

101.421-06 – including *Taq* polymerase, IFU-01
101.421-06u – without *Taq* polymerase, IFU-02

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“Instructions for Use” (IFU)

Lot No.: **68R**

Lot-specific Information

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Olerup SSP[®] HLA-A*23

Product number:	101.421-06 – including <i>Taq</i> polymerase 101.421-06u – without <i>Taq</i> polymerase
Lot number:	68R
Expiry date:	2015-July-01
Number of tests:	6
Number of wells per test:	32
Storage - pre-aliquoted primers:	dark at -20°C
- PCR Master Mix:	-20°C
- Adhesive PCR seals	RT
- Product Insert	RT

This Product Description is only valid for Lot No. 68R.

CHANGES COMPARED TO THE PREVIOUS *OLERUP SSP[®]* HLA-A*23 LOT (54M)

The HLA-A*23 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*23 including and without *Taq* polymerase is now described in one common Product Insert.

¹As described in section Uniquely Identified Alleles.

The HLA-A*23 specificity and interpretation tables have been updated for the HLA-A alleles described since the previous *Olerup SSP[®]* HLA-A*23 lot was made (**Lot No. 54M**).

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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
8	-	Added	3'-primer added for the A*23:48 allele.
15	-	Added	3'-primer added for the A*23:47 allele.
19	-	Added	3'-primer added for the A*23:49 allele.
24	-	Added	3'-primer added for the A*23:49 allele.
25	-	-	Exchanged positive control primer pair.
26	-	Added	3'-primer added for the A*23:48 allele.
29	Added	Added	Primer pair added for the A*23:47 allele, 3'-primer added for the A*23:37:02 allele.

Change in revision R01 compared to R00:

1. Primer mix 12 weakly amplifies the following HLA-B alleles: B*13:39, 38:16, 40:13, 40:19, 40:37, 40:109, 44:02:19, 44:05:03, 44:18, 44:25, 44:50, 44:75, 44:95, 44:152, 49:01:01-49:01:04, 49:04-49:24, 51:103, 51:119 and 57:51. This has been corrected in the Specificity and Interpretation Tables.

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PRODUCT DESCRIPTION

HLA-A*23 SSP subtyping

CONTENT

The primer set contains 5'- and 3'-primers for identifying the A*23:01 to A*23:55 alleles.

PLATE LAYOUT

Each test consists of 32 PCR reactions in a 32 well cut PCR plate.

1	2	3	4	5	6	7	8
9	10	11	12	13	14	15	16
17	18	19	20	21	22	23	24
25	26	27	28	29	30	31	32

The 32 well cut PCR plate is marked with ‘HLA-A*23’ in silver/gray ink.

Well No. 1 is marked with the Lot Number ‘68R’.

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 32 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*23 SSP subtypings will be influenced three A*01, several A*02, two A*03, two A*11, most A*24, the A*25:11, two A*26, three A*29, several A*30, four A*31, three A*32, two A*33 and four A*68 alleles when present on the other haplotype. In addition, the B*18:27 allele will be amplified by primer mixes 1, 3, 10, 14 and 15, and primer mix 12 will weakly amplify the B*13:39, 38:16, 40:13, 40:19, 40:37, 40:109, 44:02:19, 44:05:03, 44:18, 44:25, 44:50, 44:75, 44:95, 44:152, 49:01:01-49:01:04, 49:04-49:24, 51:103, 51:119 and 57:51 alleles.

UNIQUELY IDENTIFIED ALLELES

All the HLA-A*23 alleles, i.e. **A*23:01 to A*23:55 alleles**, recognized by the HLA Nomenclature Committee in October 2012¹ will be amplified by the primers in the HLA-A*23 subtyping kit.

The HLA-A*23 kit enables separation of the confirmed HLA-A*23 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*23 alleles is listed below.

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The HLA-A*23 kit also enables identification of polymorphisms in exons outside of the region encoding the peptide binding domain and of null and alternatively expressed alleles.

The HLA-A*23 subtyping kit cannot distinguish the silent mutations in the A*23:01:01-23:01:11 alleles, the A*23:03:01-23:03:02 alleles and the A*23:37:01-23:37:02 alleles.

The A*23:08N and 23:22 alleles can be distinguished by the different sizes of the specific PCR products generated by primer mix 7.

The A*23:09 and 23:26 alleles can be distinguished by the different sizes of the specific PCR products generated by primer mix 8.

The A*23:10 and 23:23 alleles can be distinguished by the different sizes of the specific PCR products generated by primer mix 10.

The A*23:13 and 23:33 alleles can be distinguished by the different sizes of the specific PCR products generated by primer mix 17.

The A*23:15 and 23:27 alleles can be distinguished by the different sizes of the specific PCR products generated by primer mix 19.

The A*23:16 and 23:29 alleles can be distinguished by the different sizes of the specific PCR products generated by primer mix 20.

The A*23:18 and 23:28 alleles can be distinguished by the different sizes of the specific PCR products generated by primer mix 4.

The A*23:19Q and 23:53 and the A*23:31 alleles can be distinguished by the different sizes of the specific PCR products generated by primer mix 22.

The A*23:36 and 23:39 alleles can be distinguished by the different sizes of the specific PCR products generated by primer mix 26.

The A*23:41 and 23:42 alleles can be distinguished by the different sizes of the specific PCR products generated by primer mix 25.

¹HLA-A alleles listed on the IMGT/HLA web page 2012-October-17, release 3.10.0, www.ebi.ac.uk/imgt/hla.

ALLELE CONFIRMATION STATUS

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

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¹Allele status “confirmed” or “unconfirmed” as listed on the IMGT/HLA web page 2012-October-17, release 3.10.0, www.ebi.ac.uk/imgt/hla.

RESOLUTION IN HOMO- AND HETEROZYGOTES

A total of 68 alleles generate 41 amplification patterns that can be combined in 861 homozygous and heterozygous combinations. 418 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.

++-----	-----	-+-----	-----	*23:17, *23:17 = *23:17, *23:50
++-----	-----	-+-----	-----	*23:46, *23:46 = *23:46, *23:50
++-----	-----	-+-----	-----	*23:44, *23:44 = *23:44, *23:50
++-----	-----	-+-----	-----	*23:37:01, *23:37:01 = *23:37:01, *23:50
++-----	-----	-+-----	-----	*23:32, *23:32 = *23:32, *23:50
++-----	-----	-+-----	-----	*23:34, *23:35 = *23:34, *23:50 = *23:35, *23:35 = *23:35, *23:50
++-----	-----	-+-----	-----	*23:36, *23:36 = *23:36, *23:50
++-----	-----	-+-----	-----	*23:41, *23:41 = *23:41, *23:50
++-----	-----	-+-----	-----	*23:21, *23:21 = *23:21, *23:50
++-----	-----	-+-----	-----	*23:20, *23:20 = *23:20, *23:50
++-----	-----	-+-----	-----	*23:19Q, *23:19Q = *23:19Q, *23:50
++-----	-----	-+-----	-----	*23:34, *23:46 = *23:35, *23:46
++-----	-----	-+-----	-----	*23:34, *23:44 = *23:35, *23:44
++-----	-----	-+-----	-----	*23:34, *23:37:01 = *23:35, *23:37:01
++-----	-----	-+-----	-----	*23:32, *23:34 = *23:32, *23:35
++-----	-----	-+-----	-----	*23:34, *23:36 = *23:35, *23:36
++-----	-----	-+-----	-----	*23:34, *23:41 = *23:35, *23:41
++-----	-----	-+-----	-----	*23:21, *23:37:01 = *23:21, *23:40 = *23:37:01, *23:40 = *23:40, *23:40 = *23:40, *23:50
++-----	-----	-+-----	-----	*23:21, *23:34 = *23:21, *23:35
++-----	-----	-+-----	-----	*23:20, *23:34 = *23:20, *23:35
++-----	-----	-+-----	-----	*23:19Q, *23:34 = *23:19Q, *23:35
++-----	-----	-+-----	-----	*23:19Q, *23:20 = *23:19Q, *23:45 = *23:20, *23:45 = *23:45, *23:45 = *23:45, *23:50
++-----	-----	-+-----	-----	*23:34, *23:40 = *23:35, *23:40
++-----	-----	-+-----	-----	*23:34, *23:45 = *23:35, *23:45
++-----	-----	-+-----	-----	*23:17, *23:34 = *23:17, *23:35
++-----	-----	-+-----	-----	*23:01:01, *23:01:01 = *23:01:01, *23:17 = *23:01:01, *23:50
++-----	-----	-+-----	-----	*23:17, *23:24 = *23:17, *23:30
++-----	-----	-+-----	-----	*23:05, *23:05 = *23:05, *23:17 = *23:05, *23:50
++-----	-----	-+-----	-----	*23:16, *23:16 = *23:16, *23:17 = *23:16, *23:50
++-----	-----	-+-----	-----	*23:15, *23:15 = *23:15, *23:17 = *23:15, *23:50
++-----	-----	-+-----	-----	*23:13, *23:13 = *23:13, *23:17 = *23:13, *23:50
++-----	-----	-+-----	-----	*23:14:02, *23:14:02 = *23:14:02, *23:17 = *23:14:02, *23:50
++-----	-----	-+-----	-----	*23:04, *23:17 = *23:04, *23:50
++-----	-----	-+-----	-----	*23:02, *23:17 = *23:02, *23:24 = *23:02, *23:30 = *23:02, *23:50 = *23:24, *23:30 = *23:24, *23:50 = *23:30, *23:30 = *23:30, *23:50
++-----	-----	-+-----	-----	*23:12, *23:12 = *23:12, *23:17 = *23:12, *23:50
++-----	-----	-+-----	-----	*23:11N, *23:11N = *23:11N, *23:17 = *23:11N, *23:50
++-----	-----	-+-----	-----	*23:10, *23:10 = *23:10, *23:17 = *23:10, *23:43 = *23:10, *23:50 = *23:43, *23:50
++-----	-----	-+-----	-----	*23:08N, *23:08N = *23:08N, *23:17 = *23:08N, *23:50
++-----	-----	-+-----	-----	*23:18, *23:18 = *23:18, *23:50
++-----	-----	-+-----	-----	*23:03:01, *23:17 = *23:03:01, *23:25 = *23:03:01, *23:50 = *23:25, *23:25 = *23:25, *23:50
++-----	-----	-+-----	-----	*23:16, *23:34 = *23:16, *23:35
++-----	-----	-+-----	-----	*23:15, *23:34 = *23:15, *23:35
++-----	-----	-+-----	-----	*23:15, *23:21 = *23:15, *23:49 = *23:21, *23:49 = *23:49, *23:49 = *23:49, *23:50
++-----	-----	-+-----	-----	*23:13, *23:34 = *23:13, *23:35

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++-----	-----+	-+-----	---+-----	*23:14:02, *23:34 = *23:14:02, *23:35
++-----	-----+	-+-----	-----+	*23:37:01, *23:47 = *23:47, *23:47 = *23:47, *23:50
++-----	-----+	-+-----	---+-----	*23:04, *23:34 = *23:04, *23:35
++-----	-----+	-+-----	-----+	*23:02, *23:46 = *23:24, *23:46 = *23:30, *23:46
++-----	-----+	-+-----	-----+	*23:02, *23:44 = *23:24, *23:44 = *23:30, *23:44
++-----	-----+	-+-----	-----+	*23:02, *23:37:01 = *23:24, *23:37:01 = *23:30, *23:37:01
++-----	-----+	-+-----	-----+	*23:02, *23:32 = *23:24, *23:32 = *23:30, *23:32
++-----	-----+	-+-----	---+-----	*23:02, *23:34 = *23:02, *23:35 = *23:24, *23:35 = *23:30, *23:34 = *23:30, *23:35
++-----	-----+	-+-----	-+-----	*23:02, *23:36 = *23:24, *23:36 = *23:30, *23:36
++-----	-----+	-+-----	+-----	*23:02, *23:41 = *23:24, *23:41 = *23:30, *23:41
++-----	-----+	-+-----	-----	*23:02, *23:21 = *23:21, *23:24 = *23:21, *23:30
++-----	-----+	-+-----	-----	*23:02, *23:20 = *23:20, *23:24 = *23:20, *23:30
++-----	-----+	-+-----	-----	*23:02, *23:19Q = *23:19Q, *23:24 = *23:19Q, *23:30
++-----	-----+	-+-----	---+-----	*23:12, *23:34 = *23:12, *23:35
++-----	-----+	-+-----	---+-----	*23:11N, *23:34 = *23:11N, *23:35
++-----	-----+	-+-----	-----+	*23:10, *23:46 = *23:43, *23:46
++-----	-----+	-+-----	-----+	*23:10, *23:44 = *23:43, *23:44
++-----	-----+	-+-----	-----+	*23:10, *23:37:01 = *23:37:01, *23:43
++-----	-----+	-+-----	---+-----	*23:10, *23:32 = *23:32, *23:43
++-----	-----+	-+-----	---+-----	*23:10, *23:34 = *23:10, *23:35 = *23:34, *23:43 = *23:35, *23:43
++-----	-----+	-+-----	-+-----	*23:10, *23:36 = *23:36, *23:43
++-----	-----+	-+-----	+-----	*23:10, *23:41 = *23:41, *23:43
++-----	-----+	-+-----	-----	*23:10, *23:21 = *23:21, *23:43
++-----	-----+	-+-----	-----	*23:10, *23:20 = *23:20, *23:43
++-----	-----+	-+-----	-----	*23:10, *23:19Q = *23:19Q, *23:43
++-----+	-----	-+-----	-+-----	*23:36, *23:48 = *23:48, *23:48 = *23:48, *23:50
++-----+	-----	-+-----	---+-----	*23:08N, *23:34 = *23:08N, *23:35
++-----	-----	-+-----	---+-----	*23:18, *23:34 = *23:18, *23:35
++-----	-----	-+-----	-----+	*23:03:01, *23:46 = *23:25, *23:46
++-----	-----	-+-----	-----+	*23:03:01, *23:44 = *23:25, *23:44
++-----	-----	-+-----	-----+	*23:03:01, *23:37:01 = *23:25, *23:37:01
++-----	-----	-+-----	---+-----	*23:03:01, *23:32 = *23:25, *23:32
++-----	-----	-+-----	---+-----	*23:03:01, *23:35 = *23:25, *23:34 = *23:25, *23:35
++-----	-----	-+-----	+-----	*23:03:01, *23:36 = *23:25, *23:36
++-----	-----	-+-----	-----	*23:03:01, *23:41 = *23:25, *23:41
++-----	-----	-+-----	-----	*23:03:01, *23:21 = *23:21, *23:25
++-----	-----	-+-----	-----	*23:03:01, *23:20 = *23:20, *23:25
++-----	-----	-+-----	-----	*23:03:01, *23:19Q = *23:19Q, *23:25
++-----	-----	-+-----	-----+	*23:15, *23:40 = *23:37:01, *23:49 = *23:40, *23:49
++-----	-----	-+-----	---+-----	*23:34, *23:49 = *23:35, *23:49
++-----	-----	-+-----	---+-----	*23:34, *23:47 = *23:35, *23:47
++-----	-----	-+-----	---+-----	*23:21, *23:47 = *23:40, *23:47
++-----	-----	-+-----	---+-----	*23:02, *23:40 = *23:24, *23:40 = *23:30, *23:40
++-----	-----	-+-----	---+-----	*23:02, *23:45 = *23:24, *23:45 = *23:30, *23:45
++-----	-----	-+-----	---+-----	*23:10, *23:40 = *23:40, *23:43
++-----	-----	-+-----	-----	*23:10, *23:45 = *23:43, *23:45
++-----+	-----	-+-----	-+-----	*23:34, *23:48 = *23:35, *23:48
++-----	-----	-+-----	-----+	*23:03:01, *23:40 = *23:25, *23:40
++-----	-----	-+-----	-----	*23:03:01, *23:45 = *23:25, *23:45
++-----	-----	-+-----	-----+	*23:01:01, *23:38N = *23:17, *23:38N = *23:38N, *23:38N = *23:38N, *23:50
++-----	-----	-+-----	---+-----	*23:01:01, *23:34 = *23:01:01, *23:35
++-----	-----	-+-----	-----	*23:01:01, *23:02 = *23:01:01, *23:24 = *23:01:01, *23:30
++-----	-----	-+-----	-----	*23:01:01, *23:10 = *23:01:01, *23:43
++-----	-----	-+-----	---+-----	*23:05, *23:34 = *23:05, *23:35
++-----	-----	-+-----	-----	*23:05, *23:24 = *23:05, *23:30
++-----	-----	-+-----	-----	*23:05, *23:10 = *23:05, *23:43
++-----+	-----	-+-----	-----	*23:01:01, *23:09 = *23:09, *23:09 = *23:09, *23:17 = *23:09, *23:50
++-----+	-----	-+-----	-----	*23:01:01, *23:07N = *23:07N, *23:07N = *23:07N, *23:17 = *23:07N, *23:50
++-----+	-----	-+-----	-----	*23:01:01, *23:06 = *23:06, *23:06 = *23:06, *23:17 = *23:06, *23:50
++-----	-----	-+-----	-----	*23:01:01, *23:03:01 = *23:01:01, *23:25
++-----	-----+	-+-----	-----	*23:14:01, *23:14:01 = *23:14:01, *23:14:02 = *23:14:01, *23:17 = *23:14:01, *23:50



101.421-06 – including Taq polymerase, IFU-01
101.421-06u – without Taq polymerase, IFU-02

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++-----	-----+	-+++-	-----	*23:02, *23:16 = *23:16, *23:24 = *23:16, *23:30
++-----	-----+	-+++-	-----	*23:02, *23:15 = *23:15, *23:24 = *23:15, *23:30
++-----	-----+	-+++-	-----	*23:02, *23:13 = *23:13, *23:24 = *23:13, *23:30
++-----	-----++	-+++-	-----	*23:02, *23:14:02 = *23:14:02, *23:24 = *23:14:02, *23:30
++-----	-----++	-+++-	-----	*23:02, *23:04 = *23:04, *23:24 = *23:04, *23:30
++-----	-----++	-+++-	-----	*23:02, *23:12 = *23:12, *23:24 = *23:12, *23:30
++-----	-----++	-+++-	-----	*23:02, *23:11N = *23:11N, *23:24 = *23:11N, *23:30
++-----	-----+	-+++-	-----	*23:10, *23:16 = *23:16, *23:43
++-----	-----+	-+++-	-----	*23:10, *23:15 = *23:15, *23:43
++-----	-----+	-+++-	-----	*23:10, *23:13 = *23:13, *23:43
++-----	-----++	-+++-	-----	*23:10, *23:14:02 = *23:14:02, *23:43
++-----	-----++	-+++-	-----	*23:02, *23:10 = *23:02, *23:43 = *23:10, *23:24 = *23:10, *23:30 = *23:24, *23:43 = *23:30, *23:43
++-----	-----++	-+++-	-----	*23:10, *23:12 = *23:12, *23:43
++-----	-----++	-+++-	-----	*23:10, *23:11N = *23:11N, *23:43
++-----+	-----+	-+++-	-----	*23:02, *23:08N = *23:08N, *23:24 = *23:08N, *23:30
++-----+	-----+	-+++-	-----	*23:08N, *23:10 = *23:08N, *23:43
++++-----	-----+	-+++-	-----	*23:02, *23:18 = *23:18, *23:24 = *23:18, *23:30
++++-----	-----+	-+++-	-----	*23:10, *23:18 = *23:18, *23:43
++++-----	-----+	-+++-	-----	*23:03:01, *23:16 = *23:16, *23:25
++++-----	-----+	-+++-	-----	*23:03:01, *23:15 = *23:15, *23:25
++++-----	-----++	-+++-	-----	*23:03:01, *23:13 = *23:13, *23:25
++++-----	-----++	-+++-	-----	*23:03:01, *23:14:02 = *23:14:02, *23:25
++++-----	-----++	-+++-	-----	*23:02, *23:03:01 = *23:02, *23:25 = *23:03:01, *23:30 = *23:24, *23:25 = *23:25, *23:30
++++-----	-----++	-+++-	-----	*23:03:01, *23:12 = *23:12, *23:25
++++-----	-----++	-+++-	-----	*23:03:01, *23:11N = *23:11N, *23:25
++++-----	-----++	-+++-	-----	*23:03:01, *23:10 = *23:10, *23:25 = *23:25, *23:43
++++-----+	-----++	-+++-	-----	*23:03:01, *23:08N = *23:08N, *23:25
++++-----	-----++	-+++-	-----	*23:03:01, *23:18 = *23:18, *23:25
++++-----	-----++	-+++-	-----	*23:14:01, *23:37:01 = *23:14:01, *23:47 = *23:14:02, *23:47
++++-----	-----++	-+++-	-----	*23:14:01, *23:34 = *23:14:01, *23:35
++++-----	-----++	-+++-	-----	*23:02, *23:49 = *23:24, *23:49 = *23:30, *23:49
++++-----	-----++	-+++-	-----	*23:02, *23:47 = *23:24, *23:47 = *23:30, *23:47
++++-----	-----++	-+++-	-----	*23:10, *23:49 = *23:43, *23:49
++++-----	-----++	-+++-	-----	*23:10, *23:47 = *23:43, *23:47
++++-----+	-----++	-+++-	-----	*23:02, *23:48 = *23:24, *23:48 = *23:30, *23:48
++++-----+	-----++	-+++-	-----	*23:10, *23:48 = *23:43, *23:48
++++-----	-----++	-+++-	-----	*23:03:01, *23:49 = *23:25, *23:49
++++-----	-----++	-+++-	-----	*23:03:01, *23:47 = *23:25, *23:47
++++-----+	-----++	-+++-	-----	*23:03:01, *23:48 = *23:25, *23:48
++++-----	-----++	-+++-	-----	*23:34, *23:38N = *23:35, *23:38N
++++-----	-----++	-+++-	-----	*23:02, *23:38N = *23:24, *23:38N = *23:30, *23:38N
++++-----	-----++	-+++-	-----	*23:10, *23:38N = *23:38N, *23:43
++++-----+	-----++	-+++-	-----	*23:09, *23:34 = *23:09, *23:35
++++-----+	-----++	-+++-	-----	*23:01:01, *23:48 = *23:09, *23:36 = *23:09, *23:48
++++-----+	-----++	-+++-	-----	*23:02, *23:09 = *23:09, *23:24 = *23:09, *23:30
++++-----+	-----++	-+++-	-----	*23:09, *23:10 = *23:09, *23:43
++++-----+	-----++	-+++-	-----	*23:07N, *23:34 = *23:07N, *23:35
++++-----	-----++	-+++-	-----	*23:02, *23:07N = *23:07N, *23:24 = *23:07N, *23:30
++++-----	-----++	-+++-	-----	*23:07N, *23:10 = *23:07N, *23:43
++++-----	-----++	-+++-	-----	*23:06, *23:34 = *23:06, *23:35
++++-----	-----++	-+++-	-----	*23:02, *23:06 = *23:06, *23:24 = *23:06, *23:30
++++-----	-----++	-+++-	-----	*23:06, *23:10 = *23:06, *23:43
++++-----	-----++	-+++-	-----	*23:03:01, *23:38N = *23:25, *23:38N
++++-----+	-----++	-+++-	-----	*23:03:01, *23:09 = *23:09, *23:25
++++-----	-----++	-+++-	-----	*23:03:01, *23:07N = *23:07N, *23:25
++++-----	-----++	-+++-	-----	*23:03:01, *23:06 = *23:06, *23:25
++++-----	-----++	-+++-	-----	*23:02, *23:14:01 = *23:14:01, *23:24 = *23:14:01, *23:30
++++-----	-----++	-+++-	-----	*23:10, *23:14:01 = *23:14:01, *23:43
++++-----	-----++	-+++-	-----	*23:03:01, *23:14:01 = *23:14:01, *23:25



101.421-06 – including *Taq* polymerase, IFU-01
101.421-06u – without *Taq* polymerase, IFU-02

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Lot-specific Information

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*23:01:01 = *23:01:01-23:01:11 and 23:55

*23:03:01 = *23:03:01-23:03:02

*23:08N = *23:08N and 23:22

*23:09 = *23:09 and 23:26

*23:10 = *23:10 and 23:23

*23:13 = *23:13 and 23:33

*23:15 = *23:15 and 23:27

*23:16 = *23:16 and 23:29

*23:18 = *23:18 and 23:28

*23:19Q = *23:19Q, 23:31 and 23:53

*23:36 = *23:36 and 23:39

*23:37:01 = *23:37:01-23:37:02

*23:41 = *23:41 and 23:42

*23:50 = *23:50-23:52 and 23:54

101.421-06 – including *Taq* polymerase, IFU-01
101.421-06u – without *Taq* polymerase, IFU-02

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Lot-specific Information

www.olerup-ssp.com**SPECIFICITY TABLE****HLA-A*23 SSP subtyping**

Specificities and sizes of the PCR products of the 32 primer mixes used for
HLA-A*23 SSP subtyping

Primer Mix	Size of spec. PCR product ¹	Size of control band ²	Amplified HLA-A*23 alleles ³	Other amplified HLA Class I alleles ⁴
1⁶	210 bp	800 bp	*23:01:01-23:01:11, 23:03:01-23:55	*02:17:01-02:17:02, 02:108, 02:110, 02:268, 02:300, 02:303, 24:13:01-24:13:02, 24:18, 24:24, 24:94, 24:188, 24:207, 29:07, 31:29, B*18:27
2	160 bp	1070 bp	*23:01:01-23:02, 23:05-23:42, 23:44-23:55	*02:19, 02:36-02:37, 02:54, 02:255, 24:02:01:01-24:02:41, 24:02:43-24:02:63, 24:04-24:09N, 24:11N, 24:13:01-24:15, 24:17, 24:19-24:20, 24:24-24:32, 24:34-24:64, 24:66-24:74, 24:76-24:93, 24:95-24:109, 24:111-24:124, 24:126-24:137, 24:139-24:157, 24:159-24:166, 24:168-24:203, 24:205-24:206, 24:209, 24:212-24:214, 24:216-24:218, 24:220-24:222N, 33:19, 68:26, 68:65
3^{5,8}	125 bp, 270 bp	800 bp	*23:03:01-23:03:02, 23:25	*24:21:01, 24:208, 29:07, 31:29, B*18:27
4^{5,9}	90 bp, 200 bp	1070 bp	*23:18, 23:28	*24:77
5	230 bp	800 bp	*23:06	*31:36
6	470 bp	1070 bp	*23:07N	*01:04N, 03:21N, 11:21N, 24:11N
7^{5,10}	95 bp, 205 bp	800 bp	*23:08N, 23:22	*02:82N
8^{7,11}	135 bp, 170 bp, 215 bp	1070 bp	*23:09, 23:26, 23:48	*01:02, 01:20, 24:129
9	235 bp	1070 bp	*23:05	*24:25
10¹²	135 bp, 235 bp	800 bp	*23:10, 23:23, 23:43	*24:10:01 ^w -24:10:02 ^w , 24:46, 24:210 ^w , B*18:27
11	200 bp	800 bp	*23:11N	

101.421-06 – including *Taq* polymerase, IFU-01
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Lot No.: 68R	Lot-specific Information			www.olerup-ssp.com
12	190 bp	1070 bp	*23:12	*24:30, 24:42, 25:11, 32:08, B*13:39^w, 38:16^w, 40:13^w, 40:19^w, 40:37^w, 40:109^w, 44:02:19^w, 44:05:03^w, 44:18^w, 44:25^w, 44:50^w, 44:75^w, 44:95^w, 44:152^w, 49:01:01^w-49:01:04^w, 49:04^w-49:24^w, 51:103^w, 51:119^w, 57:51^w
13^{5,13}	90 bp, 210 bp	800 bp	*23:02, 23:24, 23:30	*24:06, 24:87, 24:138, 24:167
14	245 bp	1070 bp	*23:04	*02:17:01-02:17:02, 02:108, 02:110, 02:268, 02:300, 02:303, 24:03:01-24:03:02, 24:10:01- 24:10:02, 24:18, 24:22, 24:33, 24:94, 24:125, 24:138, 24:167, 24:204, 24:207, 24:210, 29:07, 31:29, B*18:27
15¹⁴	210 bp, 290 bp	1070 bp	*23:14:01, 23:47	*24:13:02, B*18:27
16¹⁵	175 bp, 205 bp	800 bp	*23:14:01-23:14:02	*02:17:01 ^w -02:17:02 ^w , 24:02:01:01-24:11N, 24:13:01- 24:13:02, 24:17-24:50, 24:54- 24:56, 24:58-24:63, 24:66-24:91, 24:93, 24:95-24:113, 24:115- 24:137, 24:139-24:187, 24:189- 24:210, 24:212-24:214, 24:216- 24:221, 26:16, 33:19, 68:45
17^{5,16}	125 bp, 225 bp	1070 bp	*23:13, 23:33	*03:72, 11:88, 24:07, 24:19, 24:24, 24:131, 29:37, 30:01:01- 30:01:07, 30:11:01-30:11:02, 30:14L-30:20, 30:23-30:26, 30:30-30:31, 30:35-30:43, 30:48- 30:49, 30:52-30:54, 30:56, 30:58- 30:60, 30:62-30:63, 30:65, 68:45
18⁵	110 bp	1070 bp	*23:01:01- 23:01:11, 23:02 ^w , 23:04-23:13, 23:14:01 ^w , 23:14:02-23:23, 23:25-23:33, 23:35-23:55	*02:40:01, 02:40:02 ^w , 02:51, 02:130, 24:24, 31:67-31:68, 32:28, 33:32:01, 68:51 ^w
19^{5,17}	115 bp, 260 bp	800 bp	*23:15, 23:27, 23:49	*30:06
20¹⁸	130 bp, 230 bp	800 bp	*23:16, 23:29	*24:128

101.421-06 – including *Taq* polymerase, IFU-01
 101.421-06u – without *Taq* polymerase, IFU-02

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Lot No.: 68R		Lot-specific Information		www.olerup-ssp.com
21⁵	90 bp	800 bp	*23:01:01- 23:01:11, 23:02 [?] - 23:04 [?] , 23:06- 23:07N, 23:08N [?] , 23:09, 23:10 [?] - 23:16 [?] , 23:18 [?] - 23:25 [?] , 23:26, 23:27 [?] -23:37:02 [?] , 23:38N, 23:39 [?] - 23:54 [?] , 23:55	
22^{5,6,19}	90 bp, 290 bp	1070 bp	*23:19Q, 23:31, 23:45, 23:53	*24:17, 24:41, 24:62, 24:106, 24:208, 29:07, 31:29
23^{5,7,20}	80 bp, 170 bp	1070 bp	*23:20, 23:45	*02:41, 02:80, 02:117, 02:289, 02:304, 24:62, 26:10, 31:67- 31:68, 32:28, 33:32:01
24^{5,21}	105 bp, 180 bp, 240 bp	800 bp	*23:21, 23:40, 23:49	*30:06
25^{5,22}	95 bp, 205 bp	800 bp	*23:41-23:42	*02:221, 29:15
26^{6,23}	145 bp, 170 bp, 245 bp	1070 bp	*23:36, 23:39, 23:48	*24:32, 30:22, 32:07
27²⁴	205 bp, 285 bp	1070 bp	*23:34-23:35	
28	270 bp	1070 bp	*23:32	
29²⁵	200 bp, 240 bp, 290 bp	1070 bp	*23:37:01- 23:37:02, 23:40, 23:47	
30	245 bp	1070 bp	*23:38N	*24:61
31	185 bp	1070 bp	*23:44	
32	195 bp	1070 bp	*23:46	*24:66

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*23 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.

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.

101.421-06 – including *Taq* polymerase, IFU-01
 101.421-06u – without *Taq* polymerase, IFU-02

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Lot No.: 68R**Lot-specific Information****www.olerup-ssp.com**

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*23 subtyping.

In addition, wells number 3, 5, 7, 10, 11, 13, 16, 19 to 21, 24 and 25 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*23 alleles will be amplified by primer mixes 1 to 10, 12 to 20, 22 to 26, 30 and 32. In addition, the B*18:27 allele will be amplified by primer mixes 1, 3, 10, 14 and 15, and primer mix 12 will weakly amplify the B*13:39, 38:16, 40:13, 40:19, 40:37, 40:109, 44:02:19, 44:05:03, 44:18, 44:25, 44:50, 44:75, 44:95, 44:152, 49:01:01-49:01:04, 49:04-49:24, 51:103, 51:119 and 57:51 alleles.

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

⁶Primer mixes 1, 22 and 26 may give rise to a lower yield of HLA-specific PCR product than the other A*23 primer mixes.

⁷Primer mix 8 and 23 may have tendencies of unspecific amplifications.

⁸Primer mix 3: Specific PCR fragment of 125 bp in the A*23:03:01-23:03:02 and in the A*24:21:01, 24:208, 29:07 and 31:29 and the B*18:27 alleles. Specific PCR fragment of 270 bp in the A*23:25 allele.

⁹Primer mix 4: Specific PCR fragment of 90 bp in the A*23:18 allele. Specific PCR fragment of 200 bp in the A*23:28 and the A*24:77 alleles.

¹⁰Primer mix 7: Specific PCR fragment of 95 bp in the A*23:08N and the A*02:82N alleles. Specific PCR fragment of 205 bp in the A*23:22 allele.

¹¹Primer mix 8: Specific PCR fragment of 135 bp in the A*23:26 allele. Specific PCR fragment of 170 bp in the A*23:48 allele. Specific PCR fragment of 215 bp in the A*23:09 and the A*01:02, 01:20 and 24:129 alleles.

¹²Primer mix 10: Specific PCR fragment of 135 bp in the A*23:23 and in the B*18:27 alleles. Specific PCR fragment of 235 bp in the A*23:10 and 23:43 and the A*24:10:01^w-24:10:02^w, 24:46 and 24:210^w alleles.

¹³Primer mix 13: Specific PCR fragment of 90 bp in the A*23:30 allele. Specific PCR fragment of 210 bp in the A*23:02 and 23:24 and the A* 24:06, 24:87, 24:138 and 24:167 alleles.

¹⁴Primer mix 15: Specific PCR fragment of 210 bp in the A*23:14:01 and in the A*24:13:02 and the B*18:27 alleles. Specific PCR fragment of 290 bp in the A*23:47 allele.

¹⁵Primer mix 16: Specific PCR fragment of 175 bp in the A*23:14:01-23:14:02 and the A*02:17:01^w-02:17:02^w, 24:02:16, 24:06, 24:13:01-24:13:02, 24:18, 24:22, 24:54, 24:87, 24:91, 24:107, 24:133, 24:167 and 24:207 alleles. Specific PCR fragment of 205 bp in the A*24:05, 24:24, 24:130, 24:168, 24:194, 24:199, 26:16 and 68:45 alleles. Specific PCR fragment of 175 and 205 bp in the A*24:02:01:01-24:02:15, 24:02:17-24:04, 24:07-24:11N, 24:17, 24:19-24:21:02, 24:23, 24:25-24:50, 24:55-24:56, 24:58-24:63, 24:66-24:86N, 24:88-24:90N, 24:93, 24:95-24:106, 24:108-24:113, 24:115-24:129, 24:131-24:132N, 24:134-24:137, 24:139-24:166, 24:169-24:187, 24:189-24:193, 24:195-24:198, 24:200-24:206, 24:208-24:210, 24:212-24:214, 24:216-24:221 and 33:19 alleles. Both fragments may not always be visible.

¹⁶Primer mix 17: Specific PCR fragment of 125 bp in the A*23:33 allele. Specific PCR fragment of 225 bp in the A*23:13 and the A*03:72, 11:88, 24:07, 24:19, 24:24, 24:131, 29:37, 30:01:01-30:01:07, 30:11:01-30:11:02, 30:14L-30:20, 30:23-30:26, 30:30-30:31, 30:35-30:43, 30:48-30:49, 30:52-30:54, 30:56, 30:58-30:60, 30:62-30:63, 30:65 and 68:45 alleles.

101.421-06 – including *Taq* polymerase, IFU-01
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¹⁷Primer mix 19: Specific PCR fragment of 115 bp in the A*23:15 and 23:49 and the A*30:06 alleles. Specific PCR fragment of 260 bp in the A*23:27 allele.

¹⁸Primer mix 20: Specific PCR fragment of 130 bp in the A*23:29 and in the A* 24:128 alleles. Specific PCR fragment of 230 bp in the A*23:16 allele.

¹⁹Primer mix 22: Specific PCR fragment of 90 bp in the A*23:31, 23:45 and 23:53 and the A*24:17, 24:41, 24:62, 24:106, 24:208, 29:07 and 31:29 alleles. Specific PCR fragment of 290 bp in the A*23:19Q allele.

²⁰Primer mix 23: Specific PCR fragment of 80 bp in the A*23:45 and the A*02:41, 02:80, 02:117, 02:289, 02:304, 24:62, 26:10, 31:67-31:68, 32:28 and 33:32:01 alleles. Specific PCR fragment of 170 bp in the A*23:20 allele.

²¹Primer mix 24: Specific PCR fragment of 105 bp in the A*23:49 and the A*30:06 alleles. Specific PCR fragment of 180 bp in the A*23:21 allele. Specific PCR fragment of 240 bp in the A*23:40 allele.

²²Primer mix 25: Specific PCR fragment of 95 bp in the A*23:41 and the A*02:221 and 29:15 alleles. Specific PCR fragment of 205 bp in the A*23:42 allele.

²³Primer mix 26: Specific PCR fragment of 145 bp in the A*23:39 and the A*30:22 alleles. Specific PCR fragment of 170 bp in the A*23:48 allele. Specific PCR fragment of 245 bp in the A*23:36 and the A*24:32 and 32:07 alleles.

²⁴Primer mix 27: Specific PCR fragment of 205 bp in the A*23:34 allele. Specific PCR fragment of 285 bp in the A*23:35 allele.

²⁵Primer mix 29: Specific PCR fragment of 200 bp in the A*23:37:01-23:37:02 alleles. Specific PCR fragment of 240 bp in the A*23:40 allele. Specific PCR fragment of 290 bp in the A*23:47 allele.

'w', may be weakly amplified.

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

101.421-06 – including *Taq* polymerase, IFU-01
 101.421-06u – without *Taq* polymerase, IFU-02

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Lot-specific Information

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INTERPRETATION TABLE																
HLA-A*23 SSP subtyping																
Amplification patterns of the A*23:01 to A*23:55 alleles																
	Well ¹⁵															
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Length of spec.	210	160	125	90	230	470	95	135	235	135	200	190	90	245	210	175
PCR product(s)			270	200			205	170		235			210		290	205
								215								
Length of int. pos. control ¹	800	1070	800	1070	800	1070	800	1070	1070	800	800	1070	800	1070	1070	800
5'-primer(s) ²	368	453	368	98	144	3 ^d	98	98	28	368	160	144	368	368	368	98
	5'-gTT 3'	5'-AAA 3'	5'-gTT 3'	5'-CTC 3'	5'-gCC 3'	5'-ATA 3'	5'-CTC 3'	5'-CTC 3'	5'-TCg 3'	5'-gTT 3'	5'-ACg 3'	5'-gCC 3'	5'-gTT 3'	5'-gTT 3'	5'-gTT 3'	5'-CTC 3'
				678			564									368
				5'-AgA 3'			5'-TgA 3'									5'-gTT 3'
3'-primer(s) ³	539	570	453	256	331	621	262	193	92	463	317	292	419	570	538	259
	5'-TCA 3'	5'-CCg 3'	5'-TCg 3'	5'-CTg 3'	5'-CTC 3'	5'-ggg 3'	5'-TgC 3'	5'-CgA 3'	5'-AAC 3'	5'-gCT 3'	5'-ggA 3'	5'-gTg 3'	5'-CgC 3'	5'-CAC 3'	5'-CAG 3'	5'-gTT 3'
			595	728			616	227		559			530		616	502
			5'-CCg 3'	5'-CCT 3'			5'-CgT 3'	5'-CTg 3'		5'-CCg 3'			5'-CCA 3'		5'-CgC 3'	5'-CTT 3'
								271		571			539			539
								5'-CAT 3'		5'-CCT 3'			5'-TCC 3'			5'-TCT 3'
Well No.	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
HLA-A allele ⁴																
*23:01:01-23:01:11, 23:55	1	2														
*23:02		2											13			
*23:03:01-23:03:02	1		3													
*23:04	1													14		
*23:05	1	2							9							
*23:06	1	2			5											
*23:07N	1	2				6										
Well No.	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16

101.421-06 – including *Taq* polymerase, IFU-01
 101.421-06u – without *Taq* polymerase, IFU-02

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Lot No.: **68R**

Lot-specific Information

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INTERPRETATION TABLE																
HLA-A*23 SSP subtyping																
Amplification patterns of the A*23:01 to A*23:55 alleles																
Well ¹⁵																
17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	
125	110	115	130	90	90	80	105	95	145	205	270	200	245	185	195	Length of spec. PCR product(s)
225		260	230		290	170	180	205	170	285		240				Length of int. pos. control ¹
							240		245			290				Length of int. pos. control ¹
1070	1070	800	800	800	1070	1070	800	800	1070	1070	1070	1070	1070	1070	1070	Length of int. pos. control ¹
98	453	98	228	920	368	414	98	376	98	368	90	98	98	395	418	5'-primer(s) ²
5'-CTC ^{3'}	5'-AAA ^{3'}	5'-CTC ^{3'}	5'-ATg ^{3'}	5'-CCA ^{3'}	5'-gTT ^{3'}	5'-CAG ^{3'}	5'-CTC ^{3'}	5'-gCT ^{3'}	5'-CTC ^{3'}	5'-gTT ^{3'}	5'-AgT ^{3'}	5'-CTC ^{3'}	5'-CTC ^{3'}	5'-gCA ^{3'}	5'-AgC ^{3'}	5'-primer(s) ²
		493	379			678		484				368				5'-primer(s) ²
		5'-CTg ^{3'}	5'-ACA ^{3'}			5'-AgA ^{3'}		5'-ACg ^{3'}				5'-gTT ^{3'}				5'-primer(s) ²
181	524	163	317	968	418	453	163	538	200	534	317	255	303	538	570	3'-primer(s) ³
5'-gTA ^{3'}	5'-CAC ^{3'}	5'-CgC ^{3'}	5'-ggA ^{3'}	5'-CAG ^{3'}	5'-gTC ^{3'}	5'-TCT ^{3'}	5'-CgC ^{3'}	5'-CAA ^{3'}	5'-TCC ^{3'}	5'-CgT ^{3'}	5'-ggA ^{3'}	5'-TCC ^{3'}	5'-AgT ^{3'}	5'-CAA ^{3'}	5'-CCg ^{3'}	3'-primer(s) ³
282		316	570		619	806	238		227	614		255				3'-primer(s) ³
5'-gAC ^{3'}		5'-gAA ^{3'}	5'-CCg ^{3'}		5'-gTT ^{3'}	5'-CTA ^{3'}	5'-CCT ^{3'}		5'-CTg ^{3'}	5'-Tgg ^{3'}		5'-TCT ^{3'}				3'-primer(s) ³
282		570					299		302			299				3'-primer(s) ³
5'-gAC ^{3'}		5'-CCg ^{3'}					5'-TCg ^{3'}		5'-ggC ^{3'}			5'-TCg ^{3'}				3'-primer(s) ³
												616				3'-primer(s) ³
												5'-CgC ^{3'}				3'-primer(s) ³
17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	Well No.
																HLA-A allele ⁴
	18			21												*23:01:01-23:01:11, 23:55
	w			?												*23:02
				?												*23:03:01-23:03:02
	18			?												*23:04
	18															*23:05
	18			21												*23:06
	18			21												*23:07N
17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	Well No.



101.421-06 – including *Taq* polymerase, IFU-01
 101.421-06u – without *Taq* polymerase, IFU-02

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Length of spec.	210	160	125	90	230	470	95	135	235	135	200	190	90	245	210	175
PCR product(s)			270	200			205	170		235			210		290	205
							215									
Well No.	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
*23:08N, 23:22 ⁵	1	2					7									
*23:09, 23:26 ⁶	1	2						8								
*23:10, 23:23 ⁷	1	2								10						
*23:11N	1	2									11					
*23:12	1	2										12				
*23:13, 23:33 ⁸	1	2														
*23:14:01	1	2													15	16
*23:14:02	1	2														16
*23:15, 23:27 ⁹	1	2														
*23:16, 23:29 ¹⁰	1	2														
*23:17	1	2														
*23:18, 23:28 ¹¹	1	2		4												
*23:19Q, 23:31, 23:53 ¹²	1	2														
*23:20	1	2														
*23:21	1	2														
*23:24	1	2											13			
*23:25	1	2	3													
*23:30	1	2											13			
*23:32	1	2														
*23:34	1	2														
*23:35	1	2														
*23:36, 23:39 ¹³	1	2														
*23:37:01-23:37:02	1	2														
*23:38N	1	2														
*23:40	1	2														
*23:41, 23:42 ¹⁴	1	2														
*23:43	1									10						
*23:44	1	2														
*23:45	1	2														
*23:46	1	2														
*23:47	1	2													15	
*23:48	1	2						8								
*23:49	1	2														
*23:50-23:52, 23:54	1	2														
*01:02, 01:20								8								
*01:04N, 03:21N, 11:21N						6										
Well No.	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16

101.421-06 – including *Taq* polymerase, IFU-01
 101.421-06u – without *Taq* polymerase, IFU-02

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Lot No.: **68R**

Lot-specific Information

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125	110	115	130	90	90	80	105	95	145	205	270	200	245	185	195	Length of spec. PCR product(s)
225		260	230		290	170	180	205	170	285		240				
							240		245			290				
17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	Well No.
	18			?												*23:08N, 23:22 ⁵
	18			21												*23:09, 23:26 ⁶
	18			?												*23:10, 23:23 ⁷
	18			?												*23:11N
	18			?												*23:12
17	18			?												*23:13, 23:33 ⁸
	w			?												*23:14:01
	18			?												*23:14:02
	18	19		?												*23:15, 23:27 ⁹
	18		20	?												*23:16, 23:29 ¹⁰
	18															*23:17
	18			?												*23:18, 23:28 ¹¹
	18			?	22											*23:19Q, 23:31, 23:53 ¹²
	18			?		23										*23:20
	18			?			24									*23:21
				?												*23:24
	18			?												*23:25
	18			?												*23:30
	18			?							28					*23:32
				?						27						*23:34
	18			?						27						*23:35
	18			?					26							*23:36, 23:39 ¹³
	18			?								29				*23:37:01-23:37:02
	18			21									30			*23:38N
	18			?			24					29				*23:40
	18			?				25								*23:41, 23:42 ¹⁴
	18			?												*23:43
	18			?										31		*23:44
	18			?	22	23										*23:45
	18			?											32	*23:46
	18			?								29				*23:47
	18			?					26							*23:48
	18	19		?			24									*23:49
	18			?												*23:50-23:52, 23:54
																*01:02, 01:20
																*01:04N, 03:21N, 11:21N
17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	Well No.

101.421-06 – including *Taq* polymerase, IFU-01
 101.421-06u – without *Taq* polymerase, IFU-02

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Lot No.: **68R**

Lot-specific Information

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Length of spec.	210	160	125	90	230	470	95	135	235	135	200	190	90	245	210	175
PCR product(s)			270	200			205	170		235			210		290	205
							215									
Well No.	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
*02:17:01-02:17:02	1													14		w
*02:19, 02:36-02:37, 02:54, 02:255, 24:14-24:15, 24:51- 24:53, 24:57, 24:64, 24:92, 24:114, 24:222N, 68:26, 68:65		2														
*02:40:01, 02:51, 02:130																
*02:40:02, 68:51																
*02:41, 02:80, 02:117, 02:289, 02:304, 26:10																
*02:82N							7									
*02:108, 02:110, 02:268, 02:300, 02:303, 24:94	1													14		
*02:221, 29:15																
*03:72, 11:88, 29:37, 30:01:01- 30:01:07, 30:11:01-30:11:02, 30:14L-30:20, 30:23-30:26, 30:30- 30:31, 30:35-30:43, 30:48-30:49, 30:52-30:54, 30:56, 30:58-30:60, 30:62-30:63, 30:65																
*24:02:01:01-24:02:41, 24:02:43- 24:02:63, 24:04-24:05, 24:08- 24:09N, 24:20, 24:26-24:29, 24:31, 24:34-24:40N, 24:43- 24:45N, 24:47-24:50, 24:54- 24:56, 24:58-24:60N, 24:63, 24:67-24:74, 24:76, 24:78- 24:86N, 24:88-24:91, 24:93, 24:95-24:105, 24:107-24:109, 24:111-24:113, 24:115-24:124, 24:126-24:127, 24:130, 24:132N- 24:137, 24:139-24:157, 24:159- 24:166, 24:168-24:187, 24:189- 24:203, 24:205-24:206, 24:209, 24:212-24:214, 24:216-24:218, 24:220-24:221, 33:19		2														16
*24:02:42, 24:21:02, 24:23, 24:75, 24:110, 24:158N, 24:219, 26:16																16
*24:03:01-24:03:02, 24:22, 24:33, 24:125, 24:204														14		16
Well No.	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16

101.421-06 – including *Taq* polymerase, IFU-01
 101.421-06u – without *Taq* polymerase, IFU-02

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Lot No.: **68R**

Lot-specific Information

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125	110	115	130	90	90	80	105	95	145	205	270	200	245	185	195	Length of spec. PCR product(s)
17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	Well No.
																*02:17:01-02:17:02
																*02:19, 02:36-02:37, 02:54, 02:255, 24:14-24:15, 24:51- 24:53, 24:57, 24:64, 24:92, 24:114, 24:222N, 68:26, 68:65
	18															*02:40:01, 02:51, 02:130
	w															*02:40:02, 68:51
						23										*02:41, 02:80, 02:117, 02:289, 02:304, 26:10
																*02:82N
																*02:108, 02:110, 02:268, 02:300, 02:303, 24:94
								25								*02:221, 29:15
17																*03:72, 11:88, 29:37, 30:01:01- 30:01:07, 30:11:01-30:11:02, 30:14L-30:20, 30:23-30:26, 30:30- 30:31, 30:35-30:43, 30:48-30:49, 30:52-30:54, 30:56, 30:58-30:60, 30:62-30:63, 30:65
																*24:02:01:01-24:02:41, 24:02:43- 24:02:63, 24:04-24:05, 24:08- 24:09N, 24:20, 24:26-24:29, 24:31, 24:34-24:40N, 24:43- 24:45N, 24:47-24:50, 24:54- 24:56, 24:58-24:60N, 24:63, 24:67-24:74, 24:76, 24:78- 24:86N, 24:88-24:91, 24:93, 24:95-24:105, 24:107-24:109, 24:111-24:113, 24:115-24:124, 24:126-24:127, 24:130, 24:132N- 24:137, 24:139-24:157, 24:159- 24:166, 24:168-24:187, 24:189- 24:203, 24:205-24:206, 24:209, 24:212-24:214, 24:216-24:218, 24:220-24:221, 33:19
																*24:02:42, 24:21:02, 24:23, 24:75, 24:110, 24:158N, 24:219, 26:16
																*24:03:01-24:03:02, 24:22, 24:33, 24:125, 24:204
17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	Well No.

101.421-06 – including *Taq* polymerase, IFU-01
 101.421-06u – without *Taq* polymerase, IFU-02

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Lot No.: **68R**

Lot-specific Information

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Length of spec.	210	160	125	90	230	470	95	135	235	135	200	190	90	245	210	175
PCR product(s)			270	200			205	170		235			210		290	205
								215								
Well No.	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
*24:06, 24:87		2											13			16
*24:07, 24:19, 24:131		2														16
*24:10:01-24:10:02, 24:210										w				14		16
*24:11N		2				6										16
*24:13:01	1	2														16
*24:13:02	1	2													15	16
*24:17, 24:41, 24:106		2														16
*24:18, 24:207	1													14		16
*24:21:01			3													16
*24:24	1	2														16
*24:25		2							9							16
*24:30, 24:42		2										12				16
*24:32		2														16
*24:46		2								10						16
*24:61		2														16
*24:62		2														16
*24:66		2														16
*24:77		2		4												16
*24:128		2														16
*24:129		2						8								16
*24:138													13	14		
*24:167													13	14		16
*24:188	1	2														
*24:208			3													16
*25:11, 32:08												12				
*29:07, 31:29	1		3											14		
*30:06																
*30:22, 32:07																
*31:36					5											
*31:67-31:68, 32:28, 33:32:01																
*68:45																16
<i>B*13:39, B*38:16, B*40:13, 40:19, 40:37, 40:109, B*44:02:19, 44:05:03, 44:18, 44:25, 44:50, 44:75, 44:95, 44:152, B*49:01:01-49:01:04, 49:04-49:24, B*51:103, 51:119, B*57:51</i>												w				
<i>B*18:27</i>	1		3							10				14	15	
Well No.	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16

101.421-06 – including *Taq* polymerase, IFU-01
 101.421-06u – without *Taq* polymerase, IFU-02

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125	110	115	130	90	90	80	105	95	145	205	270	200	245	185	195	Length of spec. PCR product(s)	
17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	Well No.	
																	*24:06, 24:87
17																	*24:07, 24:19, 24:131
																	*24:10:01-24:10:02, 24:210
																	*24:11N
																	*24:13:01
																	*24:13:02
					22												*24:17, 24:41, 24:106
																	*24:18, 24:207
																	*24:21:01
17	18																*24:24
																	*24:25
																	*24:30, 24:42
									26								*24:32
																	*24:46
													30				*24:61
					22	23											*24:62
															32		*24:66
																	*24:77
			20														*24:128
																	*24:129
																	*24:138
																	*24:167
																	*24:188
					22												*24:208
																	*25:11, 32:08
					22												*29:07, 31:29
		19					24										*30:06
									26								*30:22, 32:07
																	*31:36
	18					23											*31:67-31:68, 32:28, 33:32:01
17																	*68:45
																	<i>B*13:39, B*38:16, B*40:13,</i> <i>40:19, 40:37, 40:109,</i> <i>B*44:02:19, 44:05:03, 44:18,</i> <i>44:25, 44:50, 44:75, 44:95,</i> <i>44:152, B*49:01:01-49:01:04,</i> <i>49:04-49:24, B*51:103, 51:119,</i> <i>B*57:51</i> <i>B*18:27</i>
17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	Well No.	

101.421-06 – including *Taq* polymerase, IFU-01
 101.421-06u – without *Taq* polymerase, IFU-02

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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*23 subtyping.

In addition, wells number 3, 5, 7, 10, 11, 13, 16, 19 to 21, 24 and 25 contain the primer pair giving rise to the shorter, 800 bp, internal positive control band in order to allow kit identification.

²The nucleotide position, in the 1st, 2nd, 3rd or 4th exons or 3rd intron matching the specificity-determining 3'-end of the primer is given. Nucleotide numbering as on the www.ebi.ac.uk/imgt/hla web site. The sequence of the 3 terminal nucleotides of the primer is given.

³The nucleotide position, in the 2nd, 3rd or 4th exons, 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*23 alleles in bold lettering are listed as confirmed alleles on the on the IMGT/HLA web page www.ebi.ac.uk/imgt/hla, release 3.10.0, October 2012.

⁵The A*23:08N and 23:22 alleles can be distinguished by the different sizes of the specific PCR products generated by primer mix 7.

⁶The A*23:09 and 23:26 alleles can be distinguished by the different sizes of the specific PCR products generated by primer mix 8.

⁷The A*23:10 and 23:23 alleles can be distinguished by the different sizes of the specific PCR products generated by primer mix 10.

⁸The A*23:13 and 23:33 alleles can be distinguished by the different sizes of the specific PCR products generated by primer mix 17.

⁹The A*23:15 and 23:27 alleles can be distinguished by the different sizes of the specific PCR products generated by primer mix 19.

¹⁰The A*23:16 and 23:29 alleles can be distinguished by the different sizes of the specific PCR products generated by primer mix 20.

¹¹The A*23:18 and 23:28 alleles can be distinguished by the different sizes of the specific PCR products generated by primer mix 4.

¹²The A*23:19Q and 23:53 and the A*23:31 alleles can be distinguished by the different sizes of the specific PCR products generated by primer mix 22.

¹³The A*23:36 and 23:39 alleles can be distinguished by the different sizes of the specific PCR products generated by primer mix 26.

¹⁴The A*23:41 and 23:42 alleles can be distinguished by the different sizes of the specific PCR products generated by primer mix 25.

¹⁵Primer mix 3: Specific PCR fragment of 125 bp in the A*23:03:01-23:03:02 and in the A*24:21:01, 24:208, 29:07 and 31:29 and the B*18:27 alleles. Specific PCR fragment of 270 bp in the A*23:25 allele.

Primer mix 4: Specific PCR fragment of 90 bp in the A*23:18 allele. Specific PCR fragment of 200 bp in the A*23:28 and the A*24:77 alleles.

Primer mix 7: Specific PCR fragment of 95 bp in the A*23:08N and the A*02:82N alleles.

Specific PCR fragment of 205 bp in the A*23:22 allele.

Primer mix 8: Specific PCR fragment of 135 bp in the A*23:26 allele. Specific PCR fragment of 170 bp in the A*23:48 allele. Specific PCR fragment of 215 bp in the A*23:09 and the A*01:02, 01:20 and 24:129 alleles.

Primer mix 10: Specific PCR fragment of 135 bp in the A*23:23 and in the B*18:27 alleles.

Specific PCR fragment of 235 bp in the A*23:10 and 23:43 and the A*24:10:01^w-24:10:02^w, 24:46 and 24:210^w alleles.

Primer mix 13: Specific PCR fragment of 90 bp in the A*23:30 allele. Specific PCR fragment of 210 bp in the A*23:02 and 23:24 and the A* 24:06, 24:87, 24:138 and 24:167 alleles.

Primer mix 15: Specific PCR fragment of 210 bp in the A*23:14:01 and in the A*24:13:02 and the B*18:27 alleles. Specific PCR fragment of 290 bp in the A*23:47 allele.

Primer mix 16: Specific PCR fragment of 175 bp in the A*23:14:01-23:14:02 and the A*02:17:01^w-02:17:02^w,

101.421-06 – including *Taq* polymerase, IFU-01
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Lot No.: 68R**Lot-specific Information**www.olerup-ssp.com

24:02:16, 24:06, 24:13:01-24:13:02, 24:18, 24:22, 24:54, 24:87, 24:91, 24:107, 24:133, 24:167 and 24:207 alleles. Specific PCR fragment of 205 bp in the A*24:05, 24:24, 24:130, 24:168, 24:194, 24:199, 26:16 and 68:45 alleles. Specific PCR fragment of 175 and 205 bp in the A*24:02:01:01-24:02:15, 24:02:17-24:04, 24:07-24:11N, 24:17, 24:19-24:21:02, 24:23, 24:25-24:50, 24:55-24:56, 24:58-24:63, 24:66-24:86N, 24:88-24:90N, 24:93, 24:95-24:106, 24:108-24:113, 24:115-24:129, 24:131-24:132N, 24:134-24:137, 24:139-24:166, 24:169-24:187, 24:189-24:193, 24:195-24:198, 24:200-24:206, 24:208-24:210, 24:212-24:214, 24:216-24:221 and 33:19 alleles. Both fragments may not always be visible.

Primer mix 17: Specific PCR fragment of 125 bp in the A*23:33 allele. Specific PCR fragment of 225 bp in the A*23:13 and the A*03:72, 11:88, 24:07, 24:19, 24:24, 24:131, 29:37, 30:01:01-30:01:07, 30:11:01-30:11:02, 30:14L-30:20, 30:23-30:26, 30:30-30:31, 30:35-30:43, 30:48-30:49, 30:52-30:54, 30:56, 30:58-30:60, 30:62-30:63, 30:65 and 68:45 alleles.

Primer mix 19: Specific PCR fragment of 115 bp in the A*23:15 and 23:49 and the A*30:06 alleles. Specific PCR fragment of 260 bp in the A*23:27 allele.

Primer mix 20: Specific PCR fragment of 130 bp in the A*23:29 and in the A* 24:128 alleles. Specific PCR fragment of 230 bp in the A*23:16 allele.

Primer mix 22: Specific PCR fragment of 90 bp in the A*23:31, 23:45 and 23:53 and the A*24:17, 24:41, 24:62, 24:106, 24:208, 29:07 and 31:29 alleles. Specific PCR fragment of 290 bp in the A*23:19Q allele.

Primer mix 23: Specific PCR fragment of 80 bp in the A*23:45 and the A*02:41, 02:80, 02:117, 02:289, 02:304, 24:62, 26:10, 31:67-31:68, 32:28 and 33:32:01 alleles. Specific PCR fragment of 170 bp in the A*23:20 allele.

Primer mix 24: Specific PCR fragment of 105 bp in the A*23:49 and the A*30:06 alleles. Specific PCR fragment of 180 bp in the A*23:21 allele. Specific PCR fragment of 240 bp in the A*23:40 allele.

Primer mix 25: Specific PCR fragment of 95 bp in the A*23:41 and the A*02:221 and 29:15 alleles. Specific PCR fragment of 205 bp in the A*23:42 allele.

Primer mix 26: Specific PCR fragment of 145 bp in the A*23:39 and the A*30:22 alleles. Specific PCR fragment of 170 bp in the A*23:48 allele. Specific PCR fragment of 245 bp in the A*23:36 and the A*24:32 and 32:07 alleles.

Primer mix 27: Specific PCR fragment of 205 bp in the A*23:34 allele. Specific PCR fragment of 285 bp in the A*23:35 allele.

Primer mix 29: Specific PCR fragment of 200 bp in the A*23:37:01-23:37:02 alleles. Specific PCR fragment of 240 bp in the A*23:40 allele. Specific PCR fragment of 290 bp in the A*23:47 allele.

'w', may be weakly amplified.

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

101.421-06 – including *Taq* polymerase, IFU-01
 101.421-06u – without *Taq* polymerase, IFU-02

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Lot No.: **68R**

Lot-specific Information

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CELL LINE VALIDATION SHEET																			
HLA-A*23 SSP subtyping kit																			
			Lot No.:	Well															
				1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
				201211401	201189702	201189703	201189704	201189705	201189706	201189707	201211408	201189709	201211410	201189711	201189712	201189713	201211414	201211415	201189716
	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		+	-	-	-	-	-	-	-	-	-	-	-	-	+	-	W
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	-	-	-	-	-	-	-	-	W	-	-	-	+	-	+	
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		+	-	-	-	-	-	-	-	-	-	-	-	+	-	W	
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	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

101.421-06 – including *Taq* polymerase, IFU-01
 101.421-06u – without *Taq* polymerase, IFU-02

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Lot No.: **68R**

Lot-specific Information

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CELL LINE VALIDATION SHEET																			
HLA-A*23 SSP subtyping kit																			
				Well															
				17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32
			Lot No.:	201189717	201189718	201211419	201189720	201189721	201189722	201189723	201211424	201211425	201211426	201189727	201211428	201211429	201211430	201189731	201189732
	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	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

101.421-06 – including *Taq* polymerase, IFU-01
 101.421-06u – without *Taq* polymerase, IFU-02

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 “Instructions for Use” (IFU)

Lot No.: **68R**

Lot-specific Information

www.olerup-ssp.com**CERTIFICATE OF ANALYSIS****Olerup SSP® HLA-A*23 SSP**

Product number: 101.421-06 – including *Taq* polymerase
 101.421-06u – without *Taq* polymerase
Lot number: 68R
Expiry date: 2015-July-01
Number of tests: 6
Number of wells per test: 32

Well specifications:

Well No.	Production No.	Well No.	Production No.	Well No.	Production No.
1	2012-114-01	13	2011-897-13	25	2012-114-25
2	2011-897-02	14	2012-114-14	26	2012-114-26
3	2011-897-03	15	2012-114-15	27	2011-897-27
4	2011-897-04	16	2011-897-16	28	2012-114-28
5	2011-897-05	17	2011-897-17	29	2012-114-29
6	2011-897-06	18	2011-897-18	30	2012-114-30
7	2011-897-07	19	2012-114-19	31	2011-897-31
8	2012-114-08	20	2011-897-20	32	2011-897-32
9	2011-897-09	21	2011-897-21		
10	2012-114-10	22	2011-897-22		
11	2011-897-11	23	2011-897-23		
12	2011-897-12	24	2012-114-24		

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, 9, 11, 13, 15, 19, 20 and 23 to 32 were available. The specificities of the primers in primer solutions 3, 13, 15, 19, 23, 26 and 32 were tested by separately adding one additional 5'-primer, respectively one additional 3'-primer. In primer solutions 4, 5, 9, 24, 27, 29 and 30 it was only possible to test the 5'-primers, the 3'-primers were not possible to test. In primer solutions 11, 20, 25, 28 and 31 it was only possible to test the 3'-primers, the 5'-primers was not possible to test. In primer solutions 3, 7, 8, 10, 13, 15, 17, 19, 22, 23 and 26 one or two 3'-primers were not possible to test, and in primer solutions 19 and 23 one 5'-primer was not possible to test. Additional primers in primer solutions 7, 10 and 16 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-February-06

Approved by:

Production Quality Control

101.421-06 – including *Taq* polymerase, IFU-01
101.421-06u – without *Taq* polymerase, IFU-02

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“Instructions for Use” (IFU)

Lot No.: **68R**

Lot-specific Information

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Declaration of Conformity

Product name: *Olerup* SSP® HLA-A*23
Product number: 101.421-06
Lot number: 68R

Intended use: HLA-A*23 high resolution histocompatibility testing

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

We, *Olerup* SSP AB, hereby declare that this product, to which this Declaration of Conformity relates is in conformity with the following Standard(s) and other normative document(s) ISO 9001:2008 and ISO 13485:2003, following the provisions of the 98/79/EC Directive on *in vitro* diagnostic medical devices, Annex II List B, 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-February-06

Ann-Cathrin Jareman
Head of QA and Regulatory Affairs

101.421-06 – including *Taq* polymerase, IFU-01
101.421-06u – without *Taq* polymerase, IFU-02

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“Instructions for Use” (IFU)

Lot No.: **68R**

Lot-specific Information

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Fax: +43-1-710 15 00 10

E-mail: support-at@olerup.com

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

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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**.