

Olerup SSP® HLA-A*24

Product number:	101.422-24/03 – including <i>Taq</i> pol.
Lot number:	63K
Expiry date:	2013-May-01
Number of tests:	24 tests – Product No. 101.422-24 3 tests – Product No. 101.422-03
Number of wells per test:	93
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. 63K.

CHANGES COMPARED TO THE PREVIOUS *OLERUP SSP*® HLA-A*24 Lot

The HLA-A*24 specificity and interpretation tables have been updated for the HLA-A alleles described since the previous *Olerup SSP*® HLA-A*24 lot was made (Lot No. 12G).

Eleven wells have been added to the HLA-A*24 kit, wells **83 to 93**.
The amplification patterns for some rare HLA-A*24 alleles only differ
by the length of the specific PCR products.

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

Well	5'-primer	3'-primer	Rationale
10	Added	-	Primer added for the A*24:02:23 allele.
15	Modified	Added	Primers added for the A*24:100 and A*24:109 alleles.
30	-	Added	Primer added for the A*24:21:02 allele.
31	-	Added	Primers added for the A*24:119 and A*24:129 alleles.
33	-	Added	Primer added for the A*24:139 allele.
35	Added	-	Primer added for the A*24:142 allele.
36	Added	-	Primer added for the A*24:124 allele.
38	Added	-	Primers added for the A*24:126 and A*24:137 alleles.
41	Added	-	Primers added for the A*24:118 and A*24:132N alleles.
45	Added	-	Primers added for the A*24:113 and A*24:132N alleles.
47	Added	-	Primer added for the A*24:123 allele.
51	Added	-	Primer added for the A*24:140 allele.
59	-	Added	Primers added for the A*24:127 and A*24:143 alleles.
61	-	Added	Primers added for the A*24:127 and A*24:141 alleles.

64	Added	-	Primer added for the A*24:124 allele.
68	-	Added	Primers added for the A*24:141 and A*24:143 alleles.
70	Added	-	Primer added for the A*24:134 allele.
71	Added	-	Primer added for the A*24:128 allele.
73	-	Added	Primer added for the A*24:131 allele.
77	-	Added	Primer added for the A*24:122 allele.
79	Added	-	Primer added for the A*24:114 allele.
80	Added	-	Primers added for the A*24:140 and A*24:142 alleles.
81	-	Added	Primers added for the A*24:133 and A*24:139 alleles.
82	-	Added	Primers added for the A*24:125 and A*24:130 alleles.
83	New	New	New primer pairs for the A*24:101 and A*24:111 alleles.
84	New	New	New primer pairs for the A*24:102, A*24:103 and A*24:107 alleles.
85	New	New	New primer pairs for the A*24:104 and A*24:117 alleles.
86	New	New	New primer pairs for the A*24:105 and A*24:121 alleles.
87	New	New	New primer pairs for the A*24:106, A*24:110 and A*24:136 alleles.
88	New	New	New primer pairs for the A*24:116 and A*24:137 alleles.
89	New	New	New primer pairs for the A*24:108 and A*24:112 alleles.
90	New	New	New primer pair for the A*24:115 allele.
91	New	New	New primer pair for the A*24:135 allele.
92	New	New	New primer pair for the A*24:144 allele.
93	New	New	New primer pair for the A*24:112 allele.

Change in revision R01 compared to R00:

1. Modified sequence as of allele database 3.7.0: A*24:142 corrected at positions 124-5. As a consequence, the A*24:142 allele is not amplified by primer mixes 35 and 80.

PRODUCT DESCRIPTION

HLA-A*24 SSP subtyping

CONTENT

The primer set contains 5'- and 3'-primers for identifying the HLA-A*24:02 to A*24:144 alleles.

PLATE LAYOUT

Each test consists of 93 PCR reactions in a 96 well PCR plate. Wells 94 to 96 are empty.

1	2	3	4	5	6	7	8
9	10	11	12	13	14	15	16
17	18	19	20	21	22	23	24
25	26	27	28	29	30	31	32
33	34	35	36	37	38	39	40
41	42	43	44	45	46	47	48
49	50	51	52	53	54	55	56
57	58	59	60	61	62	63	64
65	66	67	68	69	70	71	72
73	74	75	76	77	78	79	80
81	82	83	84	85	86	87	88
89	90	91	92	93	empty	empty	empty

The 96 well PCR plate is marked with 'HLA-A*24' in silver/gray ink.

Well No. 1 is marked with '63K'.

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 aluminum foil.

INTERPRETATION

The interpretation of HLA-A*24 SSP subtypings will be influenced by the A*01, several A*02, six A*03, six A*11, the A*23, the A*25:11, nine A*26, four A*29, several A*30, five A*31, three A*32, four A*33, the A*66:10, the A*68, the A*74:06 and the A*80 alleles when present on the other haplotype. In addition, the B*07:64, B*15:12 and B*15:19 alleles will be amplified by primer mixes 32, 45 and 91, the B*18:27 allele will be amplified by mixes 2, 6, 25, 30 and 48 and the B*18:38 allele will be amplified by primer mix 63. Moreover, the C*12:37 allele will be amplified by primer mixes 46 and 57.

UNIQUELY IDENTIFIED ALLELES

All the HLA-A*24 alleles, i.e. **A*24:02 to A*24:144**, recognized by the HLA Nomenclature Committee in July 2010¹ will give rise to unique amplification patterns by the primers in the HLA-A*24 subtyping kit.

The HLA-A*24 subtyping kit cannot distinguish the A* 24:02:01:01, 24:02:02-24:02:04, 24:02:06-24:02:09, 24:02:11-24:02:12 and 24:02:14-24:02:36 alleles, the A* 24:03:01 and 24:03:02 alleles or the A* 24:21:01 and 24:21:02 alleles.

The A*24:37 and 24:119 alleles can be distinguished by the different sizes of the specific PCR products generated by primer mix 31.

The A*24:49 and 24:126 alleles can be distinguished by the different sizes of the specific PCR products generated by primer mix 38.

The A*24:81 and 24:134 alleles can be distinguished by the different sizes of the specific PCR products generated by primer mix 70.

The A*24:82 and 24:128 alleles can be distinguished by the different sizes of the specific PCR products generated by primer mix 71.

The A*24:101 and 24:111 alleles can be distinguished by the different sizes of the specific PCR products generated by primer mix 83.

The A*24:102 and 24:103 alleles can be distinguished by the different sizes of the specific PCR products generated by primer mix 84.

The A*24:104 and 24:117 alleles can be distinguished by the different sizes of the specific PCR products generated by primer mix 85.

The A*24:105 and 24:121 alleles can be distinguished by the different sizes of the specific PCR products generated by primer mix 86.

The A*24:106 and 24:136 alleles can be distinguished by the different sizes of the specific PCR products generated by primer mix 87.

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

RESOLUTION IN HOMO- AND HETEROZYGOTES

A total of 194 alleles generate 135 amplification patterns that can be combined in 9180 homozygous and heterozygous combinations. 3835 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.

SPECIFICITY TABLE

HLA-A*24 SSP subtyping

Specificities and sizes of the PCR products of the 93 primer mixes used for HLA-A*24 SSP subtyping

Primer Mix	Size of spec. PCR product ¹	Size of control band ²	Amplified HLA-A*24 alleles ³	Other amplified HLA Class I alleles ⁴
1⁸	210 bp	800 bp	*24:02:01:01-24:02:12, 24:02:13 ^w , 24:02:14-24:11N, 24:13:01-24:15, 24:17-24:32, 24:34-24:64, 24:66-24:75, 24:77-24:144	*23:01:01-23:26, 33:19, 80:01 ^w -80:02 ^w
2	245 bp	1070 bp	*24:03:01-24:03:02, 24:10, 24:18, 24:22, 24:33, 24:94, 24:125, 24:138	*02:17:01-02:17:02, 02:108, 02:110, 23:04, 29:07, 31:29, B*18:27
3	210 bp	800 bp	*24:02:01:01-24:05, 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, 24:115-24:132N, 24:134-24:137, 24:139-24:144	*33:19
4⁶	220 bp	1070 bp	*24:06, 24:13:01, 24:18, 24:22, 24:24, 24:94, 24:138	*02:17:01-02:17:02, 02:108, 02:110, 23:01:01-23:13, 23:15-23:26, 29:07, 31:29
5	175 bp	1070 bp	*24:02:01:01-24:04, 24:06-24:11N, 24:13:01-24:13:02, 24:17-24:23, 24:25-24:50, 24:54-24:56, 24:58-24:63, 24:66-24:91, 24:93, 24:95-24:113, 24:115-24:129, 24:131-24:137, 24:139-24:144	*02:17:01 ^w -02:17:02 ^w , 23:14, 33:19
6⁶	175 bp	1070 bp	*24:05, 24:24	*23:01:01-23:13, 23:15-23:26, 29:07, 31:29, B*18:27
7	335 bp	1070 bp	*24:02:01:01-24:03:02, 24:05-24:11N, 24:13:01-24:13:02, 24:17-24:18, 24:20-24:27, 24:29-24:43, 24:45N-	*23:01:01-23:26

			24:50, 24:52, 24:54-24:56, 24:58-24:64, 24:66-24:88, 24:90N-24:91, 24:93-24:108, 24:110-24:117, 24:119- 24:128, 24:130-24:144	
8⁵	75 bp	1070 bp	*24:04, 24:109	
9	225 bp	800 bp	*24:07, 24:19, 24:24, 24:112, 24:131	*03:72, 23:13, 30:01:01-30:01:03, 30:11:01-30:11:02, 30:14L-30:20, 30:23- 30:26, 30:30-30:31, 30:35-30:41, 68:45
10	370 bp	1070 bp	*24:02:01:01-24:02:04, 24:02:06-24:06, 24:08- 24:11N, 24:13:01-24:13:02, 24:17-24:18, 24:20-24:23, 24:25-24:50, 24:52, 24:54- 24:56, 24:58-24:64, 24:66- 24:91, 24:93-24:107, 24:109- 24:111, 24:113-24:117, 24:119-24:130, 24:132N- 24:144	*02:10, 02:17:01- 02:17:02, 02:39, 02:108, 02:110, 02:148, 02:242, 02:244, 23:01:01- 23:12, 23:14-23:21, 23:23-23:26, 31:29, 33:19
11⁹	200 bp, 245 bp	1070 bp	*24:08, 24:42, 24:61, 24:89	*02:76, 30:22
12	235 bp	1070 bp	*24:25	*23:05
13	160 bp	1070 bp	*24:02:01:01-24:02:36, 24:04-24:09N, 24:11N, 24:13:01-24:15, 24:17, 24:19- 24:20, 24:23-24:32, 24:34- 24:64, 24:66-24:74, 24:76- 24:93, 24:95-24:109, 24:111- 24:124, 24:126-24:137, 24:139-24:144	*02:19, 02:36-02:37, 02:54, 02:255, 23:01:01-23:02, 23:05- 23:26, 33:19, 68:26
14⁵	105 bp	1070 bp	*24:09N	
15^{5,10}	105 bp, 385 bp	800 bp	*24:14-24:15, 24:19, 24:44, 24:51, 24:53, 24:57, 24:92, 24:100, 24:109	*02:46, 02:48, 02:70, 02:129, 03:30, 30:07, 31:08, 32:05, 33:21
16⁵	85 bp	1070 bp	*24:17, 24:41	*29:07
17	230 bp	1070 bp	*24:10, 24:46	*23:10
18	275 bp	1070 bp	*24:02:01:02L	
19⁸	195 bp	1070 bp	*24:02:01:01-24:02:09, 24:02:11-24:11N, 24:13:01- 24:15, 24:17-24:32, 24:34- 24:64, 24:66-24:144	*23:01:01-23:26, 33:19

Lot No.: **63K**

Lot-specific information

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20 ^{7,8}	470 bp	1070 bp	*24:11N	*01:04N, 03:21N, 11:21N, 23:07N
21	155 bp	800 bp	*24:31	
22 ⁵	125 bp	800 bp	*24:27	
23	190 bp	800 bp	*24:28, 24:30, 24:42, 24:89	*02:01:09, 02:06:07, 02:50, 02:122, 03:09, 11:06, 11:18, 23:12, 25:11, 26:03:01- 26:03:02, 26:06, 26:21, 26:30, 29:19, 32:08, 33:24, 68:05, 68:15, 68:20, 74:06
24	240 bp	800 bp	*24:19, 24:28, 24:44, 24:89	*02:76, 03:72, 30:01:01-30:01:03, 30:11:01-30:11:02, 30:13-30:20, 30:23- 30:24, 30:26, 30:30- 30:31, 30:35-30:41, 68:45
25	220 bp	1070 bp	*24:13:01-24:13:02, 24:18, 24:24, 24:56, 24:94	*02:17:01-02:17:02, 02:108, 02:110, 23:01:01-23:01:02, 23:03:01-23:26, 29:07, 31:29, B*18:27
26 ^{5,11}	90 bp, 220 bp	800 bp	*24:22, 24:96	
27 ^{5,8,12}	80 bp, 370 bp	800 bp	*24:14, 24:32	*02:46, 02:48, 02:70, 02:129, 32:05
28	155 bp	800 bp	*24:35	
29	210 bp	800 bp	*24:08, 24:29, 24:42, 24:89	*02:76, 30:22
30 ^{5,13}	125 bp, 200 bp	800 bp	*24:21:01-24:21:02, 24:59	*23:03:01-23:03:02, 29:07, 31:29, B*18:27
31 ¹⁴	155 bp, 235 bp	800 bp	*24:04, 24:37, 24:109, 24:119, 24:129	*01:02, 01:20, 26:16
32	225 bp	1070 bp	*24:15, 24:41, 24:51, 24:92	*01:01:01:01-01:04N, 01:06-01:37, 01:39- 01:41, 01:43-01:66, 11:27, 11:38-11:39, 26:29, 26:49, 32:13, 66:10, B*07:64^w, B*15:12^w, B*15:19^w
33 ⁵	100 bp	1070 bp	*24:39, 24:139	
34	195 bp	800 bp	*24:36N	
35 ⁷	200 bp	800 bp	*24:45N, 24:88	

Lot No.: **63K**

Lot-specific information

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36 ^{5,8}	115 bp	1070 bp	*24:47, 24:124	*31:07, 31:10
37	210 bp	1070 bp	*24:48N, 24:54	
38 ¹⁵	145 bp, 170 bp, 230 bp	800 bp	*24:49, 24:126, 24:137	
39	210 bp	800 bp	*24:50	*02:129
40	225 bp	1070 bp	*24:08, 24:20, 24:88	
41 ^{7,16}	200 bp, 240 bp	1070 bp	*24:26, 24:62, 24:118, 24:132N	*01:39, 26:29, 26:49, 31:05, 32:13, 33:10, 66:10
42	200 bp	1070 bp	*24:24, 24:67	*26:16, 68:45
43	160 bp	800 bp	*24:43	
44	250 bp	800 bp	*24:51, 24:57, 24:92, 24:120	*01:01:01:01-01:04N, 01:06-01:19, 01:21- 01:65, 03:18, 11:27, 11:38-11:39, 26:29, 26:49, 29:03, 31:05, 32:13, 33:10, 66:10, 68:26, 80:01-80:02
45 ¹⁷	200 bp, 245 bp	1070 bp	*24:14, 24:52, 24:113, 24:132N	*01:20, 01:66, 02:19, 02:36-02:37, 02:54, 02:255, 26:29, 26:49, 66:10, B*07:64, B*15:12, B*15:19
46 ^{5,6}	110 bp	1070 bp	*24:15, 24:41, 24:51, 24:92	*02:50, 02:73, 02:93, 02:122, 02:156, 02:172, 26:10, 68:02:01:01-68:02:04, 68:15, 68:18N, 68:25, 68:27-68:28, 68:31, 68:34, 68:40, 68:44, 68:48-68:49N, 68:51, 68:53-68:54, C*12:37
47 ¹⁸	200 bp, 410 bp	800 bp	*24:18, 24:26, 24:56, 24:123	*03:30, 30:07, 31:08, 32:05
48 ⁶	195 bp	1070 bp	*24:24, 24:71	*23:01:01-23:23, 23:25-23:26, 29:07, 31:29, B*18:27
49 ¹⁹	215 bp, 245 bp	1070 bp	*24:23, 24:91	
50	235 bp	800 bp	*24:34	
51 ²⁰	165 bp, 215 bp	800 bp	*24:38, 24:140	
52 ⁸	240 bp	800 bp	*24:40N	

Lot No.: **63K**

Lot-specific information

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53	230 bp	1070 bp	*24:55	
54⁸	165 bp	1070 bp	*24:58	
55	240 bp	1070 bp	*24:60N	
56	270 bp	1070 bp	*24:63	
57	135 bp	1070 bp	*24:64	C*12:37
58	195 bp	1070 bp	*24:66	
59²¹	230 bp, 255 bp, 285 bp	1070 bp	*24:68, 24:127, 24:143	
60	275 bp	800 bp	*24:69	
61^{5,22}	105 bp, 280 bp	800 bp	*24:70, 24:127, 24:141	
62⁵	125 bp	800 bp	*24:72	*02:106, 02:145
63	135 bp	1070 bp	*24:73	B*18:38
64^{5,8,23}	115 bp, 170 bp	1070 bp	*24:74, 24:124	*31:07, 31:10
65^{5,24}	80 bp, 235 bp	1070 bp	*24:75, 24:90N	*02:88N
66	200 bp	800 bp	*24:77	
67	230 bp	1070 bp	*24:79	
68²⁵	230 bp, 285 bp	800 bp	*24:78, 24:141, 24:143	
69⁵	105 bp	1070 bp	*24:80	
70^{5,26}	110 bp, 250 bp	1070 bp	*24:81, 24:134	
71²⁷	130 bp, 260 bp	800 bp	*24:82, 24:128	*29:13, 31:07-31:08, 31:10
72⁵	120 bp	1070 bp	*24:83N	
73^{5,28}	100 bp, 170 bp	1070 bp	*24:84N, 24:131, 24:138	*02:17:01-02:17:02, 02:108, 02:110
74	200 bp	1070 bp	*24:85	
75	290 bp	1070 bp	*24:86N	
76^{8,29}	170 bp, 260 bp	1070 bp	*24:76, 24:98	
77³⁰	145 bp, 210 bp	800 bp	*24:06, 24:87, 24:122, 24:138	*23:02
78	140 bp	800 bp	*24:57, 24:92, 24:120	*02:50, 02:73, 02:122, 02:156, 02:245, 03:17, 26:10, 68:01:01-68:43, 68:45-68:54
79	250 bp	1070 bp	*24:14, 24:93, 24:114	*01:20, 01:66, 02:19,

				02:36-02:37, 02:54, 02:255
80 ³¹	165 bp, 220 bp	1070 bp	*24:95, 24:140	
81 ^{5,32}	100 bp, 215 bp	1070 bp	*24:97, 24:133, 24:139	
82 ³³	185 bp, 225 bp	1070 bp	*24:99, 24:125, 24:130	
83 ³⁴	135 bp, 275 bp	800 bp	*24:101, 24:111	
84 ^{5,35}	95 bp, 210 bp, 290 bp	1070 bp	*24:102-24:103, 24:107	
85 ³⁶	145 bp, 210 bp	1070 bp	*24:104, 24:117	*03:30, 32:05
86 ³⁷	190 bp, 255 bp	1070 bp	*24:105, 24:121	
87 ^{5,6,38}	90 bp, 120 bp, 195 bp	1070 bp	*24:17, 24:41, 24:62, 24:106, 24:110, 24:136	*29:07, 31:29
88	170 bp	1070 bp	*24:116, 24:137	
89 ^{5,39}	75 bp, 270 bp	1070 bp	*24:07, 24:108, 24:112, 24:131	*23:13
90 ⁵	95 bp	800 bp	*24:115	
91	215 bp	1070 bp	*24:135	*32:13, B*07:64, B*15:12, B*15:19
92	190 bp	1070 bp	*24:144	
93	270 bp	1070 bp	*24:112	

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*24 SSP typings.

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

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

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

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

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

²The internal positive control primer pairs amplify segments of the human growth hormone gene. The two different control primer pairs give rise to either an internal positive control band of 1070 base pairs, for most wells, or a band of 800 base pairs, for some wells.

Well number 1 contains the primer pair giving rise to the shorter, 800 bp, internal positive control

band in order to help in the correct orientation of the HLA-A*24 subtyping.

In addition, wells number 3, 9, 15, 21 to 24, 26 to 31, 34, 35, 38, 39, 43, 44, 47, 50 to 52, 60 to 62, 66, 68, 71, 77, 78, 83 and 90 contain the primer pair giving rise to the shorter, 800 bp, internal positive control band in order to allow kit identification.

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

³The A*24:37 and 24:119 alleles can be distinguished by the different sizes of the specific PCR products generated by primer mix 31.

The A*24:49 and 24:126 alleles can be distinguished by the different sizes of the specific PCR products generated by primer mix 38.

The A*24:81 and 24:134 alleles can be distinguished by the different sizes of the specific PCR products generated by primer mix 70.

The A*24:82 and 24:128 alleles can be distinguished by the different sizes of the specific PCR products generated by primer mix 71.

The A*24:101 and 24:111 alleles can be distinguished by the different sizes of the specific PCR products generated by primer mix 83.

The A*24:102 and 24:103 alleles can be distinguished by the different sizes of the specific PCR products generated by primer mix 84.

The A*24:104 and 24:117 alleles can be distinguished by the different sizes of the specific PCR products generated by primer mix 85.

The A*24:105 and 24:121 alleles can be distinguished by the different sizes of the specific PCR products generated by primer mix 86.

The A*24:106 and 24:136 alleles can be distinguished by the different sizes of the specific PCR products generated by primer mix 87.

⁴Due to the sharing of sequence motifs between HLA-A alleles some non-HLA-A*24 alleles will be amplified by primer mixes 1 to 7, 9 to 13, 15 to 17, 19, 20, 23 to 25, 27, 29 to 32, 36, 39, 41, 42, 44 to 48, 62, 64, 65, 71, 73, 77 to 79, 85, 87, 89 and 91. In addition, the B*07:64, B*15:12 and B*15:19 alleles will be amplified by primer mixes 32, 45 and 91, the B*18:27 allele will be amplified by mixes 2, 6, 25, 30 and 48, the B*18:38 allele will be amplified by primer mix 63 and the C*12:37 allele will be amplified by primer mixes 46 and 57.

We assume that unknown 4th exon A*23 and A*24 nucleotide sequences are conserved within the A*23/A*24 allele group.

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

⁶Primer mixes 4, 6, 46, 48 and 87 may yield less specific PCR products than the other A*24 primer mixes.

⁷Primer mixes 20, 35 and 41 may give rise to a primer oligomer artefact.

⁸Primer mixes 1, 19, 20, 27, 36, 52, 54, 64 and 76 may give rise to nonspecific amplifications.

⁹Primer mix 11: Specific PCR fragment of 200 bp in the A* 24:08, 24:42 and 24:89 and in the A*02:76 and 30:22 alleles. Specific PCR fragment of 245 bp in the A*24:61 allele.

¹⁰Primer mix 15: Specific PCR fragment of 105 bp in the A* *24:19, 24:44, 24:100 and 24:109 alleles. Specific PCR fragment of 385 bp in the A* 24:14-24:15, 24:51, 24:53, 24:57 and 24:92 and in the A*02:46, 02:48, 02:70, 02:129, 03:30, 30:07, 31:08, 32:05 and 33:21 alleles.

¹¹Primer mix 26: Specific PCR fragment of 90 bp in the A*24:96 allele. Specific PCR fragment of 220 bp in the A*24:22 allele.

¹²Primer mix 27: Specific PCR fragment of 80 bp in the A*24:32 and A*32:05 alleles. Specific PCR fragment of 370 bp in the A*24:14 and in the A*02:46, 02:48, 02:70 and 02:129 alleles.

¹³Primer mix 30: Specific PCR fragment of 125 bp in the A*24:21:01-24:21:02 and in the A*23:03:01-23:03:02, 29:07 and 31:29 and in the B*18:27 alleles. Specific PCR fragment of 200 bp in the A*24:59 allele.

¹⁴Primer mix 31: Specific PCR fragment of 155 bp in the A*24:37 allele. Specific PCR fragment of 235 bp in the A*24:04, 24:109, 24:119 and 24:129 and in the A*01:02, 01:20 and 26:16 alleles.

¹⁵Primer mix 38: Specific PCR fragment of 145 bp in the A*24:49 allele. Specific PCR fragment of 170 bp in the A*24:137 allele. Specific PCR fragment of 230 bp in the A*24:126 allele.

¹⁶Primer mix 41: Specific PCR fragment of 200 bp in the A*24:26 and 24:62 and in the A*01:39, 26:29, 26:49, 31:05, 32:13, 33:10 and 66:10 alleles. Specific PCR fragment of 240 bp in the A*24:118 and 24:132N alleles.

¹⁷Primer mix 45: Specific PCR fragment of 200 bp in the A*24:113 allele. Specific PCR fragment of 245 bp in the A*24:14, 24:52 and 24:132N and in the A*01:20, 01:66, 02:19, 02:36-02:37, 02:54, 02:255, 26:29, 26:49 and 66:10 and in the B*07:64, B*15:12 and B*15:19 alleles.

¹⁸Primer mix 47: Specific PCR fragment of 200 bp in the A*24:18, 24:56 and 24:123 alleles. Specific PCR fragment of 410 bp in the A*24:26 and in the A*03:30, 30:07, 31:08 and 32:05 alleles.

¹⁹Primer mix 49: Specific PCR fragment of 215 bp in the A*24:91 allele. Specific PCR fragment of 245 bp in the A*24:23 allele.

²⁰Primer mix 51: Specific PCR fragment of 165 bp in the A*24:140 allele. Specific PCR fragment of 215 bp in the A*24:38 allele.

²¹Primer mix 59: Specific PCR fragment of 230 bp in the A*24:143 allele. Specific PCR fragment of 255 bp in the A*24:68 allele. Specific PCR fragment of 285 bp in the A*24:127 allele.

²²Primer mix 61: Specific PCR fragment of 105 bp in the A*24:70 allele. Specific PCR fragment of 280 bp in the A*24:127 and 24:141 alleles.

²³Primer mix 64: Specific PCR fragment of 115 bp in the A*24:124 and in the A*31:07 and 31:10 alleles. Specific PCR fragment of 170 bp in the A*24:74 allele.

²⁴Primer mix 65: Specific PCR fragment of 80 bp in the A*24:75 allele. Specific PCR fragment of 235 bp in the A*24:90N and the A*02:88N alleles.

²⁵Primer mix 68: Specific PCR fragment of 230 bp in the A*24:143 allele. Specific PCR fragment of 285 bp in the A*24:78 and 24:141 alleles.

²⁶Primer mix 70: Specific PCR fragment of 110 bp in the A*24:134 allele. Specific PCR fragment of 250 bp in the A*24:81 allele.

²⁷Primer mix 71: Specific PCR fragment of 130 bp in the A*24:128 allele. Specific PCR fragment of 260 bp in the A*24:82 and in the A*29:13, 31:07-31:08 and 31:10 alleles.

²⁸Primer mix 73: Specific PCR fragment of 100 bp in the A*24:84N allele. Specific PCR fragment of 170 bp in the A*24:131 and 24:138 and in the A*02:17:01-02:17:02, 02:108 and 02:110 alleles.

²⁹Primer mix 76: Specific PCR fragment of 170 bp in the A*24:76 allele. Specific PCR fragment of 260 bp in the A*24:98 allele.

³⁰Primer mix 77: Specific PCR fragment of 145 bp in the A*24:122 allele. Specific PCR fragment of 210 bp in the A*24:06, 24:87 and 24:138 and in the A*23:02 alleles.

³¹Primer mix 80: Specific PCR fragment of 165 bp in the A*24:140 allele. Specific PCR fragment of 220 bp in the A*24:95 allele.

³²Primer mix 81: Specific PCR fragment of 100 bp in the A*24:139 allele. Specific PCR fragment of 215 bp in the A*24:97 and 24:133 alleles.

³³Primer mix 82: Specific PCR fragment of 185 bp in the A*24:99 and 24:130 alleles. Specific PCR fragment of 225 bp in the A*24:125 allele.

³⁴Primer mix 83: Specific PCR fragment of 135 bp in the A*24:111 allele. Specific PCR fragment of 275 bp in the A*24:101 allele.

³⁵Primer mix 84: Specific PCR fragment of 95 bp in the A*24:103 allele. Specific PCR fragment of 210 bp in the A*24:107 allele. Specific PCR fragment of 290 bp in the A*24:102 allele.

³⁶Primer mix 85: Specific PCR fragment of 145 bp in the A*24:117 allele. Specific PCR fragment of 210 bp in the A*24:104 and in the A*03:30 and 32:05 alleles.

³⁷Primer mix 86: Specific PCR fragment of 190 bp in the A*24:121 allele. Specific PCR fragment of 255 bp in the A*24:105 allele.

³⁸Primer mix 87: Specific PCR fragment of 90 bp in the A*24:17, 24:41, 24:62 and 24:106 and in the A*29:07 and 31:29 alleles. Specific PCR fragment of 120 bp in the A*24:110 allele. Specific PCR fragment of 195 bp in the A*24:136 alleles.

³⁹Primer mix 89: Specific PCR fragment of 75 bp in the A*24:07, 24:108 and 24:131 and in the A* 23:13 alleles. Specific PCR fragment of 270 bp in the A*24:112 allele.

'w', might be weakly amplified.

INTERPRETATION TABLE																																																																																															
HLA-A*24 high resolution SSP typing																																																																																															
Amplification patterns of the A*24:02 to A*24:144 alleles																																																																																															
Well ⁴																																																																																															
Well No.																																																HLA-A allele ^{2,3}																																															
Length of spec.																																																Length of int. pos. control ¹																																															
PCR product(s)																																																Well No.																																															
HLA-A allele ^{2,3}																																																HLA-A allele ^{2,3}																																															
*24:02:01:01, 24:02:02-24:02:04, 24:02:06-24:02:09, 24:02:11-24:02:12, 24:02:14-24:02:36, *24:142 ⁵																																																*24:02:01:02L																																															
*24:02:05																																																*24:02:10																																															
*24:02:13																																																*24:03:01-24:03:02																																															
*24:04																																																*24:05																																															
*24:06																																																*24:07																																															
*24:08																																																*24:09N																																															
*24:10																																																*24:11N																																															
*24:13:01																																																*24:13:02																																															
*24:14																																																*24:15																																															
*24:17																																																*24:18																																															
*24:19																																																*24:20																																															
*24:21:01-24:21:02																																																*24:22																																															
*24:23																																																*24:24																																															
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*24:31																																																*24:32																																															
*24:33																																																*24:34																																															
*24:35																																																*24:36N																																															
*24:37, 24:119																																																*24:38																																															
Well No.																																																Well No.																																															

Lot No.: **63K**

Lot-specific information

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4	5	5	5	5	5	5	5	6	6	6	6	6	6	6	7	7	7	7	7	7	8	8	8	8	8	8	8	8	9	9	9	9	Well No.				
9	0	1	2	3	4	5	6	7	8	9	0	1	2	3	4	5	6	7	8	9	0	1	2	3	4	5	6	7	8	9	0	1	2	3			
																																			*24:39		
																																				*24:40N	
																																					*24:41
																																					*24:42
																																					*24:43
																																					*24:44
																																					*24:45N
																																					*24:46
																																					*24:47
																																					*24:48N
																																					*24:49, 24:126
																																					*24:50
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																																					*24:81, 24:134
																																					*24:82, 24:128
																																					*24:83N
																																					*24:84N
																																					*24:85
																																					*24:86N
																																					*24:87
																																					*24:88
																																					*24:89
																																					*24:90N
																																					*24:91
																																					*24:92
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																																					*24:96
																																					*24:97
																																					*24:98
																																					*24:99

Lot No.: **63K**

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Well No.									1 1 1				1 1 1 1				1 1 1 2				2 2 2 2				2 2 2 2				2 3 3 3				3 3 3 3				3 3 3 4				4 4 4 4				4 4 4 4																			
	1	2	3	4	5	6	7	8	9	0	1	2	3	4	5	6	7	8	9	0	1	2	3	4	5	6	7	8	9	0	1	2	3	4	5	6	7	8	9	0	1	2	3	4	5	6	7	8																
B*07:64, B*15:12, B*15:19																																																																
B*18:27																																																																
B*18:38																																																																
C*12:37																																																																

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*24 subtyping.

In addition, wells number 3, 9, 15, 21 to 24, 26 to 31, 34, 35, 38, 39, 43, 44, 47, 50 to 52, 60 to 62, 66, 68, 71, 77, 78, 83 and 90 contain the primer pair giving rise to the shorter, 800 bp, internal positive control band in order to allow kit identification.

²The sequence of the A*2401 has been shown to be in error.

The sequence of the A*2412 allele has been shown to be identical to A*24:08.

The A*2416 allele has been renamed to A*31:08.

The A*2465 allele has been renamed to A*24:13:02.

³The A*24:37 and 24:119 alleles can be distinguished by the different sizes of the specific PCR products generated by primer mix 31.

The A*24:49 and 24:126 alleles can be distinguished by the different sizes of the specific PCR products generated by primer mix 38.

The A*24:81 and 24:134 alleles can be distinguished by the different sizes of the specific PCR products generated by primer mix 70.

The A*24:82 and 24:128 alleles can be distinguished by the different sizes of the specific PCR products generated by primer mix 71.

The A*24:101 and 24:111 alleles can be distinguished by the different sizes of the specific PCR products generated by primer mix 83.

The A*24:102 and 24:103 alleles can be distinguished by the different sizes of the specific PCR products generated by primer mix 84.

The A*24:104 and 24:117 alleles can be distinguished by the different sizes of the specific PCR products generated by primer mix 85.

The A*24:105 and 24:121 alleles can be distinguished by the different sizes of the specific PCR products generated by primer mix 86.

The A*24:106 and 24:136 alleles can be distinguished by the different sizes of the specific PCR products generated by primer mix 87.

⁴Primer mix 11: Specific PCR fragment of 200 bp in the A* 24:08, 24:42 and 24:89 and in the A*02:76 and 30:22 alleles. Specific PCR fragment of 245 bp in the A*24:61 allele.

Primer mix 15: Specific PCR fragment of 105 bp in the A* *24:19, 24:44, 24:100 and 24:109 alleles. Specific PCR fragment of 385 bp in the A* 24:14-24:15, 24:51, 24:53, 24:57 and 24:92 and in the A*02:46, 02:48, 02:70, 02:129, 03:30, 30:07, 31:08, 32:05 and 33:21 alleles.

Primer mix 26: Specific PCR fragment of 90 bp in the A*24:96 allele. Specific PCR fragment of 220 bp in the A*24:22 allele.

Primer mix 27: Specific PCR fragment of 80 bp in the A*24:32 and A*32:05 alleles. Specific PCR fragment of 370 bp in the A*24:14 and in the A*02:46, 02:48, 02:70 and 02:129 alleles.

Primer mix 30: Specific PCR fragment of 125 bp in the A*24:21:01-24:21:02 and in the A*23:03:01-23:03:02, 29:07 and 31:29 and in the B*18:27 alleles. Specific PCR fragment of 200 bp in the A*24:59 allele.

Primer mix 31: Specific PCR fragment of 155 bp in the A*24:37 allele. Specific PCR fragment of 235 bp in the A*24:04, 24:109, 24:119 and 24:129 and in the A*01:02, 01:20 and 26:16 alleles.

Primer mix 38: Specific PCR fragment of 145 bp in the A*24:49 allele. Specific PCR fragment of 170 bp in the A*24:137 allele. Specific PCR fragment of 230 bp in the A*24:126 allele.

Primer mix 41: Specific PCR fragment of 200 bp in the A*24:26 and 24:62 and in the A*01:39, 26:29, 26:49, 31:05, 32:13, 33:10 and 66:10 alleles. Specific PCR fragment of 240 bp in the A*24:118 and 24:132N alleles.

Primer mix 45: Specific PCR fragment of 200 bp in the A*24:113 allele. Specific PCR fragment of 245 bp in the A*24:14, 24:52 and 24:132N and in the A*01:20, 01:66, 02:19, 02:36-02:37, 02:54, 02:255, 26:29, 26:49 and 66:10 and in the B*07:64, B*15:12 and B*15:19 alleles.

Lot No.: **63K**

Lot-specific information

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Well No.																																							
4	5	5	5	5	5	5	5	5	5	6	6	6	6	6	6	6	7	7	7	7	7	7	8	8	8	8	8	8	8	8	8	8	9	9	9	9			
9	0	1	2	3	4	5	6	7	8	9	0	1	2	3	4	5	6	7	8	9	0	1	2	3	4	5	6	7	8	9	0	1	2	3					
																																						B*07:64, B*15:12, B*15:19	
																																					B*18:27		
																																					B*18:38		
																																					C*12:37		
4	5	5	5	5	5	5	5	5	5	6	6	6	6	6	6	6	7	7	7	7	7	7	8	8	8	8	8	8	8	8	8	8	8	9	9	9	9		
9	0	1	2	3	4	5	6	7	8	9	0	1	2	3	4	5	6	7	8	9	0	1	2	3	4	5	6	7	8	9	0	1	2	3					
																																							Well No.

Primer mix 45: Specific PCR fragment of 200 bp in the A*24:113 allele. Specific PCR fragment of 245 bp in the A*24:14, 24:52 and 24:132N and in the A*01:20, 01:66, 02:19, 02:36-02:37, 02:54, 02:255, 26:29, 26:49 and 66:10 and in the B*07:64, B*15:12 and B*15:19 alleles.

Primer mix 47: Specific PCR fragment of 200 bp in the A*24:18, 24:56 and 24:123 alleles. Specific PCR fragment of 410 bp in the A*24:26 and in the A*03:30, 30:07, 31:08 and 32:05 alleles.

Primer mix 49: Specific PCR fragment of 215 bp in the A*24:91 allele. Specific PCR fragment of 245 bp in the A*24:23 allele.

Primer mix 51: Specific PCR fragment of 165 bp in the A*24:140 allele. Specific PCR fragment of 215 bp in the A*24:38 allele.

Primer mix 59: Specific PCR fragment of 230 bp in the A*24:143 allele. Specific PCR fragment of 255 bp in the A*24:68 allele. Specific PCR fragment of 285 bp in the A*24:127 allele.

Primer mix 61: Specific PCR fragment of 105 bp in the A*24:70 allele. Specific PCR fragment of 280 bp in the A*24:127 and 24:141 alleles.

Primer mix 64: Specific PCR fragment of 115 bp in the A*24:124 and in the A*31:07 and 31:10 alleles. Specific PCR fragment of 170 bp in the A*24:74 allele.

Primer mix 65: Specific PCR fragment of 80 bp in the A*24:75 allele. Specific PCR fragment of 235 bp in the A*24:90N and the A*02:88N alleles.

Primer mix 68: Specific PCR fragment of 230 bp in the A*24:143 allele. Specific PCR fragment of 285 bp in the A*24:78 and 24:141 alleles.

Primer mix 70: Specific PCR fragment of 110 bp in the A*24:134 allele. Specific PCR fragment of 250 bp in the A*24:81 allele.

Primer mix 71: Specific PCR fragment of 130 bp in the A*24:128 allele. Specific PCR fragment of 260 bp in the A*24:82 and in the A*29:13, 31:07-31:08 and 31:10 alleles.

Primer mix 73: Specific PCR fragment of 100 bp in the A*24:84N allele. Specific PCR fragment of 170 bp in the A*24:131 and 24:138 and in the A*02:17:01-02:17:02, 02:108 and 02:110 alleles.

Primer mix 76: Specific PCR fragment of 170 bp in the A*24:76 allele. Specific PCR fragment of 260 bp in the A*24:98 allele.

Primer mix 77: Specific PCR fragment of 145 bp in the A*24:122 allele. Specific PCR fragment of 210 bp in the A*24:06, 24:87 and 24:138 and in the A*23:02 alleles.

Primer mix 80: Specific PCR fragment of 165 bp in the A*24:140 allele. Specific PCR fragment of 220 bp in the A*24:95 allele.

Primer mix 81: Specific PCR fragment of 100 bp in the A*24:139 allele. Specific PCR fragment of 215 bp in the A*24:97 and 24:133 alleles.

Primer mix 82: Specific PCR fragment of 185 bp in the A*24:99 and 24:130 alleles. Specific PCR fragment of 225 bp in the A*24:125 allele.

Primer mix 83: Specific PCR fragment of 135 bp in the A*24:111 allele. Specific PCR fragment of 275 bp in the A*24:101 allele.

Primer mix 84: Specific PCR fragment of 95 bp in the A*24:103 allele. Specific PCR fragment of 210 bp in the A*24:107 allele. Specific PCR fragment of 290 bp in the A*24:102 allele.

Primer mix 85: Specific PCR fragment of 145 bp in the A*24:117 allele. Specific PCR fragment of 210 bp in the A*24:104 and in the A*03:30 and 32:05 alleles.

Primer mix 86: Specific PCR fragment of 190 bp in the A*24:121 allele. Specific PCR fragment of 255 bp in the A*24:105 allele.

Primer mix 87: Specific PCR fragment of 90 bp in the A*24:17, 24:41, 24:62 and 24:106 and in the A*29:07 and 31:29 alleles. Specific PCR fragment of 120 bp in the A*24:110 allele. Specific PCR fragment of 195 bp in the A*24:136 alleles.

Primer mix 89: Specific PCR fragment of 75 bp in the A*24:07, 24:108 and 24:131 and in the A* 23:13 alleles. Specific PCR fragment of 270 bp in the A*24:112 allele.

⁵Modified sequence as of allele database 3.7.0: A*24:142 corrected at positions 124-5. As a consequence, the A*24:142 allele is not amplified by primer mixes 35 and 80.

'w', might be weakly amplified.

Primers

Well No.	1	2	3	4	5	6	7	8	9	10	11	12
5'-primer(s) ¹	650 5'-CCC 3'	368 5'-gTT 3'	368 5'-gTT 3'	368 5'-gTT 3'	368 5'-gTT 3'	368 5'-gTT 3'	317 5'-gCT 3'	265 5'-CAg 3'	98 5'-CTC 3'	282 5'-CAC 3'	98 5'-CTC 3'	28 5'-TCg 3'
										282 5'-CAT 3'		
3'-primer(s) ²	819 5'-ggT 3'	570 5'-CAC 3'	539 5'-TCT 3'	538 5'-CAA 3'	502 5'-CTT 3'	502 5'-CTg 3'	368 5'-CAA 3'	299 5'-TCg 3'	282 5'-gAC 3'	368 5'-CAA 3'	256 5'-CCC 3'	92 5'-AAC 3'
				538 5'-CCA 3'					282 5'-gAC 3'		303 5'-AgT 3'	
				555 5'-CCA 3'								
Well No.	1	2	3	4	5	6	7	8	9	10	11	12
Well No.	13	14	15	16	17	18	19	20	21	22	23	24
5'-primer(s) ¹	453 5'-AAA 3'	678 5'-AgA 3'	265 5'-CAg 3'	368 5'-gTT 3'	368 5'-gTT 3'	2 nd 5'-CgA 3'	678 5'-AgA 3'	3 rd 5'-ATA 3'	144 5'-gCC 3'	485 5'-CAg 3'	144 5'-gCC 3'	98 5'-CTC 3'
3'-primer(s) ²	570 5'-CCg 3'	742 5'-CTA 3'	320 5'-AgA 3'	413 5'-gCC 3'	559 5'-CCg 3'	570 5'-CCg 3'	831 5'-TCC 3'	621 5'-ggg 3'	259 5'-CTg 3'	570 5'-CCg 3'	292 5'-gTg 3'	299 5'-CCA 3'
	570 5'-CAg 3'		341 5'-CgT 3'		559 5'-CCg 3'						292 5'-gTg 3'	
			368 5'-CAT 3'									
Well No.	13	14	15	16	17	18	19	20	21	22	23	24
Well No.	25	26	27	28	29	30	31	32	33	34	35	36
5'-primer(s) ¹	368 5'-gTT 3'	368 5'-gTT 3'	265 5'-CAg 3'	98 5'-CTC 3'	98 5'-CTC 3'	368 5'-gTT 3'	98 5'-CTC 3'	385 5'-ggC 3'	368 5'-gTT 3'	98 5'-CTC 3'	98 5'-CTT 3'	242 5'-gCT 3'
											105 5'-Tgg 3'	243 5'-CCT 3'
											125 5'-CgC 3'	
3'-primer(s) ²	527 5'-CCT 3'	419 5'-CgA 3'	302 5'-ggC 3'	214 5'-CCA 3'	265 5'-CCg 3'	453 5'-TCg 3'	212 5'-gCA 3'	570 5'-CCg 3'	427 5'-gTA 3'	250 5'-CA 3'	265 5'-CCC 3'	317 5'-ggA 3'
	539 5'-TCA 3'	545 5'-AgA 3'	355 5'-gAC 3'			453 5'-TCA 3'	289 5'-AgC 3'		427 5'-gTT 3'			
	555 5'-CCA 3'					527 5'-CCg 3'	299 5'-TCg 3'					
Well No.	25	26	27	28	29	30	31	32	33	34	35	36
Well No.	37	38	39	40	41	42	43	44	45	46	47	48
5'-primer(s) ¹	368 5'-gTT 3'	77 5'-CTT 3'	98 5'-CTA 3'	28 5'-TCg 3'	370 5'-TTA 3'	98 5'-CTC 3'	368 5'-gTT 3'	355 5'-CCA 3'	362 5'-AgA 3'	385 5'-ggC 3'	28 5'-TCC 3'	368 5'-gTT 3'
		134 5'-CCA 3'			375 5'-TgA 3'			363 5'-ATA 3'	362 5'-AgA 3'		115 5'-ggT 3'	
		160 5'-ACT 3'			404 5'-CCA 3'				375 5'-TgA 3'		368 5'-gTT 3'	
					414 5'-CAg 3'				410 5'-gTg 3'			
3'-primer(s) ²	532 5'-CTA 3'	265 5'-CCC 3'	265 5'-CCC 3'	81 5'-gAT 3'	570 5'-CCg 3'	259 5'-gTT 3'	488 5'-CCT 3'	570 5'-CCg 3'	570 5'-CCg 3'	453 5'-TCT 3'	265 5'-CCC 3'	524 5'-CAC 3'
	544 5'-ggg 3'										527 5'-CCT 3'	524 5'-CAC 3'
Well No.	37	38	39	40	41	42	43	44	45	46	47	48

Lot No.: **63K**

Lot-specific information

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Well No.	49	50	51	52	53	54	55	56	57	58	59	60
5'-primer(s) ¹	368	98	90	630	368	98	98	28	361	414	368	28
	5'-gTT 3'	5'-CTC 3'	5'-AgC 3'	5'-AAg 3'	5'-gTT 3'	5'-CTC 3'	5'-CTC 3'	5'-TCg 3'	5'-AgT 3'	5'-gAA 3'	5'-gTT 3'	5'-TCg 3'
			142									
			5'-TCA 3'									
3'-primer(s) ²	542	290	265	831	559	221	295	127	453	570	559	131
	5'-CTT 3'	5'-CAA 3'	5'-CCC 3'	5'-TCC 3'	5'-CTC 3'	5'-ACA 3'	5'-TCA 3'	5'-CTT 3'	5'-TCT 3'	5'-CCg 3'	5'-CAg 3'	5'-ggA 3'
	570										582	
	5'-CAg 3'										5'-TAg 3'	
											614	
											5'-TgA 3'	
Well No.	49	50	51	52	53	54	55	56	57	58	59	60

Well No.	61	62	63	64	65	66	67	68	69	70	71	72
5'-primer(s) ¹	368	530	409	186	420	98	678	368	98	359	98	699
	5'-gTT 3'	5'-ggT 3'	5'-ggC 3'	5'-AgA 3'	5'-TAg 3'	5'-CTC 3'	5'-AgA 3'	5'-gTT 3'	5'-CTC 3'	5'-CCT 3'	5'-CAC 3'	5'-TAA 3'
				243	575					499	228	
				5'-CCT 3'	5'-gCg 3'					5'-TCC 3'	5'-ATg 3'	
3'-primer(s) ²	434	616	502	317	616	256	866	559	163	570	317	777
	5'-CCC 3'	5'-CgT 3'	5'-CTT 3'	5'-ggA 3'	5'-CgT 3'	5'-CTg 3'	5'-gAT 3'	5'-CAg 3'	5'-Cgg 3'	5'-CCg 3'	5'-ggA 3'	5'-gCA 3'
	605							605				
	5'-gCC 3'							5'-gCC 3'				
	614							614				
	5'-TgA 3'							5'-TgT 3'				
Well No.	61	62	63	64	65	66	67	68	69	70	71	72

Well No.	73	74	75	76	77	78	79	80	81	82	83	84
5'-primer(s) ¹	368	368	368	368	368	355	355	88	368	368	98	368
	5'-gTT 3'	5'-gTT 3'	5'-gTT 3'	5'-gTT 3'	5'-gTT 3'	5'-CCA 3'	5'-CCg 3'	5'-Tgg 3'	5'-gTT 3'	5'-gTT 3'	5'-CTC 3'	5'-gTT 3'
				650			365	125				
				5'-CCT 3'			5'-gAC 3'	5'-CgC 3'				
								142				
								5'-TCA 3'				
3'-primer(s) ²	426	525	616	587	473	453	570	265	427	505	190	422
	5'-TCT 3'	5'-ACT 3'	5'-CgT 3'	5'-CCC 3'	5'-CgC 3'	5'-TCT 3'	5'-CCg 3'	5'-CCC 3'	5'-gTT 3'	5'-gCT 3'	5'-ggT 3'	5'-AgC 3'
	497			777	539				536	517	333	538
	5'-Tgg 3'			5'-gCA 3'	5'-TCC 3'				5'-gCC 3'	5'-CgT 3'	5'-CTg 3'	5'-gTg 3'
									542	553		617
									5'-CTg 3'	5'-CTT 3'		5'-CCA 3'
Well No.	73	74	75	76	77	78	79	80	81	82	83	84

Well No.	85	86	87	88	89	90	91	92	93
5'-primer(s) ¹	98	358	368	134	89	368	397	626	89
	5'-CTT 3'	5'-TCg 3'	5'-gTT 3'	5'-CCA 3'	5'-gAA 3'	5'-gTT 3'	5'-gCC 3'	5'-CCA 3'	5'-gAA 3'
	159	419		141	282				
	5'-gAA 3'	5'-gTC 3'		5'-ATg 3'	5'-CAg 3'				
3'-primer(s) ²	265	570	418	265	317	421	570	777	317
	5'-CCC 3'	5'-CCg 3'	5'-gTC 3'	5'-CCC 3'	5'-ggA 3'	5'-ggT 3'	5'-CCg 3'	5'-gCA 3'	5'-ggA 3'
			448						
			5'-CAC 3'						
			521						
			5'-ggA 3'						
Well No.	85	86	87	88	89	90	91	92	93

¹The nucleotide position, in the 1st, 2nd, 3rd or 4th exons or the 2nd 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.

²The 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.

CELL LINE VALIDATION SHEET																					
HLA-A*24 SSP subtyping kit																					
					Lot No.:	Well															
						1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
						200846501	200846502	200846503	200846504	200846505	200846506	200846507	201078508	200846509	201078510	200846511	200846512	200846513	200846514	201078515	200846516
	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				-	+	-	+	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			+	+	+	-	+	-	+	-	-	+	-	-	-	-	-	-
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			-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

CELL LINE VALIDATION SHEET																			
HLA-A*24 SSP subtyping kit																			
				Well															
				17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32
				200846517	200846518	200846519	200846520	200846521	200846522	200846523	200846524	200846525	200962126	200846527	200846528	200846529	201078530	201078531	200846532
	IHWC cell line	A*	A*	Lot No.:															
1	9001 SA	*24:02		-	-	+	-	-	-	-	-	-	-	-	-	-	-	-	-
2	9280 LK707	*02:01		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
3	9011 E4181324	*01:01		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	+
4	9275 GU373	*30:01		-	-	-	-	-	-	-	-	+	-	-	-	-	-	-	-
5	9009 KAS011	*01:01		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	+
6	9353 SM	*02:01	*26:03	-	-	-	-	-	-	-	+	-	-	-	-	-	-	-	-
7	9020 QBL	*26:01		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
8	9025 DEU	*31:01		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
9	9026 YAR	*26:01		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
10	9107 LKT3	*24:02		-	-	+	-	-	-	-	-	-	-	-	-	-	-	-	-
11	9051 PITOUT	*29:02		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
12	9052 DBB	*02:01		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
13	9004 JESTHOM	*02:01		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
14	9071 OLGA	*31:01		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
15	9075 DKB	*24:02		-	-	+	-	-	-	-	-	-	-	-	-	-	-	-	-
16	9037 SWEIG007	*29:02		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
17	9282 CTM3953540	*03:01	*80:01	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
18	9257 32367	*33:03	*74:01	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
19	9038 BM16	*02:01		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
20	9059 SLE005	*02:01		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
21	9064 AMALA	*02:17		-	-	-	-	-	-	-	-	+	-	-	-	-	-	-	-
22	9056 KOSE	*02:01		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
23	9124 IHL	*02:01	*34:01	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
24	9035 JBUSH	*32:01		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
25	9049 IBW9	*33:01		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
26	9285 WT49	*02:05		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
27	9191 CH1007	*24:10	*29:01	+	-	+	-	-	-	-	-	-	-	-	-	-	-	-	-
28	9320 BEL5GB	*02:01	*29:02	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
29	9050 MOU	*29:02		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
30	9021 RSH	*30:01	*68:02	-	-	-	-	-	-	-	-	+	-	-	-	-	-	-	-
31	9019 DUCAF	*30:02		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
32	9297 HAG	*02:01		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
33	9098 MT14B	*31:01		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
34	9104 DHIF	*31:01		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
35	9302 SSTO	*32:01		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
36	9024 KT17	*02:06	*11:01	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
37	9065 HHKB	*03:01		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
38	9099 LZL	*02:17		-	-	-	-	-	-	-	-	+	-	-	-	-	-	-	-
39	9315 CML	*01:01	*03:01	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	+
40	9134 WHONP199	*02:07	*30:01	-	-	-	-	-	-	-	-	+	-	-	-	-	-	-	-
41	9055 H0301	*03:01		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
42	9066 TAB089	*02:07		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
43	9076 T7526	*02:06	*02:07	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
44	9057 TEM	*66:01		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
45	9239 SHJO	*23:01	*24:02	-	-	+	-	-	-	-	-	+	-	-	-	-	-	-	-
46	9013 SCHU	*03:01		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
47	9045 TUBO	*02:16	*03:01	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
48	9303 TER-ND	*02:01	*11:01	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

CELL LINE VALIDATION SHEET																			
HLA-A*24 SSP subtyping kit																			
				Well															
				33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48
				201078533	200846534	201078535	201078536	200846537	201078538	200846539	200846540	201078541	200846542	200846543	200846544	201078545	200846546	201078547	200962148
	HLWC 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	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

CELL LINE VALIDATION SHEET																			
HLA-A*24 SSP subtyping kit																			
				Well															
				49	50	51	52	53	54	55	56	57	58	59	60	61	62	63	64
				200962149	200846550	201078551	200962152	200846553	201078554	200846555	200846556	200846557	200962158	201078559	200846560	201078561	200846562	200846563	201078564
	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	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

CELL LINE VALIDATION SHEET																			
HLA-A*24 SSP subtyping kit																			
				Well															
				65	66	67	68	69	70	71	72	73	74	75	76	77	78	79	80
				200962165	200846566	200846567	201078568	200846569	201078570	201078571	200846572	201078573	200846574	200846575	200962176	201078577	200962178	201078579	201078580
			Lot No.:																
	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	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	

CELL LINE VALIDATION SHEET																
HLA-A*24 SSP subtyping kit																
				Well												
				81	82	83	84	85	86	87	88	89	90	91	92	93
				201078581	201078582	201078583	201078584	201078585	201078586	201078587	201078588	201078589	201078590	201078591	201078592	201078593
			Lot No.:													
	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	-	-	-	-	-	-	-	-	-	-	-	-	-

CERTIFICATE OF ANALYSIS

Olerup SSP® HLA-A*24 SSP

Product number: 101.422-24/03 – including *Taq* pol.
Lot number: 63K
Expiry date: 2013-May-01
Number of tests: 24 tests – Product No. 101.422-24
3 tests – Product No. 101.422-03
Number of wells per test: 93

Well specifications:

Well No.	Production No.	Well No.	Production No.	Well No.	Production No.
1	2008-465-01	33	2010-785-33	65	2009-621-65
2	2008-465-02	34	2008-465-34	66	2008-465-66
3	2008-465-03	35	2010-785-35	67	2008-465-67
4	2008-465-04	36	2010-785-36	68	2010-785-68
5	2008-465-05	37	2008-465-37	69	2008-465-69
6	2008-465-06	38	2010-785-38	70	2010-785-70
7	2008-465-07	39	2008-465-39	71	2010-785-71
8	2010-785-08	40	2008-465-40	72	2008-465-72
9	2008-465-09	41	2010-785-41	73	2010-785-73
10	2010-785-10	42	2008-465-42	74	2008-465-74
11	2008-465-11	43	2008-465-43	75	2008-465-75
12	2008-465-12	44	2008-465-44	76	2009-621-76
13	2008-465-13	45	2010-785-45	77	2010-785-77
14	2008-465-14	46	2008-465-46	78	2009-621-78
15	2010-785-15	47	2010-785-47	79	2010-785-79
16	2008-465-16	48	2009-621-48	80	2010-785-80
17	2008-465-17	49	2009-621-49	81	2010-785-81
18	2008-465-18	50	2008-465-50	82	2010-785-82
19	2008-465-19	51	2010-785-51	83	2010-785-83
20	2008-465-20	52	2009-621-52	84	2010-785-84
21	2008-465-21	53	2008-465-53	85	2010-785-85
22	2008-465-22	54	2010-785-54	86	2010-785-86
23	2008-465-23	55	2008-465-55	87	2010-785-87
24	2008-465-24	56	2008-465-56	88	2010-785-88
25	2008-465-25	57	2008-465-57	89	2010-785-89
26	2009-621-26	58	2009-621-58	90	2010-785-90
27	2008-465-27	59	2010-785-59	91	2010-785-91
28	2008-465-28	60	2008-465-60	92	2010-785-92
29	2008-465-29	61	2010-785-61	93	2010-785-93
30	2010-785-30	62	2008-465-62		
31	2010-785-31	63	2008-465-63		
32	2008-465-32	64	2010-785-64		

The specificity of each primer solution of the kit has been tested against 48 well characterized cell line DNAs.

No DNAs carrying the alleles to be amplified by primer solutions 8, 11, 14, 21, 22, 26 to 29, 31, 33 to 36, 38 to 43, 45, 47, 49 to 53, 55 to 72, 74 to 77, 79 to 86, 88, 90, 92 and 93 were available. The specificities of the primers in primer solutions 8, 11, 26, 27, 29, 36, 39, 41, 42, 45, 47, 51, 53, 56 to 59, 63, 64, 68, 71, 76, 77, 79, 80, 82, 84, 85, 88 and 93 were tested by separately adding one or two additional 5'-primers, respectively one or two additional 3'-primers.

In primer solutions 14, 21, 28, 33, 34, 40, 43, 49, 50, 55, 60, 61, 66, 67, 69, 74, 75, 81, 83 and 90 it was only possible to test the 5'primer, the 3'-primers were not possible to test.

In primer solutions 22, 35, 52, 62, 65, 70, 72, 86 and 92 it was only possible to test the 3'-primers, the 5'-primers were not possible to test.

In primer solution 10, 36, 38, 41, 45, 47, 51, 64, 71, 76, 79, 80, 85 and 88 one or two 5'-primers were not possible to test, and in primer solutions 4, 11, 13, 15, 23, 37, 59, 68, 76, 77, 82, 84 and 87 one or two 3'-primers were not possible to test.

Additional primers in primer solutions 4, 15, 25, 30 and 89 were tested by separately adding additional 5'-primers or 3'-primers.

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

Date of approval: 2012-January-24

Approved by:

Production Quality Control

Declaration of Conformity

Product name: *Olerup* SSP® HLA-A*24
Product number: 101.422-24/03
Lot number: 63K

Intended use: HLA-A*24 high resolution histocompatibility testing

Manufacturer: *Olerup* SSP AB
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Phone: +46-8-717 88 27
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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
2012-January-24

Ann-Cathrin Jareman
Head of QA and Regulatory Affairs

Lot No.: **63K**

Lot-specific information

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