32:20 = *32:09, *32:52 = *32:20, *32:20 = *32:20, *32:39 =



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++---+--	++-----	-----	*32:20, *32:52
++---++	+-----	-----	*32:04, *32:08 = *32:08, *32:52
++---++	+-----	-----	*32:04, *32:07 = *32:04, *32:19N = *32:07, *32:52 = *32:19N, *32:52
++---++	+-----	-----	*32:04, *32:05 = *32:05, *32:52
++---+--	+-----	---+-----	*32:03, *32:25 = *32:03, *32:45N
++---+--	+-----	-----	*32:03, *32:11Q = *32:03, *32:15
++---+--	+-----	-----	*32:03, *32:10 = *32:03, *32:16
++---+--	+-----	-----	*32:03, *32:07 = *32:03, *32:19N
++---+--	+-----	-----	*32:03, *32:04 = *32:03, *32:52
++---+--	+-----	---+-----	*32:06, *32:25 = *32:06, *32:45N
++---+--	+-----	-----	*32:06, *32:11Q = *32:06, *32:15
++---+--	+-----	-----	*32:06, *32:10 = *32:06, *32:16
++---+--	+-----	-----	*32:06, *32:07 = *32:06, *32:19N
++---+--	+-----	-----	*32:04, *32:06 = *32:06, *32:52
+++-----	+-----	---+-----	*32:22, *32:25 = *32:22, *32:45N
+++-----	+-----	-----	*32:11Q, *32:22 = *32:15, *32:22
+++-----	+-----	-----	*32:07, *32:22 = *32:19N, *32:22
+++-----	+-----	-----	*32:04, *32:22 = *32:22, *32:52
++++-----	+-----	-----	*32:01:01, *32:02 = *32:02, *32:06 = *32:02, *32:39 = *32:06, *32:22
++-----	+-----	---+---++	*32:25, *32:56N = *32:45N, *32:56N
++-----	+-----	---+-----	*32:18, *32:25 = *32:18, *32:45N
++-----	+-----	-----++	*32:11Q, *32:56N = *32:15, *32:56N
++-----	+-----	-----++	*32:11Q, *32:18 = *32:15, *32:18
++-----	+-----	-----++	*32:10, *32:56N = *32:16, *32:56N
++-----	+-----	-----++	*32:10, *32:18 = *32:16, *32:18
++-----	+-----	-----++	*32:07, *32:56N = *32:19N, *32:56N
++-----	+-----	-----++	*32:07, *32:18 = *32:18, *32:19N
++-----	++-----	---+-----	*32:17, *32:25 = *32:17, *32:45N
++-----	++-----	-----	*32:11Q, *32:17 = *32:15, *32:17
++-----	++-----	-----	*32:10, *32:17 = *32:16, *32:17
++-----	++-----	-----	*32:07, *32:17 = *32:17, *32:19N
++---+--	+-----	-----++	*32:04, *32:56N = *32:52, *32:56N
++---+--	+-----	-----	*32:04, *32:18 = *32:18, *32:52
++---+--	+-----	---+-----	*32:20, *32:25 = *32:20, *32:45N
++---+--	+-----	-----	*32:11Q, *32:20 = *32:15, *32:20
++---+--	+-----	-----	*32:10, *32:20 = *32:16, *32:20
++---+--	+-----	-----	*32:07, *32:20 = *32:19N, *32:20
++---+--	++-----	-----	*32:04, *32:17 = *32:17, *32:52
++++-----	+-----	---+-----	*32:02, *32:25 = *32:02, *32:45N
++++-----	+-----	-----	*32:02, *32:11Q = *32:02, *32:15
++++-----	+-----	-----	*32:02, *32:07 = *32:02, *32:19N
++++---+--	+-----	-----	*32:02, *32:04 = *32:02, *32:52

*32:01:01 = *32:01:01-32:01:05 and 32:01:07-32:01:15 and 32:29-32:38, 32:40-32:41, 32:43, 32:46-32:47, 32:49-32:51, 32:55:01-32:55:02 and 32:57-32:58
 *32:21 = *32:21 and 32:44
 *32:23 = *32:23 and 32:54
 *32:28 = *32:28 and 32:53
 *32:39 = *32:39 and 32:42

101.431-12 – including *Taq* polymerase, IFU-01
 101.431-12u – without *Taq* polymerase, IFU-02

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Lot No.: **84S**

Lot-specific information
SPECIFICITY TABLE

HLA-A*32 SSP subtyping

Specificities and sizes of the PCR products of the 24 primer mixes used for HLA-A*32 SSP subtyping

Primer Mix	Size of spec. PCR product ¹	Size of control band ²	Amplified HLA-A*32 alleles	Other amplified HLA-A alleles ^{3,4}
1	200 bp	800 bp	*32:01:01-32:06, 32:08-32:14, 32:16-32:24, 32:26-32:38, 32:40-32:41, 32:43-32:58	*01:01:01:01-01:01:58, 01:03-01:04N, 01:06-01:19, 01:21-01:33, 01:35-01:42, 01:44-01:46, 01:48-01:50, 01:52N-01:59, 01:61-01:70, 01:72-01:82, 01:84-01:104, 01:106-01:138, 02:45, 02:56:01-02:56:02, 02:103, 02:195, 03:01:01:01-03:01:03, 03:01:05-03:11N, 03:13-03:22:02, 03:25-03:29, 03:31-03:35, 03:37-03:58, 03:60-03:69N, 03:71, 03:73-03:87, 03:90-03:112, 03:114-03:151, 03:153-03:174, 30:55, 31:21, 36:01-36:05, 74:01-74:03, 74:05-74:17
2	510 bp	1070 bp	*32:01:01-32:01:05, 32:01:07-32:01:15, 32:03-32:09, 32:11Q-32:21, 32:23-32:58	*02:81, 02:87, 02:112, 02:124, 02:129, 03:152, 23:01:01-23:01:11, 23:03:01-23:13, 23:14:02-23:26, 23:28-23:33, 23:35-23:37:02, 23:39-23:60, 24:13:01, 24:18, 24:24, 24:94, 24:188, 24:204, 24:207, 24:213, 24:228, 25:19, 29:13, 31:07-31:08, 31:10
3	130 bp	1070 bp	*32:02, 32:22	*11:01:28, 24:208, 29:05, 29:33, 31:24, 33:59
4^{5,6}	115 bp	800 bp	*32:02, 32:06	*02:24:02, 24:208, 29:33, 29:51, 31:41
5	165 bp	800 bp	*32:03	
6^{5,8}	120 bp, 520 bp	1070 bp	*32:04, 32:20, 32:52	*03:152, 24:18, 24:204, 24:213
7	135 bp	800 bp	*32:05, 32:17	*29:13

101.431-12 – including *Taq* polymerase, IFU-01
 101.431-12u – without *Taq* polymerase, IFU-02

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Lot-specific information

8^{7,9}	165 bp, 215 bp	1070 bp	*32:07, 32:19N	*01:02 ^w , 01:20 ^w , 03:72, 11:88, 23:09 ^w , 23:51, 24:24, 24:67, 24:145, 24:156, 24:191, 26:16, 29:37, 30:01:01- 30:04:02, 30:06, 30:09-30:20, 30:23-30:30, 30:32-30:54, 30:56-30:59N, 30:61-30:78N, 68:45
9	180 bp	1070 bp	*32:01:01- 32:03, 32:05- 32:58	*29:13
10	150 bp	800 bp	*32:08, 32:17	*29:13
11^{5,10}	120 bp, 165 bp	1070 bp	*32:09, 32:20	
12¹¹	130 bp, 195 bp	1070 bp	*32:10, 32:16	*29:28, 31:30, C*02:02:15
13¹²	155 bp, 200 bp	1070 bp	*32:11Q, 32:15	*01:51, 02:55, 03:24, 25:03, 26:20, 34:08, 68:71
14	215 bp	1070 bp	*32:12, 32:18	*29:06, 31:51
15¹³	165 bp, 220 bp	1070 bp	*32:13, 32:18	*23:03:01, 24:208, 29:03, 29:33, 31:05, 33:10
16	220 bp	1070 bp	*32:14	
17^{5,14}	75 bp, 200 bp	1070 bp	*32:21, 32:44	*31:45, 33:16
18	130 bp	1070 bp	*32:24	
19⁵	110 bp	1070 bp	*32:25, 32:45N	
20^{5,6,15}	125 bp, 220 bp	1070 bp	*32:23, 32:54	*02:294, 33:46, 34:01:01 [?] - 34:01:02 [?] , 34:05 [?] , 66:08
21	150 bp	800 bp	*32:26	*31:25
22¹⁶	175 bp, 230 bp	1070 bp	*32:27N, 32:56N	
23^{5,17}	80 bp, 225 bp	1070 bp	*32:28, 32:53	*02:41, 02:80, 02:117, 02:289, 02:304, 23:45, 24:62, 26:10, 31:67-31:68, 33:32:01, 33:39
24	175 bp	800 bp	*32:48N, 32:56N	*02:314N

¹ Alleles 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*32 SSP typings. When the primers in a primer mix can give rise to HLA-specific PCR products of more than one length this is indicated if the size difference is more than 20 base pairs. Size differences of 20 base pairs or less are not given. For high resolution SSP kits the respective lengths of the HLA-specific PCR product(s) are given for the alleles amplified by these primer mixes.

101.431-12 – including *Taq* polymerase, IFU-01
 101.431-12u – without *Taq* polymerase, IFU-02

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Lot No.: 84S

Lot-specific information

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

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

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

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

²The internal positive control primer pairs amplify segments of the human growth hormone gene. The 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*01 subtyping.

In addition, wells number 4, 5, 7, 10, 21 and 24 contain the primer pair giving rise to the shorter, 800 bp, internal positive control band in order to allow kit identification.

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

³Due to the sharing of sequence motifs between HLA-A alleles non-HLA-A*32 alleles will be amplified by primer mixes 1 to 4, 6 to 10, 12 to 15, 17, 20, 21, 23 and 24. In addition, primer mix 12 will amplify the C*02:02:15 allele.

⁴For 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.

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

⁶Primer mixes 4 and 20 may have tendencies of unspecific amplifications.

⁷Primer mix 8 may give rise to a lower yield of HLA-specific PCR product than the other A*32 primer mixes.

⁸Primer mix 6: Specific PCR fragment of 120 bp in A*32:20 allele. Specific PCR fragment of 520 bp in the A*32:04 and 32:52 and the A*03:152, 24:18, 24:204 and 24:213 alleles.

⁹Primer mix 8: Specific PCR fragment of 165 bp in A*32:19N allele. Specific PCR fragment of 215 bp in the A*32:07 and the A*01:02^w, 01:20^w, 03:72, 11:88, 23:09^w, 23:51, 24:24, 24:67, 24:145, 24:156, 24:191, 26:16, 29:37, 30:01:01-30:04:02, 30:06, 30:09-30:20, 30:23-30:30, 30:32-30:54, 30:56-30:59N, 30:61-30:78N and 68:45 alleles.

¹⁰Primer mix 11: Specific PCR fragment of 120 bp in A*32:20 allele. Specific PCR fragment of 165 bp in the A*32:09 allele.

¹¹Primer mix 12: Specific PCR fragment of 130 bp in A*32:10 and the A*29:28 and 31:30 and in the C*02:02:15 alleles. Specific PCR fragment of 195 bp in the A*32:16 allele.

¹²Primer mix 13: Specific PCR fragment of 155 bp in A*32:11Q allele. Specific PCR fragment of 200 bp in the A*32:15 and the A*01:51, 02:55, 03:24, 25:03, 26:20, 34:08 and 68:71 alleles.

¹³Primer mix 15: Specific PCR fragment of 165 bp in A*32:13 and the A*23:03:01, 24:208, 29:03, 29:33, 31:05 and 33:10 alleles. Specific PCR fragment of 220 bp in the A*32:18 allele.

¹⁴Primer mix 17: Specific PCR fragment of 75 bp in A*32:21 and the A*31:45 and 33:16 alleles. Specific PCR fragment of 200 bp in the A*32:44 allele.

¹⁵Primer mix 20: Specific PCR fragment of 125 bp in A*32:23 and the A*33:46 alleles. Specific PCR fragment of 220 bp in the A*32:54 and the A*02:294, 34:05[?] and 66:08 alleles.

¹⁶Primer mix 22: Specific PCR fragment of 175 bp in A*32:56N allele. Specific PCR fragment of 230 bp in the A*32:27N allele.

¹⁷Primer mix 23: Specific PCR fragment of 80 bp in A*32:28 and the A*02:41, 02:80, 02:117, 02:289, 02:304, 23:45, 24:62, 26:10, 31:67-31:68 and 33:32:01 alleles. Specific PCR fragment of 225 bp in the A*32:53 and the A*33:39 alleles.

'w', might be weakly amplified.

101.431-12 – including *Taq* polymerase, IFU-01
 101.431-12u – without *Taq* polymerase, IFU-02

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Lot No.: **84S**

Lot-specific information

INTERPRETATION TABLE												
HLA-A*32 SSP subtyping												
Amplification patterns of the A*32:01 to A*32:58 alleles												
	Well ⁸											
	1	2	3	4	5	6	7	8	9	10	11	12
Length of spec.	200	510	130	115	165	120	135	165	180	150	120	130
PCR product(s)						520		215			165	195
Length of int. pos. control ¹	800	1070	1070	800	800	1070	800	1070	1070	800	1070	1070
5'-primer(s) ²	98	317	448	448	180	101	180	98	180	180	101	448
	5'-CTT ^{3'}	5'-gCT ^{3'}	5'-CCT ^{3'}	5'-CCT ^{3'}	5'-TTT ^{3'}	5'-CAT ^{3'}	5'-TTT ^{3'}	5'-CTC ^{3'}	5'-TTT ^{3'}	5'-TTT ^{3'}	5'-CAT ^{3'}	5'-CCT ^{3'}
	98					317		448			448	
	5'-CTT ^{3'}					5'-gCT ^{3'}		5'-CCT ^{3'}			5'-CCT ^{3'}	
3'-primer(s) ³	256	538	539	524	302	180	265	270	317	282	180	539
	5'-CTg ^{3'}	5'-CAA ^{3'}	5'-TCT ^{3'}	5'-CAT ^{3'}	5'-ggT ^{3'}	5'-TCA ^{3'}	5'-CCC ^{3'}	5'-ACA ^{3'}	5'-ggA ^{3'}	5'-gAC ^{3'}	5'-TCA ^{3'}	5'-TCC ^{3'}
	256	555				555	282	573		292	571	602
	5'-CTg ^{3'}	5'-CCA ^{3'}				5'-CCA ^{3'}	5'-gAC ^{3'}	5'-AgT ^{3'}		5'-gTg ^{3'}	5'-CCg ^{3'}	5'-TCA ^{3'}
Well No.	1	2	3	4	5	6	7	8	9	10	11	12
HLA-A allele ⁴												
*32:01:01-32:01:05, 32:01:07-32:01:15, 32:29-32:38, 32:40-32:41, 32:43, 32:46-32:47, 32:49-32:51, 32:55:01-32:55:02, 32:57-32:58	1	2							9			
*32:01:06	1								9			
*32:02	1		3	4					9			
*32:03	1	2			5				9			
*32:04	1	2				6						
*32:05	1	2					7		9			
*32:06	1	2		4					9			
*32:07		2						8	9			
*32:08	1	2							9	10		
*32:09	1	2							9		11	
*32:10	1								9			12
*32:11Q	1	2							9			
Well No.	1	2	3	4	5	6	7	8	9	10	11	12

101.431-12 – including *Taq* polymerase, IFU-01
 101.431-12u – without *Taq* polymerase, IFU-02

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Lot No.: **84S**

Lot-specific information

INTERPRETATION TABLE												
HLA-A*32 SSP subtyping												
Amplification patterns of the A*32:01 to A*32:58 alleles												
Well ⁸												
13	14	15	16	17	18	19	20	21	22	23	24	
155	215	165	220	75	130	110	125	150	175	80	175	Length of spec.
200		220		200			220		230	225		PCR product(s)
1070	1070	1070	1070	1070	1070	1070	1070	800	1070	1070	800	Length of int. pos. control ¹
102	139	139	124	448	180	180	448	448	98	414	98	5'-primer(s) ²
5'-ACA 3'	5'-TCg 3'	5'-TCg 3'	5'-gCC 3'	5'-CCT 3'	5'-TTT 3'	5'-TTT 3'	5'-CCT 3'	5'-CCT 3'	5'-CTT 3'	5'-CAg 3'	5'-CTT 3'	
448	448	448				448	652			649	411	
5'-CCT 3'	5'-CCT 3'	5'-CCT 3'				5'-CCT 3'	5'-CTg 3'			5'-ACA 3'	5'-TAG 3'	
259	317	317	302	482	271	258	532	559	232	453	232	3'-primer(s) ³
5'-gTT 3'	5'-ggA 3'	5'-ggA 3'	5'-ggC 3'	5'-Tgg 3'	5'-CAT 3'	5'-TCg 3'	5'-CTT 3'	5'-CCT 3'	5'-C.g 3'	5'-TCT 3'	5'-C.g 3'	
563	616	570		608		508	829		286	831	538	
5'-CgA 3'	5'-CgC 3'	5'-CCg 3'		5'-gCg 3'		5'-CTA 3'	5'-CTC 3'		5'-CTA 3'	5'-TCC 3'	5'-CAA 3'	
13	14	15	16	17	18	19	20	21	22	23	24	Well No.
												HLA-A allele ⁴
												*32:01:01-32:01:05, 32:01:07-32:01:15, 32:29-32:38, 32:40-32:41, 32:43, 32:46-32:47, 32:49-32:51, 32:55:01-32:55:02, 32:57-32:58
												*32:01:06
												*32:02
												*32:03
												*32:04
												*32:05
												*32:06
												*32:07
												*32:08
												*32:09
												*32:10
13												*32:11Q
13	14	15	16	17	18	19	20	21	22	23	24	Well No.

101.431-12 – including *Taq* polymerase, IFU-01
 101.431-12u – without *Taq* polymerase, IFU-02

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 “Instructions for Use” (IFU)

Lot No.: **84S**

Lot-specific information

Length of spec.	200	510	130	115	165	120	135	165	180	150	120	130
PCR product(s)						520		215			165	195
Well No.	1	2	3	4	5	6	7	8	9	10	11	12
*32:12	1	2							9			
*32:13	1	2							9			
*32:14	1	2							9			
*32:15		2							9			
*32:16	1	2							9			12
*32:17	1	2					7		9	10		
*32:18	1	2							9			
*32:19N	1	2						8	9			
*32:20	1	2				6			9		11	
*32:21, 32:44 ⁵	1	2							9			
*32:22	1		3						9			
*32:23, 32:54 ⁶	1	2							9			
*32:24	1	2							9			
*32:25		2							9			
*32:26	1	2							9			
*32:27N	1	2							9			
*32:28, 32:53 ⁷	1	2							9			
*32:39, 32:42		2							9			
*32:45N	1	2							9			
*32:48N	1	2							9			
*32:52	1	2				6			9			
*32:56N	1	2							9			
*01:01:01:01-01:01:58, 01:03-01:04N, 01:06-01:19, 01:21-01:33, 01:35-01:42, 01:44-01:46, 01:48-01:50, 01:52N-01:59, 01:61-01:70, 01:72-01:82, 01:84-01:104, 01:106-01:138, 02:45, 02:56:01-02:56:02, 02:103, 02:195, 03:01:01:01-03:01:03, 03:01:05-03:11N, 03:13-03:22:02, 03:25-03:29, 03:31-03:35, 03:37-03:58, 03:60-03:69N, 03:71, 03:73-03:87, 03:90-03:112, 03:114-03:151, 03:153-03:174, 30:55, 31:21, 36:01-36:05, 74:01-74:03, 74:05-74:17	1											
*01:02, 01:20								w				
*01:51, 02:55, 03:24, 25:03, 26:20, 34:08, 68:71												
*02:24:02, 29:51, 31:41				4								
Well No.	1	2	3	4	5	6	7	8	9	10	11	12

101.431-12 – including *Taq* polymerase, IFU-01
 101.431-12u – without *Taq* polymerase, IFU-02

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Lot No.: **84S**

Lot-specific information

155	215	165	220	75	130	110	125	150	175	80	175	Length of spec.
200		220		200			220		230	225		PCR product(s)
13	14	15	16	17	18	19	20	21	22	23	24	Well No.
	14											*32:12
		15										*32:13
			16									*32:14
13												*32:15
												*32:16
												*32:17
	14	15										*32:18
												*32:19N
												*32:20
				17								*32:21, 32:44 ⁵
												*32:22
							20					*32:23, 32:54 ⁶
					18							*32:24
						19						*32:25
								21				*32:26
									22			*32:27N
										23		*32:28, 32:53 ⁷
												*32:39, 32:42
						19						*32:45N
											24	*32:48N
												*32:52
								22		24		*32:56N
												*01:01:01:01-01:01:58, 01:03-01:04N, 01:06-01:19, 01:21-01:33, 01:35-01:42, 01:44-01:46, 01:48-01:50, 01:52N-01:59, 01:61-01:70, 01:72-01:82, 01:84-01:104, 01:106-01:138, 02:45, 02:56:01-02:56:02, 02:103, 02:195, 03:01:01:01-03:01:03, 03:01:05-03:11N, 03:13-03:22:02, 03:25-03:29, 03:31-03:35, 03:37-03:58, 03:60-03:69N, 03:71, 03:73-03:87, 03:90-03:112, 03:114-03:151, 03:153-03:174, 30:55, 31:21, 36:01-36:05, 74:01-74:03, 74:05-74:17
												*01:02, 01:20
13												*01:51, 02:55, 03:24, 25:03, 26:20, 34:08, 68:71
												*02:24:02, 29:51, 31:41
13	14	15	16	17	18	19	20	21	22	23	24	Well No.

101.431-12 – including *Taq* polymerase, IFU-01
 101.431-12u – without *Taq* polymerase, IFU-02

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Lot No.: **84S**

Lot-specific information

Length of spec.	200	510	130	115	165	120	135	165	180	150	120	130
PCR product(s)						520		215			165	195
Well No.	1	2	3	4	5	6	7	8	9	10	11	12
*02:41, 02:80, 02:117, 02:289, 02:304, 24:62, 26:10, 31:67-31:68, 33:32:01, 33:39												
*02:81, 02:87, 02:112, 02:124, 02:129, 23:01:01-23:01:11, 23:03:02-23:08N, 23:10-23:13, 23:14:02-23:26, 23:28-23:33, 23:35- 23:37:02, 23:39-23:44, 23:46- 23:50, 23:52-23:60, 24:13:01, 24:94, 24:188, 24:207, 24:228, 25:19, 31:07-31:08, 31:10		2										
*02:294, 33:46, 66:08												
*02:314N												
*03:72, 11:88, 24:67, 24:145, 24:156, 24:191, 26:16, 29:37, 30:01:01-30:04:02, 30:06, 30:09- 30:20, 30:23-30:30, 30:32-30:54, 30:56-30:59N, 30:61-30:78N, 68:45								8				
*03:152, 24:18, 24:204, 24:213		2				6						
*11:01:28, 29:05, 31:24, 33:59			3									
*23:03:01		2										
*23:09		2						w				
*23:45		2										
*23:51, 24:24		2						8				
*24:208, 29:33			3	4								
*29:03, 31:05, 33:10												
*29:06, 31:51												
*29:13		2					7		9	10		
*29:28, 31:30, C*02:02:15												12
*31:25												
*31:45, 33:16												
*34:01:01-34:01:02, 34:05												
HLA-A allele⁴												
Well No.	1	2	3	4	5	6	7	8	9	10	11	12

101.431-12 – including *Taq* polymerase, IFU-01
 101.431-12u – without *Taq* polymerase, IFU-02

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Lot No.: **84S**

Lot-specific information

155	215	165	220	75	130	110	125	150	175	80	175	Length of spec.
200		220		200			220		230	225		PCR product(s)
13	14	15	16	17	18	19	20	21	22	23	24	Well No.
										23		*02:41, 02:80, 02:117, 02:289, 02:304, 24:62, 26:10, 31:67-31:68, 33:32:01, 33:39
												*02:81, 02:87, 02:112, 02:124, 02:129, 23:01:01-23:01:11, 23:03:02-23:08N, 23:10-23:13, 23:14:02-23:26, 23:28-23:33, 23:35- 23:37:02, 23:39-23:44, 23:46- 23:50, 23:52-23:60, 24:13:01, 24:94, 24:188, 24:207, 24:228, 25:19, 31:07-31:08, 31:10
							20					*02:294, 33:46, 66:08
											24	*02:314N
												*03:72, 11:88, 24:67, 24:145, 24:156, 24:191, 26:16, 29:37, 30:01:01-30:04:02, 30:06, 30:09- 30:20, 30:23-30:30, 30:32-30:54, 30:56-30:59N, 30:61-30:78N, 68:45
												*03:152, 24:18, 24:204, 24:213
												*11:01:28, 29:05, 31:24, 33:59
		15										*23:03:01
												*23:09
										23		*23:45
												*23:51, 24:24
		15										*24:208, 29:33
		15										*29:03, 31:05, 33:10
	14											*29:06, 31:51
												*29:13
												*29:28, 31:30, C*02:02:15
								21				*31:25
				17								*31:45, 33:16
							?					*34:01:01-34:01:02, 34:05
												HLA-A allele ⁴
13	14	15	16	17	18	19	20	21	22	23	24	Well No.

101.431-12 – including *Taq* polymerase, IFU-01
101.431-12u – without *Taq* polymerase, IFU-02

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“Instructions for Use” (IFU)

Lot No.: **84S**

Lot-specific information

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*32 subtyping.

In addition, wells number 4, 5, 7, 10, 21 and 24 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.

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.

⁴HLA-A*32 alleles in bold lettering are listed as confirmed alleles on the on the IMGT/HLA web page www.ebi.ac.uk/imgt/hla, release 3.13.1, July 2013.

⁵The A*32:21 and A*32:44 alleles can be distinguished by the different sizes of the specific PCR products generated by primer mix 17.

⁶The A*32:23 and A*32:54 alleles can be distinguished by the different sizes of the specific PCR products generated by primer mix 20.

⁷The A*32:28 and A*32:53 alleles can be distinguished by the different sizes of the specific PCR products generated by primer mix 23.

⁸Primer mix 6: Specific PCR fragment of 120 bp in A*32:20 allele. Specific PCR fragment of 520 bp in the A*32:04 and 32:52 and the A*03:152, 24:18, 24:204 and 24:213 alleles.

Primer mix 8: Specific PCR fragment of 165 bp in A*32:19N allele. Specific PCR fragment of 215 bp in the A*32:07 and the A*01:02^w, 01:20^w, 03:72, 11:88, 23:09^w, 23:51, 24:24, 24:67, 24:145, 24:156, 24:191, 26:16, 29:37, 30:01:01-30:04:02, 30:06, 30:09-30:20, 30:23-30:30, 30:32-30:54, 30:56-30:59N, 30:61-30:78N and 68:45 alleles.

Primer mix 11: Specific PCR fragment of 120 bp in A*32:20 allele. Specific PCR fragment of 165 bp in the A*32:09 allele.

Primer mix 12: Specific PCR fragment of 130 bp in A*32:10 and the A*29:28 and 31:30 and in the C*02:02:15 alleles. Specific PCR fragment of 195 bp in the A*32:16 allele.

Primer mix 13: Specific PCR fragment of 155 bp in A*32:11Q allele. Specific PCR fragment of 200 bp in the A*32:15 and the A*01:51, 02:55, 03:24, 25:03, 26:20, 34:08 and 68:71 alleles.

Primer mix 15: Specific PCR fragment of 165 bp in A*32:13 and the A*23:03:01, 24:208, 29:03, 29:33, 31:05 and 33:10 alleles. Specific PCR fragment of 220 bp in the A*32:18 allele.

Primer mix 17: Specific PCR fragment of 75 bp in A*32:21 and the A*31:45 and 33:16 alleles. Specific PCR fragment of 200 bp in the A*32:44 allele.

Primer mix 20: Specific PCR fragment of 125 bp in A*32:23 and the A*33:46 alleles. Specific PCR fragment of 220 bp in the A*32:54 and the A*02:294, 34:05⁷ and 66:08 alleles.

Primer mix 22: Specific PCR fragment of 175 bp in A*32:56N allele. Specific PCR fragment of 230 bp in the A*32:27N allele.

Primer mix 23: Specific PCR fragment of 80 bp in A*32:28 and the A*02:41, 02:80, 02:117, 02:289, 02:304, 23:45, 24:62, 26:10, 31:67-31:68 and 33:32:01 alleles. Specific PCR fragment of 225 bp in the A*32:53 and the A*33:39 alleles.

'w', might be weakly amplified.

101.431-12 – including *Taq* polymerase, IFU-01
 101.431-12u – without *Taq* polymerase, IFU-02

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 “Instructions for Use” (IFU)

Lot No.: **84S**

Lot-specific information

CELL LINE VALIDATION SHEET																				
HLA-A*32 SSP subtyping kit																				
				Lot No.:	Well															
					1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
					201324501	201324502	201324503	201324504	201324505	201324506	201324507	201324508	201324509	201324510	201324511	201324512	201324513	201324514	201324515	201324516
	IHCW 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		-	-	-	-	-	-	-	-	-	-	-	-	-	-		

101.431-12 – including *Taq* polymerase, IFU-01
 101.431-12u – without *Taq* polymerase, IFU-02

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 “Instructions for Use” (IFU)

Lot No.: **84S**

Lot-specific information

CELL LINE VALIDATION SHEET												
HLA-A*32 SSP subtyping kit												
				Well								
				17	18	19	20	21	22	23	24	
				Lot No.:	201324517	201324518	201324519	201324520	201324521	201324522	201324523	201324524
	IHC 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	-	-	-	-	-	-	-	-	-

101.431-12 – including *Taq* polymerase, IFU-01
 101.431-12u – without *Taq* polymerase, IFU-02

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

Lot No.: **84S**

Lot-specific information

CERTIFICATE OF ANALYSIS

Olerup SSP® HLA-A*32 SSP

Product number: 101.431-12 – including *Taq* polymerase
 101.431-12u – without *Taq* polymerase

Lot number: **84S**

Expiry date: **2016-April-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	2013-245-01	9	2013-245-09	17	2013-245-17
2	2013-245-02	10	2013-245-10	18	2013-245-18
3	2013-245-03	11	2013-245-11	19	2013-245-19
4	2013-245-04	12	2013-245-12	20	2013-245-20
5	2013-245-05	13	2013-245-13	21	2013-245-21
6	2013-245-06	14	2013-245-14	22	2013-245-22
7	2013-245-07	15	2013-245-15	23	2013-245-23
8	2013-245-08	16	2013-245-16	24	2013-245-24

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 3 to 5, 7, 10 to 19 and 21 to 24 were available. The specificities of the primers in primer solutions 3 to 5, 7, 10 to 15, 18, 23 and 24 were tested by separately adding one additional 5'-primer, respectively one additional 3'-primer.

In primer solution 16 it was only possible to test the 3'-primer, the 5'-primer was not possible to test. In primer solutions 17 and 19 to 22 it was only possible to test the 5'-primers, the 3'-primers were not possible to test.

In primer solution 1, 8, 10 to 14 and 24 one of the 3'-primers was not possible to test. In primer solutions 1, 6, 11, 14, 15, 23 and 24 one of the 5'-primers was not possible to test.

Additional primers in primer solutions 2, 6, 8 and 20 were tested by separately adding 5'-primers respectively 3'-primers.

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

Date of approval: 2013-October-10

Approved by:

Production Quality Control

101.431-12 – including *Taq* polymerase, IFU-01
101.431-12u – without *Taq* polymerase, IFU-02

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

Lot No.: **84S**

Lot-specific information

Declaration of Conformity

Product name: *Olerup* SSP® HLA-A*32
Product number: 101.431-12/12u
Lot number: 84S

Intended use: HLA-A*32 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-October-10

Ann-Cathrin Jareman
Head of QA and Regulatory Affairs

101.431-12 – including *Taq* polymerase, IFU-01
101.431-12u – without *Taq* polymerase, IFU-02

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“Instructions for Use” (IFU)

Lot No.: **84S**

Lot-specific information

101.431-12 – including *Taq* polymerase, IFU-01
101.431-12u – without *Taq* polymerase, IFU-02

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

Lot No.: **84S**

Lot-specific information

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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>

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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**.