

Olerup SSP[®] HLA-B low resolution

Product number:	101.501-48u/12u – without <i>Taq</i> pol.
Lot number:	63M
Expiry date:	2014-March-01
Number of tests:	48 tests – Product No. 101.501-48u 12 tests – Product No. 101.501-12u
Number of wells per test:	47 + 1
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. 63M.

**CHANGES COMPARED TO THE PREVIOUS *OLERUP SSP*[®]
HLA-B LOW RESOLUTION LOT**

The HLA-B low resolution specificity and interpretation tables have been updated for the HLA-B alleles reported since the previous *Olerup SSP*[®] HLA-B low resolution lot (**Lot No. 06L**) was made.

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

Well	5'-primer	3'-primer	rationale
5	Added	-	Increased yield of specific PCR product.

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Lot-specific information

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Well **48** contains Negative Control primer pairs, that will amplify more than 95% of the *Olerup* SSP® HLA Class I, DRB, DQB1 and DPB1 amplicons as well as the amplicons generated by control primer pairs.

PCR product sizes range from 75 to 430 base pairs.
The PCR product generated by the control primer pair is 430 base pairs.

Length of PCR product	105	200	105	80	75	80
5'-primer¹	164	340	440	45	45	43
	5'-CAC ^{3'}	5'-Agg ^{3'}	5'-TTA ^{3'}	5'-Tgg ^{3'}	5'-Tgg ^{3'}	5'-Tgg ^{3'}
3'-primer²	231	2nd I	507	59	58	57
	5'-TgC ^{3'}	5'-AAA ^{3'}	5'-TTg ^{3'}	5'-CTC ^{3'}	5'-ggC ^{3'}	5'-CTC ^{3'}
A*	+	+	+			
B*	+	+	+			
C*	+	+	+			
DRB1				+	+	
DRB3				+	+	
DRB5				+		
DQB1					+	
DPB1						+

¹The nucleotide position for HLA class I genes and the codon for HLA class II genes, in the 2nd or 3rd exon, matching the specificity-determining 3'-end of the primer is given. Nucleotide and codon 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 for HLA class I genes and the codon for HLA class II genes, in the 2nd or 3rd exon or the 2nd intron, matching the specificity-determining 3'-end of the primer is given in the anti-sense direction. Nucleotide and codon numbering as on the www.ebi.ac.uk/imgt/hla web site. The sequence of the 3 terminal nucleotides of the primer is given.

PRODUCT DESCRIPTION

HLA-B low resolution SSP typing

CONTENT

The primer set contains 5'- and 3'-primers for grouping the B*07:02 to B*83:01 alleles into the corresponding serological groups B7 to B81 as well as primer pairs for recognizing the Bw4 and Bw6 sequence motifs.

PLATE LAYOUT

Each test consists of 48 PCR reactions in a 48 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
33	34	35	36	37	38	39	40
41	42	43	44	45	46	47	48

Wells 1 to 47 – HLA-B low resolution primers.

Well 48 – Negative Control.

The 48 well cut PCR plate is marked with ‘HLA-B low’ in silver/gray ink.

Well No. 1 is marked with the Lot No. ‘63M’.

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 48 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

Only HLA-B alleles will be amplified by the HLA-B low resolution typing kit, except that primer mix 1 will amplify the C*02:23 and C*04:77 alleles, primer mix 3 will amplify the C*03:05, C*03:25 and C*03:27 alleles, primer mix 4 will amplify the C*01:30 allele, primer mix 6 will amplify the A*23:31, A*24:106 and C*16:10 alleles, the C*07:46 allele will be amplified by primer mix 8, primer mix 17 will amplify the C*03:102 allele, primer mix 29 will amplify the C*15:25 allele, primer mix 31 will amplify the C*15:39 allele, primer mix 40 will amplify the C*15:02:04 allele, primer mix 41 will amplify the C*03:12, C*03:19 and C*03:102 alleles, primer mix 43 will weakly amplify the C*02:06 allele and primer mix 45 will amplify the A*68:56, C*06:20 and C*12:50 alleles. Thus, the interpretation of HLA-B low resolution typings is only influenced by the A*23:31, A*24:106, A*68:56, C*01:30, C*02:06, C*02:23, C*03:05, C*03:12, C*03:19, C*03:25, C*03:27, C*03:102, C*04:77, C*06:20, C*07:46, C*12:50, C*15:02:04, C*15:25, C*15:39 and C*16:10 alleles and not by other alleles of other HLA class I genes.

UNIQUELY IDENTIFIED ALLELES

All the HLA-B alleles recognized by the HLA Nomenclature Committee in October 2010¹ will be amplified by the primers in the HLA-B low resolution SSP kit. The HLA-B alleles will be grouped into their corresponding serological specificities².

¹HLA-B alleles listed on the IMGT/HLA web page 2010-October-15, release 3.2.0, www.ebi.ac.uk/imgt/hla.

²It is not possible to identify all serological splits and combinations of the B15 group of alleles, as the serological reactivity of several of the B*15 alleles is not known.

The resolution has been updated to fulfill the NMDP medium resolution confirmatory typing requirements effective from February 1st 2001.

DNA-based HLA-B typing resolution required:

B*07:xx, B*08:xx, B*13:xx, B*14:xx, B*18:xx, B*27:xx, B*15:22, B*35:xx, B*37:xx, B*38:xx, B*39:xx, B*40:05, B*41:xx, B*42:xx, B*44:xx, B*45:xx, B*46:xx, B*47:xx, B*48:xx, B*49:xx, B*50:xx, B*51:xx, B*52:xx, B*53:xx, B*54:xx, B*55:xx, B*56:xx, B*57:xx, B*58:xx, B*59:xx, B*67:xx, B*73:xx, B*78:xx, B*81:xx, B*82:xx,	
B*40EJD ^a	40:01, 40:07, 40:10, 40:12, 40:14, 40:15, 40:16
B*40EJB ^b	40:02, 40:03, 40:04, 40:06, 40:08, 40:09, 40:11, 40:13, 40:18, 40:19, 40:20
B*15EJA ^c	15:01, 15:04, 15:05, 15:06, 15:07, 15:20, 15:24, 15:25, 15:26N, 15:27, 15:28, 15:30, 15:32, 15:33, 15:34, 15:35, 15:36, 15:38, 15:39, 15:40, 15:43, 15:45
B*15AHM ^d	15:16, 15:17
B*15EHZ ^e	15:03, 15:09, 15:10, 15:18, 15:23, 15:29, 15:37, 15:47
B*15CYP ^f	15:02, 15:08, 15:11, 15:15, 15:21, 15:31, 15:44
B*15AND ^g	15:12, 15:14, 15:19
B*1513 ^h	

^aB60 serologic equivalent cluster.

^bB61 serologic equivalent cluster.

^cB62 serologic equivalent cluster.

^dB63 serologic equivalent cluster.

^eB70 serologic equivalent cluster.

^fB75 serologic equivalent cluster.

^gB76 serologic equivalent cluster.

^hB77 serologic equivalent cluster.

The B*08:26, 08:50 and 08:62 and the B*42:07 alleles give rise to identical amplification patterns with the HLA-B low resolution primer set. These alleles can be separated by the respective high resolution primer sets.

The B*14:08 and the B*39:25N, 39:30, 39:32-39:34, 39:47 and 39:50 alleles give rise to identical amplification patterns with the HLA-B low resolution primer set. These alleles can be separated by the respective high resolution primer sets.

The B*18:29 and the B*35:32, 35:37, 35:53N, 35:64, 35:66, 35:68:01-35:68:02, 35:99 and 35:118-35:119 alleles give rise to identical amplification patterns with the HLA-B low resolution primer set. These alleles can be separated by the respective high resolution primer sets.

The B*41:09 and the B*45:02 and B*45:03 alleles give rise to identical amplification patterns with the HLA-B low resolution primer set. These alleles can be separated by the respective high resolution primer sets.

The B*55:04, 55:08, 55:13, 55:27 and 55:46 and the B*56:15, 56:19N and 56:22 alleles give rise to identical amplification patterns with the HLA-B low resolution primer set. These alleles can be separated by the respective high resolution primer sets.

The B*55:23 and B*55:32 and the B*56:18 alleles give rise to identical amplification patterns with the HLA-B low resolution primer set. These alleles can be separated by the respective high resolution primer sets.

SPECIFICITY TABLE

HLA-B low resolution SSP typing

Specificities and sizes of the PCR products of the 48 primer mixes used for HLA-B low resolution SSP typing

Primer Mix	Size of spec. PCR product ¹	Size of control band ²	HLA-B serol. ³	Amplified HLA-B alleles ^{4,5}
1^{6,10}	110 bp	800 bp	7, 703, 40, 41, 42, 48, 61	*07:02:01-07:18:02, 07:20-07:32, 07:34-07:39, 07:41-07:47, 07:49N-07:50, 07:52, 07:54-07:59, 07:61-07:99, 07:101-07:117, 15:138, 37:07, 40:15-40:16, 40:23, 40:32, 40:98, 40:136, 40:158, 41:08, 42:05:01-42:05:02, 48:05, 48:08, 48:15, C*02:23, C*04:77
2	215 bp	1070 bp	8, 44	*08:01:01-08:05, 08:07-08:25, 08:27-08:49, 08:51-08:61, 08:63-08:64, 08:66, 15:142, 15:180, 44:49, 51:68
3	140 bp, 235 bp	1070 bp	7, 8, 13, 15, 35, 4005, 44, 49, 61, 62, 77	*07:20, 07:24, 07:60, 07:100, 08:21, 08:25, 13:01:01-13:04, 13:06-13:08Q, 13:10-13:23, 13:25-13:38, 13:40, 15:07:01-15:07:02, 15:36 ^w , 15:45, 15:55, 15:68, 15:89 ^w , 15:126, 15:205, 15:207, 35:05:01-35:05:02, 35:16-35:17, 35:22, 35:30, 35:51, 35:58, 35:72, 35:89, 35:97, 35:113-35:114, 35:125, 40:05, 40:71, 44:08 ^w , 44:54, 44:57 ^w , 44:60, 44:106, 44:110, 46:12, 46:20, 51:64, 53:14, 58:18, C*03:05, C*03:25, C*03:27
4^{7,8}	130 bp, 265 bp	800 bp	12, 13, 14, 17, 21, 35, 40, 41, 44, 45, 47, 49, 50, 60, 61, 64, 65	*13:01:01-13:04, 13:06-13:13, 13:15-13:23, 13:25-13:40, 14:01:01-14:04, 14:07N, 14:09, 14:11-14:12, 14:14-14:19, 15:46, 15:53, 15:106, 18:44, 35:46-35:47, 35:63, 40:01:01-40:01:17, 40:07, 40:10:01-40:10:02, 40:14:01-40:16, 40:22N-40:23, 40:25, 40:30-40:34, 40:36, 40:38, 40:42-40:43, 40:45, 40:47-40:49, 40:51-40:55, 40:58-40:63, 40:65-40:67, 40:69, 40:72:01-40:73, 40:76-40:77, 40:79-40:81, 40:84, 40:87:01-40:88, 40:92, 40:100-40:102, 40:106, 40:108, 40:110, 40:112-40:114, 40:116-40:118N, 40:121, 40:123-40:126, 40:128-40:130, 40:132, 40:134-40:136, 40:139-40:141, 40:146-40:147, 40:150-40:156, 40:158, 41:01-41:16, 44:02:01:01-44:03:06, 44:03:08-44:05:02, 44:09-44:39, 44:41:01-44:43:02, 44:45-44:56N, 44:58N-44:80, 44:82,

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5⁸	185 bp, 235 bp	800 bp	7, 16, 17, 27, 2708, 37, 38, 3901, 3902, 39, 64, 67	*14:01:01-14:01:02, 14:07N-14:08, 14:10, 14:12, 14:14, 14:19, 27:01-27:06, 27:08-27:10, 27:12-27:13, 27:16-27:18, 27:20, 27:23, 27:26-27:27, 27:29, 27:31, 27:35-27:37, 27:39-27:42, 27:44-27:46, 27:48-27:61, 27:64N-27:69, 27:72-27:73, 37:02, 38:01:01-38:02:02, 38:03, 38:07-38:24, 38:26, 39:01:01:01-39:01:01:02L, 39:01:03-39:01:08, 39:01:10-39:02:01, 39:03, 39:05:01-39:09, 39:11, 39:14-39:15, 39:18, 39:19:02, 39:22, 39:24:01-39:44, 39:46-39:48, 39:50-39:62, 47:04-47:05, 48:21, 67:01:01, 67:03
6	190 bp	800 bp	14, 35, 38, 39, 65	*07:28, 14:02:01-14:02:02, 14:02:04-14:02:05, 14:03-14:06:02, 14:09, 14:11, 14:13, 14:15-14:18, 15:77, 15:189, 35:26, 38:05, 39:04, 44:16, 44:37, 44:64:01-44:64:02, 44:91, 57:04, A*23:31, A*24:106, C*16:10
7	290 bp	1070 bp	15, 22, 62, 63, 71, 72, 75, 76, 77, 46	*15:01:01:01-15:01:03, 15:01:06-15:02:05, 15:03:03-15:08, 15:10:02-15:11:03, 15:11:05-15:15, 15:17:01:01-15:17:02, 15:19-15:21, 15:24-15:28, 15:30-15:36, 15:38:01-15:40, 15:42-15:46, 15:48, 15:50, 15:55-15:58, 15:60, 15:63, 15:65-15:66, 15:70-15:71, 15:73, 15:75-15:79N, 15:81-15:89, 15:92, 15:94N, 15:96-15:97, 15:101-15:102, 15:104-15:107, 15:109-15:113, 15:116-15:118, 15:120-15:122, 15:125-15:126, 15:128-15:129, 15:135-15:150, 15:152, 15:154-15:155, 15:157, 15:159-15:160, 15:162-15:172, 15:174-15:175, 15:177-15:179, 15:181N-15:185, 15:187-15:196, 15:199, 15:201-15:209N, 46:01:01-46:26
8	165 bp, 220 bp, 330 bp	1070 bp	5, 8, 12, 21, 22, 37, 41, 42, 44, 45, 48, 51, 56, 57, 60, 62, 70, 71, 72, 82	*08:01:01-08:05, 08:08N-08:12:03, 08:15-08:19N, 08:21-08:24, 08:26-08:27, 08:29-08:36, 08:38-08:39, 08:41-08:48, 08:50-08:54, 08:56-08:66, 15:03:01-15:03:03, 15:09-15:10:02, 15:18:01-15:18:04, 15:23, 15:29, 15:37, 15:46-15:47, 15:49, 15:51-15:54, 15:61-15:62, 15:64, 15:69, 15:72, 15:74, 15:80, 15:83, 15:90-15:91, 15:93, 15:98-15:99, 15:103, 15:106, 15:108,

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9^{8,9,11}	165 bp, 190 bp, 390 bp	1070 bp	5, 17, 21, 35, 51, 5102, 5103, 52, 56, 62, 63, 70, 78	*15:01:02, 15:09, 15:16:01-15:17:02, 15:67, 15:95, 15:162, 15:168, 15:177, 15:196, 15:208, 35:01:10, 35:04:02, 40:26, 40:28, 44:62, 51:01:01-51:01:03, 51:01:05-51:02:03, 51:03-51:09:02, 51:11N-51:12, 51:13:02-51:14, 51:16-51:23, 51:24:03-51:24:04, 51:26-51:33, 51:37-51:41N, 51:43-51:44N, 51:46, 51:48-51:61, 51:63-51:80, 51:82-51:91, 51:94-51:98N, 51:100-51:106, 52:01:01:01-52:01:04, 52:01:06-52:13, 52:15-52:22, 56:05:01-56:06, 56:21, 58:08, 78:01-78:07
10⁹	180 bp	800 bp	13, 22, 55, 60	*07:78, 13:01:01-13:02:09, 13:07N-13:09, 13:11, 13:14-13:20, 13:22:01-13:23, 13:25, 13:27-13:34, 13:36-13:40, 40:48, 45:10, 49:07, 55:09, 55:22, 55:24
11⁶	105 bp, 195 bp	1070 bp	8, 12, 27, 38, 39, 3902, 40, 44, 45, 48, 60, 70, 71, 72, 82	*07:27, 07:50, 08:04, 08:17, 08:54, 15:03:01-15:03:03, 15:47, 15:49, 15:54, 15:61-15:62, 15:64, 15:68-15:69, 15:91, 15:98, 15:103, 15:123, 15:127, 15:131-15:132, 15:151, 15:156, 15:158, 15:173, 18:37, 27:18, 27:29, 38:03, 39:02:01-39:02:02, 39:08, 39:13:01-39:13:02, 39:23, 39:39, 39:49, 40:12, 40:46, 40:93, 42:11, 44:10, 44:15, 44:18, 44:40, 44:44, 45:01, 45:05-45:07, 45:11-45:13, 48:01:01-48:05, 48:07-48:24, 50:02, 52:16, 55:18, 82:01-82:03
12	280 bp	1070 bp	5, 7, 8, 13, 15, 16, 17, 18, 22, 35, 40, 42, 44, 46, 48, 49, 51, 53, 55, 56, 57, 58, 60, 61, 62, 63, 70, 71,	*07:09, 07:11, 07:17, 08:28, 08:35, 08:37, 13:04, 13:10, 13:26, 15:01:01:01-15:01:04, 15:01:06-15:08, 15:11:01-15:16:01, 15:18:01-15:21, 15:23-15:29, 15:31-15:36, 15:38:01-15:40, 15:43-15:44, 15:46-15:47, 15:49-15:57, 15:60-15:62, 15:64-15:72, 15:74-15:76, 15:78:01-15:82, 15:84-15:85, 15:87-15:89, 15:91-15:98, 15:101-15:129, 15:131-15:132, 15:134-15:136, 15:138-15:149N,

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13	195 bp	1070 bp	27, 35, 37, 44, 58, 76	*15:12, 15:14, 15:19, 15:91, 15:131, 15:161, 35:45, 35:71, 37:01:01-37:09, 37:12-37:13, 37:15-37:21, 37:23-37:25, 38:17, 44:17, 44:43:01-44:43:02, 45:09, 46:17, 53:22, 58:07
14⁶	105 bp, 395 bp, 435 bp	1070 bp	5, 7, 15, 41, 42, 62, 63, 70, 71, 75, 77	*07:04, 07:25, 15:09-15:10:02, 15:13, 15:16:01-15:18:04, 15:21, 15:23-15:24, 15:37, 15:44, 15:51-15:52, 15:66-15:67, 15:72, 15:80, 15:87, 15:90, 15:93, 15:95, 15:99, 15:108, 15:114-15:115, 15:119, 15:124, 15:133-15:134, 15:153, 15:157, 15:161-15:162, 15:168, 15:176-15:177, 15:186, 15:189, 15:196-15:198, 15:200, 15:208, 40:136, 41:08, 42:05:01-42:05:02
15^{6,8}	115 bp, 150 bp	1070 bp	18	*18:01:01-18:15, 18:17N-18:28, 18:30-18:52
16⁶	80 bp	1070 bp	7, 27, 2708, 44, 60	*07:73, 27:01-27:21, 27:23-27:51, 27:53-27:66N, 27:68-27:73, 38:22, 40:46, 40:93, 44:40, 44:44
17	150 bp	800 bp	12, 13, 17, 18, 22, 27,	*08:49, 13:01:01-13:01:05, 13:06-13:07N, 13:12-13:13, 13:17, 13:20, 13:22:01-13:23,

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45^{6,8}	115 bp, 150 bp	1070 bp	15, 18,22, 27, 35, 39, 46, 55, 62, 72, 73, 75, 76	*07:100, 13:31, 15:01:01:01-15:01:04, 15:01:06-15:01:16, 15:01:18-15:01:20, 15:04, 15:07:01-15:08, 15:11:01-15:12, 15:14-15:15, 15:19, 15:24, 15:26N-15:28, 15:30, 15:32, 15:34-15:35, 15:38:01-15:38:02, 15:43, 15:45-15:46, 15:50, 15:53-15:54, 15:56- 15:58, 15:60, 15:63, 15:66, 15:68, 15:70- 15:71, 15:73, 15:75-15:77, 15:79N, 15:81- 15:82, 15:85, 15:87, 15:92, 15:94N, 15:96- 15:97, 15:101-15:102, 15:104-15:105, 15:109-15:111N, 15:113, 15:117-15:118, 15:120, 15:122, 15:125-15:126, 15:128- 15:129, 15:135, 15:137, 15:140, 15:142- 15:149N, 15:152, 15:154, 15:157, 15:159- 15:160, 15:163-15:167, 15:169, 15:171- 15:172, 15:174-15:175, 15:178, 15:180- 15:184, 15:187, 15:189-15:193, 15:201- 15:203, 15:205-15:207, 15:209N, 18:19, 27:25, 35:14:01-35:14:02, 35:43:01-35:44, 35:62, 35:67, 35:79, 35:86, 35:102, 35:117, 35:135, 39:18, 39:36, 46:01:01-46:02, 46:04- 46:05, 46:07N, 46:09-46:10, 46:12, 46:14- 46:17, 46:20, 46:22-46:24, 51:61, 52:21, 54:06, 55:21, 56:03, 73:01-73:02, A*68:56, C*06:20, C*12:50
46¹⁴	360 bp	1070 bp	Bw4	
47	350 bp	1070 bp	Bw6	
48¹⁵	-	-		Negative Control

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-B low resolution 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-B low resolution typing.

In addition, wells number 4 to 6, 10, 17, 20, 21, 30, 35 and 42 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 serological reactivity of all HLA-B alleles is not known. In this table we use the expert-assigned serological grouping in Tissue Antigens (2009) **73**:95-170 and the serological grouping of the sequence-defined allele.

⁴Nucleotide sequence information is available for only exons 2 and 3 of many HLA Class I alleles and for only exon 2 of many HLA Class II alleles and not for other exons or for the introns of these alleles. We assume that unknown sequences in these exons and in the introns are conserved within loci and within allelic groups.

The B*08:26, 08:50 and 08:62 and B*42:07 alleles give rise to identical amplification patterns with the HLA-B low resolution primer set. These alleles can be separated by the respective high resolution primer sets.

The B*14:08 and the B*39:25N, 39:30, 39:32-39:34, 39:47 and 39:50 alleles give rise to identical amplification patterns with the HLA-B low resolution primer set. These alleles can be separated by the respective high resolution primer sets.

The B*18:29 and the B*35:32, 35:37, 35:53N, 35:64, 35:68:01-35:68:02, 35:99 and 35:118-35:119 alleles give rise to identical amplification patterns with the HLA-B low resolution primer set. These alleles can be separated by the respective high resolution primer sets.

The B*41:09 and the B*45:02 and 45:03 alleles give rise to identical amplification patterns with the HLA-B low resolution primer set. These alleles can be separated by the respective high resolution primer sets.

The B*55:04, 55:08, 55:13, 55:27 and 55:46 and the B*56:15, 56:19N and 56:22 alleles give rise to identical amplification patterns with the HLA-B low resolution primer set. These alleles can be separated by the respective high resolution primer sets.

The B*55:23 and 55:32 and the B*56:18 alleles give rise to identical amplification patterns with the HLA-B low resolution primer set. These alleles can be separated by the respective high resolution primer sets.

⁵Due to sharing of sequence motifs, primer mix 1 will amplify the C*02:23 and C*04:77 alleles, primer mix 3 will amplify the C*03:05, C*03:25 and C*03:27 alleles, primer mix 4 will amplify the C*01:30 allele, primer mix 6 will amplify the A*23:31, A*24:106 and C*16:10 alleles, the C*07:46 allele will be amplified by primer mix 8, primer mix 17 will amplify the C*03:102 allele, primer mix 29 will amplify the C*15:25 allele, primer mix 31 will amplify the C*15:39 allele, primer mix 40 will amplify the C*15:02:04 allele, primer mix 41 will amplify the C*03:12, C*03:19 and C*03:102 alleles, primer mix 43 will weakly amplify the C*02:06 allele and primer mix 45 will amplify the A*68:56, C*06:20 and C*12:50 alleles.

⁶Specific PCR fragments shorter than 125 base pairs have a lower intensity and are less sharp than longer PCR bands.

⁷Primer mix 4 may yield less specific PCR product than the other HLA-B low resolution primer mixes in B*40, B*41, B*45, B*49 and B*50 alleles.

⁸Primer mixes 4, 5, 9, 15, 18, 21, 22, 39, 44 and 45 give a lower yield of specific PCR product than the other HLA-B low resolution primer mixes.

⁹Primer mixes 9, 10, 20 and 39 may give rise to nonspecific amplifications, most pronounced in primer mix 9.

¹⁰Primer mixes 1, 19, 20, 22 and 42 may give rise to a primer oligomer artifact.

¹¹The B*57 and B*58 alleles might be faintly amplified by primer mix 9.

¹²The C*17:01 to C*17:04 alleles might be faintly amplified by primer mix 25.

¹³Primer mixes 32 and 43 may generate a false positive band of about 800 base pairs. This band should be disregarded when interpreting HLA-B low resolution typings.

¹⁴The Bw4-associated HLA-A specificities A9, A23, A24, A2403, A25 and A32 are not amplified by the primer pair in primer mix 46.

¹⁵Primer mix 48 contains a negative control, which will amplify more than 95% of HLA amplicons as well as the amplicons generated by control primer pairs. PCR product sizes range from 75 to 200 base pairs. The PCR product generated by the control primer pair is 430 base pairs.

‘w’, might be weakly amplified.

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

INTERPRETATION TABLE																									
HLA-B low resolution SSP																									
Amplification patterns of the B*07:02 to B*83:01 alleles ¹²																									
		Well																							
		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24
Length of spec.		110	215											195				150							
PCR product(s)				235 140	265 130	235 185	190	290	330 220 165	390 190 165	180	195 105	280		435 395 105		150 115	80			400 245 60	210	170	110	395
																									425 160
Length of int. pos. control ¹		800	1070	1070	800	800	800	1070	1070	1070	800	1070	1070	1070	1070	1070	1070	800	1070	1070	800	800	1070	1070	1070
5'-primer(s) ²		5'-gAC 5' 527	5'-TCg 5' 97	5'-ggC 5' 209	5'-CCg 5' 103	5'-AAT 5' 103	5'-CCg 5' 103	5'-ggA 5' 45	5'-ggA 5' 45	5'-ggA 5' 45	5'-TTA 5' 420	5'-AgA 5' 206	5'-gTC 5' 419	5'-TCT 5' 142	5'-ggA 5' 45	5'-Cgg 5' 161	5'-gCT 5' 167	5'-TCA 5' 355	5'-gAC 5' 206	5'-ggA 5' 45	5'-TCT 5' 142	5'-ggC 5' 409	5'-gAA 5' 246	5'-ggC 5' 44	
		5'-gAC 5' 540		5'-AgC 5' 363	5'-CCg 5' 103	5'-AAT 5' 363	5'-CCg 5' 418		5'-ATA 5' 412	5'-ATA 5' 357	5'-AAA 5' 435	5'-TTA 5' 420		5'-gTC 5' 419	5'-gAC 5' 540					5'-gTT 5' 557	5'-gTC 5' 368	5'-TTA 5' 420			5'-Tgg 5' 357
				5'-AgC 5' 363	5'-AgT 5' 361															5'-ggA 5' 567	5'-gTC 5' 368	5'-TTA 5' 420			
3'-primer(s) ³		5'-gCT 5' 605	5'-Tgg 5' 272	5'-gTg 5' 309	5'-CgT 5' 193	5'-TAT 5' 246	5'-TAT 5' 246	5'-Tgg 5' 165	5'-CCT 5' 206	5'-TCC 5' 266	5'-CTC 5' 559	5'-Tgg 5' 272	5'-TAT 5' 301	5'-gTC 5' 301	5'-ATC 5' 309	5'-TgA 5' 272	5'-TCT 5' 234	5'-TCT 5' 204	5'-gCT 5' 463	5'-ggC 5' 302	5'-gTT 5' 259	5'-ggg 5' 311	5'-ggT 5' 544	5'-ggA 5' 317	
					5'-gTg 5' 583	5'-CTC 5' 559	5'-gCC 5' 572		5'-gTC 5' 538	5'-CAG 5' 583		5'-gCg 5' 572		5'-gCg 5' 570	5'-gCT 5' 605	5'-Tgg 5' 272					5'-TCC 5' 266	5'-gTC 5' 538			5'-gCg 5' 477
														5'-gCg 5' 572							5'-Tgg 5' 292				
																					5'-gTA 5' 292				
																					572				
Well No.		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24

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INTERPRETATION TABLE																																																																															
HLA-B low resolution SSP																																																																															
Amplification patterns of the B*07:02 to B*83:01 alleles ¹²																																																																															
Well																																																																															
25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48																																																								
180				115	215	130	90	175	90	430	145	300	160	210	180	180	90	90	95	115	360	350																																																									
1070	1070	1070	1070	1070	800	1070	1070	1070	1070	800	1070	1070	1070	1070	1070	1070	800	1070	1070	1070	1070	1070																																																									
5'-TCA				5'-TCA				5'-ATT				5'-ggC				5'-CTg				5'-ggC				5'-gCC				5'-Tgg				5'-CAG				5'-gAA				5'-CAG				5'-gCA				5'-ATT				5'-TTA				5'-ggC				5'-ggA				5'-gAC				5'-ACC				5'-CAG				5'-CAG			
363				418				357				209				368				363				206												418				420								209				369								463								141											
5'-Agg				5'-Agg				5'-Tgg				5'-ggg				5'-gTT				5'-AgC				5'-gAA				5'-gAA												5'-Agg				5'-TTA								5'-ggA				5'-TAC								5'-TgA								5'-CAG				5'-CAG			
499				572				538				583				418				499				527				262												559				420								538								317				311															
5'-ggA				5'-gTC				5'-ATC				5'-TCA				5'-gCC				5'-ggA				5'-CCT				5'-CTC				5'-CTC				5'-gTC				5'-CgT				5'-CAG				5'-CCC				5'-CCC				5'-gTT				5'-TgC				5'-ggA				5'-ggT											
Negative Control																																																																															
Length of spec. PCR product(s)																																																																															
Length of int. pos. control ¹																																																																															
5'-primer(s) ²																																																																															
3'-primer(s) ³																																																																															
Well No.																																																																															

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Well No.		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24
HLA-B allele ⁴	ser. ⁵																								
*07:02:01-07:02:20, 07:05:01-07:07, 07:10, 07:12-07:15, 07:18:01- 07:18:02, 07:21-07:23, 07:26, 07:29-07:31, 07:34- 07:35, 07:39, 07:41- 07:46, 07:49N, 07:52, 07:55-07:59, 07:61-07:64, 07:66-07:68:02, 07:70- 07:72, 07:74-07:77, 07:79- 07:80, 07:82-07:83, 07:86- 07:99, 07:101-07:117	B7, B42, Null, –	1																							24
*07:03, 07:08, 07:16, 07:32, 07:37	B7, B703, –	1																							24
*07:04, 07:25	B7	1													14										24
*07:09, 07:11, 07:17	B7	1											12												24
*07:19, 07:33, 07:40, 07:48, 07:51, 07:53	B7, B42																								24
*07:20, 07:24	B7, –	1		3																					24
*07:27	–	1										11								20					
*07:28	B7	1				6																			24
*07:36, 07:81	B7, –	1																							
*07:38	–	1																							
*07:47	B7	1																							24
*07:50	–	1										11													24
*07:54	B7	1																							24
*07:60	–			3																					24
*07:65	–	1																	18						
*07:69, 07:85	–	1																						23	24
*07:73	–	1														16									24
*07:78	–	1									10														24
*07:84	–	1																							24
*07:100	–			3																					24
*08:01:01-08:01:13, 08:05, 08:08N, 08:10- 08:12:03, 08:15-08:16, 08:18-08:19N, 08:22- 08:24, 08:27, 08:29- 08:31, 08:33-08:34, 08:39, 08:41-08:48, 08:51, 08:53, 08:56- 08:59, 08:61, 08:63- 08:64, 08:66	B8, Null, –		2						8																24
*08:02-08:03, 08:52	B8, –		2						8																
Well No.		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24

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25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48		Well No.
																								ser. ⁵	HLA-B allele ⁴
			28																			47		B7, B42, Null, –	*07:02:01-07:02:20, 07:05:01-07:07, 07:10, 07:12-07:15, 07:18:01- 07:18:02, 07:21-07:23, 07:26, 07:29-07:31, 07:34 07:35, 07:39, 07:41- 07:46, 07:49N, 07:52, 07:55-07:59, 07:61-07:64, 07:66-07:68:02, 07:70- 07:72, 07:74-07:77, 07:79 07:80, 07:82-07:83, 07:86 07:99, 07:101-07:117
																						47		B7, B703, –	*07:03, 07:08, 07:16, 07:32, 07:37
		27	28																			47		B7	*07:04, 07:25
			28																			47		B7	*07:09, 07:11, 07:17
			28																			47		B7, B42	*07:19, 07:33, 07:40, 07:48, 07:51, 07:53
			28																			47		B7, –	*07:20, 07:24
																					46		–	*07:27	
			28																			47		B7	*07:28
			28																			46		B7, –	*07:36, 07:81
																					46		–	*07:38	
			w																			47		B7	*07:47
																						47		–	*07:50
			28									38										47		B7	*07:54
			28																			47		–	*07:60
			28				32								40				w			47		–	*07:65
																						47		–	*07:69, 07:85
			28																			47		–	*07:73
			28							35												47		–	*07:78
			28							35												47		–	*07:84
			28																		45	47		–	*07:100
			27																			47		B8, Null, –	*08:01:01-08:01:13, 08:05, 08:08N, 08:10- 08:12:03, 08:15-08:16, 08:18-08:19N, 08:22- 08:24, 08:27, 08:29- 08:31, 08:33-08:34, 08:39, 08:41-08:48, 08:51, 08:53, 08:56- 08:59, 08:61, 08:63- 08:64, 08:66
			27																			46		B8, –	*08:02-08:03, 08:52
25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48		Well No.

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Well No.		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24
*08:04	B8, –		2						8			11													24
*08:07, 08:14	B8		2																						24
*08:09	B8		2						8																24
*08:13, 08:20, 08:40	B8, –		2																						24
*08:17, 08:54	–		2						8			11													24
*08:21	B8		2	3					8																24
*08:25	B8		2	3																					24
*08:26, 08:50, 08:62, 42:07 ⁶	B8, –								8																24
*08:28, 08:37	B8, –		2										12												24
*08:32	B8		2						8										18						24
*08:35	–		2						8				12												24
*08:36	–		2						8																
*08:38	–		2						8																24
*08:49	–		2															17			20				24
*08:55	–		2																			21			24
*08:60	–		2						8																24
*08:65	–								8															23	24
*13:01:01-13:01:05, 13:17, 13:20, 13:22:01-13:23, 13:25, 13:28-13:29	B13, –			3	4						10							17							
*13:02:01-13:02:09, 13:08Q, 13:15, 13:18-13:19, 13:27, 13:30, 13:32-13:34, 13:37-13:38, 13:40	B13, –			3	4						10														
*13:03	B49, B15			3	4																				
*13:04, 13:10	B49, B15, B13			3	4								12												
*13:06	B13			3	4													17							
*13:07N	Null			3	4						10							17							
*13:09	–				4						10														
*13:11	B13			3	4						10														
*13:12-13:13	B13			3	4													17							
*13:14	B13			3							10														
*13:16	B13			3	4						10														
*13:21, 13:35	–			3	4																				
*13:26	–			3	4								12					17							
*13:31	–			3	4						10														
*13:36	–			3	4						10							17							
*13:39	–				4						10							17							
*14:01:01-14:01:02, 14:07N, 14:12, 14:14, 14:19	B64, Null, –				4	5																		23	24
Well No.		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24

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25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48		Well No.
		27																				47		B8, –	*08:04
		27																				47		B8	*08:07, 08:14
		27			30																	47		B8	*08:09
																						47		B8, –	*08:13, 08:20, 08:40
		27										38										47		–	*08:17, 08:54
		27																				47		B8	*08:21
																						47		B8	*08:25
		27																				47		B8, –	*08:26, 08:50, 08:62, 42:07 ⁶
		27																				47		B8, –	*08:28, 08:37
		27																	44			47		B8	*08:32
		27																				47		–	*08:35
		27																				47		–	*08:36
		27										38										47		–	*08:38
		27			29																	47		–	*08:49
																						47		–	*08:55
		27			29																	47		–	*08:60
		27																				47		–	*08:65
												38										46		B13, –	*13:01:01-13:01:05, 13:17, 13:20, 13:22:01- 13:23, 13:25, 13:28-13:29
												38										46		B13, –	*13:02:01-13:02:09, 13:08Q, 13:15, 13:18- 13:19, 13:27, 13:30, 13:32-13:34, 13:37-13:38, 13:40
												38				41						46		B49, B15	*13:03
												38										46		B49, B15, B13	*13:04, 13:10
												38			40							46		B13	*13:06
																						46		Null	*13:07N
												38										47		–	*13:09
												38							43			46		B13	*13:11
												38										46		B13	*13:12-13:13
												38										46		B13	*13:14
											35	38										46		B13	*13:16
												38										46		–	*13:21, 13:35
												38										46		–	*13:26
											w	38									45	46		–	*13:31
								33														46		–	*13:36
												38										47		–	*13:39
																						47		B64, Null, –	*14:01:01-14:01:02, 14:07N, 14:12, 14:14, 14:19
25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48		Well No.

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Well No.		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24
*14:02:01-14:02:02, 14:02:04, 14:03-14:04, 14:09, 14:11, 14:15-14:18	B65, B14, –				4		6																	23	24
*14:02:03, 14:02:06	B65, –				4																			23	24
*14:02:05	B65				4		6																	23	
*14:05-14:06:02, 14:13	B14, –						6																	23	24
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*15:01:02	B62							7		9			12							19					
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*15:03:01-15:03:02, 15:47, 15:49, 15:61, 15:98, 15:103, 15:123, 15:127, 15:132, 15:151, 15:156, 15:158, 15:173	B72, B70, –							8				11	12							19					
*15:03:03	B72							7	8			11	12							19					
*15:04	B62							7					12							19					
*15:07:01-15:07:02, 15:126, 15:205, 15:207	B62, –			3				7					12							19					
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*15:09	B70								8	9					14					19					
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*15:11:04	B75												12							19					
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*15:18:03	B71								8				12		14					19					
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*15:29	B70								8				12							19					
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*15:43	B15							7					12							19					
*15:45	B62			3				7												19					
*15:46	–				4			7	8				12							19					
*15:48, 15:150, 15:188	B62, –							7												19					
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*15:54	B72								8			11	12							19					
*15:55	B15			3				7					12							19					
*15:57	B62							7					12							19					
*15:62	–								8			11	12					17		19					
*15:64	B71								8			11	12							19					
*15:66	B62							7					12		14					19					
*15:68	–			3								11	12												
*15:69	B72								8			11	12							19		21			
*15:73	B62							7												19					
*15:74	B72								8				12							19					
*15:76	–							7					12							19					
*15:77	B62					6	7											17		19					
*15:80	B70								8				12		14			17		19					
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*15:85, 15:154, 15:165	B62, –							7					12					17		19					
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*15:89	B77			w				7					12					17		19					
*15:91, 15:131	–								8			11	12	13						19					
*15:101	–							7					12							19					
*15:106	–				4			7	8				12					17		19					
*15:116	B62							7					12							19					
*15:124	B71								8				12		14					19					
*15:137	–							7												19					
*15:138	–	1						7					12							19					
*15:142	–		2					7					12							19					
*15:143	–							7	8				12							19					
*15:144	–							7					12					17		19					
*15:161	–								8				12	13	14					19					
*15:180	–		2						8				12							19					
*15:186	–								8				12		14					19		21			
*15:189	–					6	7						12		14					19					
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												38								45	46			B15	*15:43
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*18:01:01-18:03, 18:05-18:08, 18:10-18:11, 18:13-18:15, 18:17N-18:18, 18:20-18:21, 18:23N-18:25, 18:27-18:28, 18:30-18:36, 18:38-18:40, 18:42-18:43, 18:45-18:47, 18:50-18:52	B18, Null, –												12			15			18						
*18:04	B18												12			15			18						
*18:09	B18												12			15									
*18:12	B18												12			15			18						
*18:19	B18												12			15			18						
*18:22	B18												12			15		17	18						
*18:26, 18:41	B18, –															15			18						
*18:29, 35:32, 35:37, 35:53N, 35:64, 35:66, 35:68:01-35:68:02, 35:99, 35:118-35:119 ⁸	B35, Null, –												12						18						
*18:37	–											11	12			15									
*18:44	–				4								12			15			18						
*18:48	–												12			15									
*18:49	–												12			15									
*27:01	B27					5											16								
*27:02, 27:53, 27:57, 27:65N	B27, Null, –					5											16								
*27:03-27:06, 27:09-27:10, 27:13, 27:17, 27:20, 27:27, 27:31, 27:35-27:37, 27:45-27:46, 27:48-27:51, 27:54-27:56, 27:58, 27:60-27:61, 27:64N, 27:66N, 27:68-27:69, 27:72-27:73	B27, Null, –					5											16								
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*27:16, 27:39, 27:59N	B27, Null, –					5											16								
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																			44			47	Negative Control	B18, Null, –	*18:01:01-18:03, 18:05-18:08, 18:10-18:11, 18:13-18:15, 18:17N-18:18, 18:20-18:21, 18:23N-18:25, 18:27-18:28, 18:30-18:36, 18:38-18:40, 18:42-18:43, 18:45-18:47, 18:50-18:52
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																		44	46			B18		*18:09	
												38									47	B18		*18:12	
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																			44		47	–		*18:44	
	26											37									47	–		*18:48	
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			28			w						38									46	B27		*27:01	
			28				32				36	38									46	B27, Null, –		*27:02, 27:53, 27:57, 27:65N	
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*27:19	B27																16	17							
*27:23	–					5											16								
*27:24	B27																16								
*27:25	B27																16								
*27:29	B27					5						11					16								
*27:30	B27																16	17							
*27:33	–																16								
*27:41	–					5							12				16								
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*35:01:10	B35									9			12					17	18						
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*35:04:02	B35									9								17	18						
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*35:09:01-35:09:02, 35:18, 35:31, 35:75, 35:88, 35:127, 35:151	B35, –																		18						
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			28				32						38								46			B27	*27:19
																					46			–	*27:23
			28				32	33					38								46			B27	*27:24
			28				32						38								45	46		B27	*27:25
													38								46			B27	*27:29
			28				32				36		38								46			B27	*27:30
			28				32						38									47		–	*27:33
			28				32						38								46			–	*27:41
			28				32						38								46			–	*27:52, 27:67
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																			44			47		Negative Control	*35:01:01-35:01:09, 35:01:11-35:01:22, 35:07- 35:08:04, 35:11:01- 35:11:02, 35:15, 35:20:01 35:20:02, 35:23, 35:29, 35:40N-35:42:01, 35:48, 35:50, 35:52, 35:54, 35:57, 35:61, 35:77- 35:78, 35:82, 35:90- 35:94, 35:100-35:101:02, 35:103-35:105, 35:107- 35:108:02, 35:110- 35:112, 35:116, 35:120- 35:124, 35:126, 35:130N- 35:134N, 35:137-35:148
																			44			47		B35	*35:01:10
																			44			47		B35, Null, –	*35:02:01-35:03:02, 35:03:04-35:04:01, 35:04:03, 35:06, 35:12:01 35:12:02, 35:33-35:34, 35:36, 35:39, 35:55, 35:59, 35:65Q, 35:70, 35:74, 35:83-35:85, 35:95, 35:98, 35:106, 35:128-35:129N, 35:136, 35:149-35:150
																			44			47		B35	*35:03:03, 35:56
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*35:10, 35:28, 35:69, 35:80	B35, –												12					17	18						
*35:13	B35																	17	18						
*35:14:01-35:14:02, 35:62	B35												12					17	18						
*35:16	B35			3									12					17	18						
*35:17, 35:30, 35:113, 35:125	B35, –			3									12					17	18						
*35:19	B35, –												12					17							
*35:21, 35:24:01-35:24:02	B35, B78												12					17	18						
*35:22	B35			3															18						
*35:25, 35:49	B35												12					17							
*35:26	B35					6							12					17							
*35:27	B35												12					17							
*35:35	B35												12					17	18		21				
*35:38	B35																	17	18						
*35:42:02	–												12					17	18						
*35:43:01, 35:67, 35:79, 35:86, 35:102, 35:117, 35:135	B35, –												12						18						
*35:43:02	–												12					18							
*35:44	–																	18							
*35:45, 35:71	B35												12	13				17	18						
*35:46	B35			4									12					17							
*35:47	B35			4									12					17							
*35:60	B35																	18							
*35:63	–			4									12					17							
*35:76	B35, 22												12					17	18						
*35:81, 35:96, 35:109	–																	17	18						
*35:87	–							8										18							
*35:115	–												12					17	18						
*37:01:01-37:01:07, 37:03N, 37:06, 37:13, 37:15-37:21, 37:23-37:25	B37, Null, –													13				17		20					
*37:02	B37, B27				5									13						20					
*37:04:01-37:04:02	B37, –													13				17		20					
*37:05	–													13				17		20					
*37:07	–	1												13						20					
*37:08	B37													13				17		20					
*37:09	B37													13						20					
*37:10, 37:22	B37, –																	17		20					
*37:11	–																	17	18	20					
*37:12	B37							8						13						20					
*37:14	–																	17		20					
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												38										47		B35, –	*35:10, 35:28, 35:69, 35:80
												38										47		B35	*35:13
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																			44			47		B35	*35:35
				29																44		47		B35	*35:38
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			28				32													w		47		B35, 22	*35:76
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				29									38									46		B37, Null, –	*37:01:01-37:01:07, 37:03N, 37:06, 37:13, 37:15-37:21, 37:23-37:25
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Negative Control

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*38:01:01-38:02:02, 38:08-38:09, 38:11-38:16, 38:18-38:19, 38:21, 38:23-38:24	B38, –					5																21	22	23	
*38:02:03	–																					21		23	
*38:03	B38					5						11										21	22		
*38:04, 38:25	B38, –																					21		23	
*38:05	B38						6															21	22	23	
*38:06	B38																					21			
*38:07	B38					5																21			
*38:10	B38					5																	22	23	
*38:17	–					5								13							20	21	22	23	
*38:20	–					5												17				21	22	23	
*38:22	–					5											16						22	23	
*38:26	–					5																21	22		
*39:01:01:01-39:01:01:02L, 39:01:03-39:01:08, 39:01:10-39:01:12, 39:03, 39:05:01-39:06:02, 39:09, 39:11, 39:14-39:15, 39:24, 39:26-39:29, 39:31, 39:35, 39:37-39:38Q, 39:40N-39:41, 39:44, 39:46, 39:48, 39:51-39:57, 39:59-39:62	B3901, B39, Low B39, Null, –					5																21		23	24
*39:01:09, 39:12, 39:45	B3901, B39, –																					21		23	24
*39:02:01, 39:08	B3902, B39					5						11										21			24
*39:02:02, 39:13:01-39:13:02, 39:23, 39:49	B3902, B39, –											11										21			24
*39:04	B39						6															21		23	24
*39:07	B16					5						12										21		23	24
*39:10, 39:16, 39:20	B39																					21			24
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*39:43	–					5						12												23	24
*39:58	–					5																21			24
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																				46				B38, –	*38:01:01-38:02:02, 38:08:09, 38:11-38:16, 38:18:19, 38:21, 38:23-38:24
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																			44	46				B38	*38:07
																				46				B38	*38:10
																				46				–	*38:17
																				46				–	*38:20
																				46				–	*38:22
			28																	46				–	*38:26
																						47		Negative Control	*39:01:01:01-39:01:01:02L, 39:01:03-39:01:08, 39:01:10-39:01:12, 39:03, 39:05:01-39:06:02, 39:09, 39:11, 39:14-39:15, 39:24, 39:26-39:29, 39:31, 39:35, 39:37-39:38Q, 39:40N-39:41, 39:44, 39:46, 39:48, 39:51-39:57, 39:59-39:62
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																								B39	*39:39
																								B39	*39:42
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*40:01:01-40:01:06, 40:01:08-40:01:10, 40:01:12-40:01:17, 40:07, 40:51, 40:66, 40:73, 40:79, 40:124:01, 40:139- 40:140, 40:146-40:147, 40:150, 40:152-40:153, 40:155N	B60, Null, –				4																				24
*40:01:07, 40:72:01, 40:77	B60				4																				24
*40:01:11	–				4																				24
*40:02:01-40:02:11, 40:04, 40:39, 40:89, 40:94, 40:97, 40:122, 40:142N-40:144N	B61, B41, Null, –																								
*40:03, 40:20	B61												12												
*40:05	B4005, B50			3																					
*40:06:01:01-40:06:03, 40:70	B61, –																								24
*40:08	B61, –																								
*40:09, 40:11:01- 40:11:02, 40:18, 40:24, 40:27, 40:29, 40:35, 40:37, 40:50, 40:56- 40:57, 40:64, 40:78, 40:82, 40:85, 40:90- 40:91, 40:99, 40:104, 40:107, 40:111, 40:115, 40:119-40:120, 40:133Q, 40:145	B61, –																								?
*40:10:01-40:10:02, 40:22N, 40:30, 40:33- 40:34, 40:36, 40:42- 40:43, 40:49, 40:54- 40:55, 40:61-40:63, 40:65, 40:67, 40:81, 40:84, 40:87-40:88, 40:92, 40:100-40:102, 40:108, 40:112-40:114, 40:116, 40:118N, 40:123, 40:124:02-40:126, 40:128, 40:130, 40:134, 40:141, 40:151, 40:154, 40:156	B60, Null, –				4																				?
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25												37	38									47		B60, Null, –	*40:01:01-40:01:06, 40:01:08-40:01:10, 40:01:12-40:01:17, 40:07, 40:51, 40:66, 40:73, 40:79, 40:124:01, 40:139- 40:140, 40:146-40:147, 40:150, 40:152-40:153, 40:155N
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26												37	38									47		B61, B41, Null, –	*40:02:01-40:02:11, 40:04, 40:39, 40:89, 40:94, 40:97, 40:122, 40:142N-40:144N
26												37	38									47		B61	*40:03, 40:20
26												37	38									47		B4005, B50	*40:05
26												37	38									47		B61, –	*40:06:01:01-40:06:03, 40:70
26												37										47		B61, –	*40:08
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25	?											37	38									47		B60, Null, –	*40:10:01-40:10:02, 40:22N, 40:30, 40:33- 40:34, 40:36, 40:42- 40:43, 40:49, 40:54- 40:55, 40:61-40:63, 40:65, 40:67, 40:81, 40:84, 40:87-40:88, 40:92, 40:100-40:102, 40:108, 40:112-40:114, 40:116, 40:118N, 40:123, 40:124:02-40:126, 40:128, 40:130, 40:134, 40:141, 40:151, 40:154, 40:156
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*40:12	B60, B48								8			11								19					
*40:13	–																								
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*40:15, 40:32	B40, –	1			4																				?
*40:16	B61	1			4																				24
*40:19	B61																								
*40:21, 40:137	B40, B15, –																								?
*40:23	B40	1			4																				24
*40:25, 40:69, 40:106	B40, B60, –				4																				?
*40:26	B21									9															?
*40:28	–									9								17							?
*40:31, 40:45, 40:80	B60, –				4																				?
*40:38, 40:52	B60				4							12													?
*40:40	B61																								
*40:44, 40:75, 40:86, 40:103, 40:127, 40:131	B61, –																								24
*40:46	B60										11					16									?
*40:47	B40				4																				
*40:48	B60				4						10														?
*40:53, 40:72:02	B61, B60				4																				24
*40:58	B40				4																				?
*40:59-40:60	B40, –				4							12													24
*40:68	–																								?
*40:71	B61			3																					?
*40:74, 40:149	B60, –																								?
*40:76	B60				4																				
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*40:93	–										11					16									24
*40:95	–																								?
*40:96	–																								24
*40:98	–	1																							?
*40:105	–											12													?
*40:109	–																								24
*40:110	–				4																				24
*40:117	–				4																				
*40:132	–				4																				?
*40:135	–				4																				
*40:136	–	1			4				8						14										?
*40:138	–																								24
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25												38										47	Negative Control	B60, B48	*40:12	
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	?											37	38									47		B40, –	*40:15, 40:32	
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	?								34		36	38									46			B61	*40:19	
25												38										47		B40, B15, –	*40:21, 40:137	
25												37	38									47		B40	*40:23	
25	?											37										47		B40, B60, –	*40:25, 40:69, 40:106	
	?											37	38									47		B21	*40:26	
	?					31						37	38									47		–	*40:28	
	?							33				37	38									47		B60, –	*40:31, 40:45, 40:80	
25	?											37	38									47		B60	*40:38, 40:52	
												37	38									47		B61	*40:40	
	?											37	38									47		B61, –	*40:44, 40:75, 40:86, 40:103, 40:127, 40:131	
25												38										47		B60	*40:46	
25	?											38									46			B40	*40:47	
25	?											37	38				43					47		B60	*40:48	
	?											37	38									47		B61, B60	*40:53, 40:72:02	
	?											37	38		40							47		B40	*40:58	
25												37	38									47		B40, –	*40:59-40:60	
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	?											37	38			41	43					47		B61	*40:71	
25	?											37	38									47		B60, –	*40:74, 40:149	
25	?											38												B60	*40:76	
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	?								35			37	38									47		–	*40:95	
	?											38									46			–	*40:96	
	?											37	38									47		–	*40:98	
	?											37	38									47		–	*40:105	
	?								34		36	38									46			–	*40:109	
	?											38									46			–	*40:110	
25	?								34		36	38									46			–	*40:117	
25	?			29								37	38									47		–	*40:132	
25	?											37	38									47		–	*40:135	
	?	27										37	38									47		–	*40:136	
25												37	38									47		–	*40:138	
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Negative Control

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Lot-specific information

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Well No.		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24
*40:148	–																								24
*40:157	–																								
*40:158	–	1			4								12												?
*41:01, 41:06-41:07, 41:12, 41:14, 41:16	B41, –				4				8																24
*41:02:01-41:03:02, 41:11, 41:13, 41:15	B41, –				4				8																24
*41:04, 41:10	B41, –				4																				24
*41:05	B41				4				8																24
*41:08	B41	1			4				8						14										24
*41:09, 45:02-45:03 ⁹	B45, –				4				8																24
*42:01:01-42:02, 42:06, 42:10, 42:12, 42:14	B42, –								8																24
*42:04	B42								8																24
*42:05:01-42:05:02	B42	1							8						14										24
*42:08	B42								8																24
*42:09	B42												12												24
*42:11	–								8				11												24
*42:13	–								8																24
*44:02:01:01-44:02:14, 44:11, 44:19N, 44:21- 44:24, 44:27, 44:33- 44:34, 44:48, 44:52N, 44:55, 44:59, 44:63, 44:66-44:68, 44:71-44:74, 44:80, 44:84, 44:86- 44:87, 44:89, 44:93, 44:101-44:102, 44:104, 44:112-44:113	B44, Null, –				4													17							
*44:03:01-44:03:06, 44:03:08-44:05:02, 44:13, 44:26, 44:28:01-44:30, 44:32, 44:35-44:36, 44:38- 44:39, 44:42, 44:45, 44:51, 44:56N, 44:58N, 44:61N, 44:69-44:70, 44:76-44:79, 44:82, 44:85, 44:88, 44:92, 44:94, 44:96, 44:98, 44:105, 44:107-44:109, 44:114-44:115	B44, Null, –				4													17							
*44:03:07, 44:07, 44:81, 44:103, 44:111	B44, –																	17							
*44:06	B44																	17							
Well No.		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24

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	?									35		37	38									47		–	*40:148		
	?												38									46		–	*40:157		
	?											37	38									47		–	*40:158		
		27			30							37	38									47		B41, –	*41:01, 41:06-41:07, 41:12, 41:14, 41:16		
		27										37	38									47		B41, –	*41:02:01-41:03:02, 41:11, 41:13, 41:15		
		27										37	38									47		B41, –	*41:04, 41:10		
		27			30							?	38									47		B41	*41:05		
		27										37	38									47		B41	*41:08		
					30							37	38									47		B45, –	*41:09, 45:02-45:03 ⁹		
		27	28																			47		B42, –	*42:01:01-42:02, 42:06, 42:10, 42:12, 42:14		
		27	28		30																	47		B42	*42:04		
		27	28																			47		B42	*42:05:01-42:05:02		
			28																			47		B42	*42:08		
		27	28																			47		B42	*42:09		
		27											38									47		–	*42:11		
		27	28	29																		47		–	*42:13		
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					29								38	39								46			B44, Null, –	*44:02:01:01-44:02:14, 44:11, 44:19N, 44:21- 44:24, 44:27, 44:33- 44:34, 44:48, 44:52N, 44:55, 44:59, 44:63, 44:66-44:68, 44:71-44:74, 44:80, 44:84, 44:86- 44:87, 44:89, 44:93, 44:101-44:102, 44:104, 44:112-44:113	
																							46			B44, Null, –	*44:03:01-44:03:06, 44:03:08-44:05:02, 44:13, 44:26, 44:28:01-44:30, 44:32, 44:35-44:36, 44:38 44:39, 44:42, 44:45, 44:51, 44:56N, 44:58N, 44:61N, 44:69-44:70, 44:76-44:79, 44:82, 44:85, 44:88, 44:92, 44:94, 44:96, 44:98, 44:105, 44:107-44:109, 44:114-44:115
					29								38									46			B44, –	*44:03:07, 44:07, 44:81, 44:103, 44:111	
					29	30					36			39					44		46			B44	*44:06		
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*44:08	B44			w														17							
*44:09	B45				4													17							
*44:10	B44				4							11						17		19					
*44:12	B44				4													17							
*44:14	B44				4				8									17							
*44:15	B12				4				8			11													
*44:16, 44:91	B47, B44, –				4		6											17							
*44:17, 44:43:01-44:43:02	B44, –				4								12	13				17							
*44:18	B44				4				8			11													
*44:20, 44:100	B44, –				4				8																
*44:25, 44:50	B44				4													17							
*44:31	B44				4																				
*44:37, 44:64:01-44:64:02	B44, –				4		6											17							
*44:40	B44											11					16	17							
*44:41, 44:53, 44:99	B44, –				4																				
*44:44	B44											11					16	17							
*44:46, 44:75	B12, –				4													17							
*44:47, 44:65	B44, –				4																				
*44:49	B44		2		4													17							
*44:54	B44			3	4																				
*44:57	–			w														17							
*44:60, 44:110	–			3	4													17							
*44:62	–				4				8	9								17							
*44:83	–																	17							
*44:90	–				4													17							
*44:95	–				4													17							
*44:97	–				4													17							
*44:106	–			3	4																				
*45:01, 45:05, 45:07, 45:11-45:13	B45, –				4				8			11													24
*45:04	B21				4				8																24
*45:06	B45				4				8			11													24
*45:08	–				4				8																24
*45:09	–				4				8				12	13											24
*45:10	–				4				8			10													24
*46:01:01-46:01:05, 46:04 46:05, 46:07N, 46:09- 46:10, 46:14-46:16, 46:22- 46:24	B46, Null, –							7					12												
*46:02	B46							7					12												
Well No.		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24

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				29									38	39							46			Negative Control	B44	*44:08
				29								37	38	39								47			B45	*44:09
				29									38			41					46				B44	*44:10
				29										39							46				B44	*44:12
				29									38								46				B44	*44:14
					30								38			41					46				B12	*44:15
				29									38	39							46				B47, B44, –	*44:16, 44:91
				29									38								46				B44, –	*44:17, 44:43:01-44:43:02
					30				34				38			41					46				B44	*44:18
				29	30								38	39							46				B44, –	*44:20, 44:100
				29					34	36			38								46				B44	*44:25, 44:50
25				29									38								46				B44	*44:31
													38								46				B44, –	*44:37, 44:64:01-44:64:02
				29									38								46				B44	*44:40
				29									38	39							46				B44, –	*44:41, 44:53, 44:99
				29									38	39							46				B44	*44:44
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				29									38								46				–	*44:57
				29									38								46				–	*44:60, 44:110
				29									38								46				–	*44:62
				29									38	39							46				–	*44:83
			28	29			32					37	38	39								47			–	*44:90
				29					34	36			38	39							46				–	*44:95
			28	29			32						38	39							46				–	*44:97
				29									38	39							46				–	*44:106
					30							37	38			41						47		B45, –	*45:01, 45:05, 45:07, 45:11-45:13	
					30							37	38			41						47		B21	*45:04	
			28	30								37	38			41						47		B45	*45:06	
				30								37	38		40							47		–	*45:08	
				30								37	38									47		–	*45:09	
				30								37	38									47		–	*45:10	
			28			31														45		47		B46, Null, –	*46:01:01-46:01:05, 46:04 46:05, 46:07N, 46:09- 46:10, 46:14-46:16, 46:22 46:24	
			w			31														45		47		B46	*46:02	
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Well No.		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24
*46:03, 46:08, 46:13:01-46:13:03, 46:19, 46:21:01-46:21:02, 46:25-46:26	B46, –							7					12												
*46:06	–							7					12												
*46:11	B22							7																	
*46:12, 46:20	–			3				7					12												
*46:17	–							7					12	13											
*46:18	–							7																	
*47:01:01:01-47:01:01:02, 47:06-47:07	B47, –				4																				
*47:02	B47				4																				
*47:03	B47				4																				
*47:04-47:05	B17, –				4	5																			
*48:01:01-48:01:03, 48:04, 48:07, 48:09, 48:11, 48:19-48:20, 48:22, 48:24	B48, –												11												24
*48:02:01-48:02:02	B48, B70												11	12				17							24
*48:03:01-48:03:02, 48:17	B48, –												11												24
*48:05, 48:08	B48, –	1											11												24
*48:06	–																								24
*48:10, 48:12-48:13	B48, –												11												24
*48:14	B48												11	12											24
*48:15	B48	1											11												24
*48:16	B48												11												24
*48:18	B48												11												
*48:21	–					5							11												24
*48:23	–												11	12											24
*49:01:01, 49:06, 49:08-49:10, 49:12-49:15	B49, –				4																				
*49:01:02, 49:11	B49, –				4																				
*49:02	B49				4																				
*49:03	B49																								
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*50:01:01-50:01:02, 50:04-50:05, 50:08, 50:10-50:11	B50, –				4																				24
*50:02	B45				4								11												24
*50:06	–				4																				24
*50:07	–																								24
*50:09	–				4																				24
*50:12	–				4																				24
Well No.		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24

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			28			31																47		B46, –	*46:03, 46:08, 46:13:01-46:13:03, 46:19, 46:21:01-46:21:02, 46:25-46:26
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			28			31										41						47		B22	*46:11
			28			31														45		47		–	*46:12, 46:20
			28			31														45		47		–	*46:17
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	26						32					37	38									47		B47	*47:02
	26						32					w	38									46	w	B47	*47:03
	26												38									46		B17, –	*47:04-47:05
								33					38									47		B48, –	*48:01:01-48:01:03, 48:04, 48:07, 48:09, 48:11, 48:19-48:20, 48:22, 48:24
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25													38									47		B48, –	*48:03:01-48:03:02, 48:17
													38									47		B48, –	*48:05, 48:08
								33														47		–	*48:06
													38									47		B48, –	*48:10, 48:12-48:13
													38									47		B48	*48:14
								33					38									47		B48	*48:15
								33														47		B48	*48:16
								33					38									46		B48	*48:18
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									34				38			41						46		B49, –	*49:01:02, 49:11
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									34	35			38									46		B49	*49:04-49:05
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										35				38			41					47		–	*50:06
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										35			37	38								47		–	*50:09
												37	38			41						47		–	*50:12
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Negative Control

Lot No.: **63M**

Lot-specific information

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Well No.		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24
*51:01:01, 51:01:03, 51:01:05-51:01:08, 51:01:10-51:02:01, 51:02:03, 51:03, 51:07:01, 51:09:01, 51:11N-51:12, 51:13:02-51:14, 51:16-51:19, 51:21-51:23, 51:26-51:33, 51:38-51:41N, 51:43, 51:48-51:53, 51:55, 51:57-51:58, 51:60, 51:65-51:67, 51:69-51:77, 51:79-51:80, 51:82-51:88, 51:90-51:91, 51:94-51:96, 51:98N, 51:100, 51:102, 51:105	B51, B5102, B5103, Null, -									9															
*51:01:02, 51:02:02, 51:05, 51:07:02, 51:09:02, 51:89, 51:103	B51, B5102, -									9															
*51:01:04, 51:02:04, 51:13:01, 51:24:01, 51:34-51:35, 51:92, 51:99	B51, B5102, -																								
*51:01:09	B51									9															24
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*51:06, 51:59	B51, -									9															
*51:08, 51:20, 51:44N	B51, Null								8	9															
*51:10	B51																								24
*51:15	-																								
*51:24:02	B51																								24
*51:24:03-51:24:04	B51, -									9															24
*51:36	B51								8																
*51:37, 51:63	B51, -									9		12													
*51:42	-																	17							
*51:45	-											12													
*51:54, 51:78	-									9															
*51:61	-									9															
*51:62	-																								
*51:64	-			3						9															
*51:68	-		2							9															
*51:81	-																								
*51:93	-																								
*51:97	-								8	9		12													
*51:101	-									9												21			
*51:104	-									9															
*51:106	-									9															
Well No.		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24

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					30					35	36								44		46			Negative Control	*51:01:01, 51:01:03, 51:01:05-51:01:08, 51:01:10-51:02:01, 51:02:03, 51:03, 51:07:01, 51:09:01, 51:11N-51:12, 51:13:02- 51:14, 51:16-51:19, 51:21- 51:23, 51:26-51:33, 51:38- 51:41N, 51:43, 51:48- 51:53, 51:55, 51:57- 51:58, 51:60, 51:65- 51:67, 51:69-51:77, 51:79- 51:80, 51:82-51:88, 51:90- 51:91, 51:94-51:96, 51:98N, 51:100, 51:102, 51:105	
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					30					35	36								44		46				B51	*51:24:02
					30					35	36								44		46				B51, –	*51:24:03-51:24:04
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					30					36						41	43	44		46					–	*51:62
					30					36									44		46				–	*51:64
					30					35	36								44		46				–	*51:68
					30					36									44		46				–	*51:81
										35	36								44		46				–	*51:93
					30					35	36								44		46				–	*51:97
					30					35	36								44		46				–	*51:101
					30			33		35	36										46				–	*51:104
					30					35	36					41			44		46			–	*51:106	
25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48		Well No.	

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Well No.		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24
*52:01:01, 52:01:03, 52:01:06, 52:04-52:05, 52:07-52:08, 52:10-52:13, 52:15, 52:17-52:18, 52:22	B52, –									9															
*52:01:02, 52:01:04, 52:02-52:03, 52:06:01- 52:06:02, 52:09	B52									9															
*52:01:05, 52:14	B52, –																								
*52:16	–									9	11														
*52:19	–								8	9															
*52:20	–									9															
*52:21	–									9															
*53:01:01-53:01:05, 53:05, 53:08:01-53:08:02, 53:10, 53:15-53:16, 53:18, 53:20-53:21, 53:23- 53:24	B53, –												12					17							
*53:02	B53												12					17							
*53:03, 53:09, 53:11- 53:13	B53, B35												12					17							
*53:04, 53:07, 53:19	B53, –																	17							
*53:06	B53, B51												12					17							
*53:14	–			3									12												
*53:17	–												12					17							
*53:22	–												12	13				17							
*54:01-54:02, 54:05N, 54:07-54:08N, 54:10, 54:13, 54:16-54:19, 54:21- 54:23	B54, Null, –																								
*54:03	B22																								
*54:04, 54:15	B54, –																								
*54:06	–												12												
*54:09, 54:14	–												12												
*54:11	B54																							24	
*54:12	–																								
*54:20	–																								
*55:01:01-55:01:06, 55:03, 55:05, 55:11, 55:15, 55:25, 55:29, 55:31, 55:33, 55:36, 55:38, 55:44-55:45	B55, –																								
Well No.		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24

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25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48		Well No.
										35	36		38								46			B52, –	*52:01:01, 52:01:03, 52:01:06, 52:04-52:05, 52:07-52:08, 52:10-52:13, 52:15, 52:17-52:18, 52:22
				30						35	36		38								46			B52	*52:01:02, 52:01:04, 52:02-52:03, 52:06:01- 52:06:02, 52:09
										35	36		38								46			B52, –	*52:01:05, 52:14
										35	36		38								46			–	*52:16
				30						35	36		38								46			–	*52:19
										35			38								46			–	*52:20
				30						35	36		38								45	46		–	*52:21
											36								44		46			B53, –	*53:01:01-53:01:05, 53:05, 53:08:01-53:08:02, 53:10, 53:15-53:16, 53:18, 53:20-53:21, 53:23 53:24
					31						36								44		46			B53	*53:02
																			44		46			B53, B35	*53:03, 53:09, 53:11- 53:13
											36								44		46			B53, –	*53:04, 53:07, 53:19
				30	31						36								44		46			B53, B51	*53:06
											36								44		46			–	*53:14
											36		38								46			–	*53:17
				29							36								44		46			–	*53:22
			28				32							39	40							47		B54, Null, –	*54:01-54:02, 54:05N, 54:07-54:08N, 54:10, 54:13, 54:16-54:19, 54:21 54:23
			28				32						39		41						47			B22	*54:03
			28				32						39								47			B54, –	*54:04, 54:15
			28				32						39							45	47			–	*54:06
			28				32						39								47			–	*54:09, 54:14
			28				32						39								47			B54	*54:11
			28				32		34				39	40							46			–	*54:12
			28				32			35			39	40							47			–	*54:20
			28				32			35				40							47			B55, –	*55:01:01-55:01:06, 55:03, 55:05, 55:11, 55:15, 55:25, 55:29, 55:31, 55:33, 55:36, 55:38, 55:44-55:45
25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48		Well No.

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Well No.		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24
*55:02:01-55:02:06, 55:07, 55:10, 55:12, 55:16, 55:19, 55:26, 55:30, 55:37, 55:39, 55:41-55:43, 55:47-55:48	B55, B54, –																								
*55:04, 55:08, 55:13, 55:27, 55:46, 56:15, 56:19N, 56:22 ¹⁰	B55, B56, Null, –																								
*55:09, 55:24	B22, B55										10														
*55:14	–												12					17							
*55:17, 55:28	B55, –																								
*55:18	–											11													
*55:20	B22								8																
*55:21	B55																								
*55:22	B22										10														
*55:23, 55:32, 56:18 ¹¹	B55, –												12												
*55:34	–																								
*55:35	–																								
*55:40	–																								
*56:01:01-56:01:04, 56:08, 56:14, 56:16, 56:20, 56:24, 56:26-56:30	B56, Null, –																								
*56:02, 56:04	B56																								
*56:03	B22, B15												12												
*56:05:01	B56									9															
*56:05:02	B56									9															
*56:06	B78									9								18							
*56:07	B56																								
*56:09	B56												12					17							
*56:10	B55																								
*56:11-56:12	B56, B22																	17							
*56:13	B56								8																
*56:17	B56																								
*56:21	–									9															
*56:23	–																								
*56:25	–																								
*57:01:01-57:01:04, 57:01:06-57:01:10, 57:06, 57:08, 57:10, 57:15- 57:16, 57:18-57:20, 57:22- 57:23, 57:25-57:27, 57:29- 57:30, 57:33-57:37	B57, –												12					17							
Well No.		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24

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25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48		Well No.
			28				32								40								47	B55, B54, –	*55:02:01-55:02:06, 55:07, 55:10, 55:12, 55:16, 55:19, 55:26, 55:30, 55:37, 55:39, 55:41-55:43, 55:47-55:48
			28				32																47	B55, B56, Null, –	*55:04, 55:08, 55:13, 55:27, 55:46, 56:15, 56:19N, 56:22 ¹⁰
			28				32			35													47	B22, B55	*55:09, 55:24
			28				32									42							47	–	*55:14
			28				32			35													47	B55, –	*55:17, 55:28
												38		40									47	–	*55:18
		27	28		30		32																47	B22	*55:20
			28				32			w					40						45		47	B55	*55:21
			28				32																47	B22	*55:22
			28				32																47	B55, –	*55:23, 55:32, 56:18 ¹¹
			28				32					38		40									47	–	*55:34
			28				32	w							40								47	–	*55:35
			28				32			35		38		40									47	–	*55:40
			28				32									41							47	B56, Null, –	*56:01:01-56:01:04, 56:08, 56:14, 56:16, 56:20, 56:24, 56:26-56:30
			28				32									41		43					47	B56	*56:02, 56:04
			28				32														45		47	B22, B15	*56:03
			28				32			35					40								47	B56	*56:05:01
			28				32			35													47	B56	*56:05:02
			28				32			35					40				w				47	B78	*56:06
			28				32									41						46		B56	*56:07
			28				32																47	B56	*56:09
			28				32								40			43					47	B55	*56:10
			28				32																47	B56, B22	*56:11-56:12
			28		30		32									41							47	B56	*56:13
																41							47	B56	*56:17
			28				32		34	35												46		–	*56:21
															40								47	–	*56:23
			28				32			35						41							47	–	*56:25
											36						42					46		B57, –	*57:01:01-57:01:04, 57:01:06-57:01:10, 57:06, 57:08, 57:10, 57:15- 57:16, 57:18-57:20, 57:22, 57:23, 57:25-57:27, 57:29, 57:30, 57:33-57:37
25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48		Well No.

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Well No.		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24
*57:01:05, 57:11, 57:13, 57:21, 57:31	B57, –												12												
*57:02:01-57:03:02, 57:05, 57:17, 57:28N, 57:32	B57, Null, –																	17							
*57:04	B57					6												17							
*57:07	B57																	17							
*57:09	B57							8										17							
*57:12	B57																	17							
*57:14	–												12					17							
*57:24	–												12					17							
*58:01:01-58:01:02, 58:01:04-58:01:08, 58:04-58:05, 58:10N-58:15, 58:19, 58:21-58:24, 58:29-58:31N	B58, Null, –												12					17							
*58:01:03, 58:02, 58:06, 58:16, 58:25-58:26	B58, –												12												
*58:07	B58												12	13											
*58:08	B17, B5								9																
*58:09	B17												12					17							
*58:17N	Null												12					17							
*58:18	–			3									12												
*58:20	–																				21				
*58:27	–																								
*58:28	–																	17							
*59:01, 59:05	B59, –																								
*59:02-59:03	B59, –																								
*59:04	–																								
*67:01:01, 67:03	B67, –					5																21			24
*67:01:02-67:02	B67, –																					21			24
*73:01-73:02	B73, –																								24
*78:01, 78:02:02-78:03, 78:07	B78, –									9								18							
*78:02:01, 78:04	B78, B35									9								18							
*78:05	–									9								18							
*78:06	–									9															
*81:01	B81																								
*81:02	B81																								24
*81:03-81:05	Null, –																								
*82:01-82:03	B82, –							8			11								19						
*83:01	–																	17							
Well No.		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24

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25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48		Well No.
											36						42				46			B57, –	*57:01:05, 57:11, 57:13, 57:21, 57:31
											36						42				46			B57, Null, –	*57:02:01-57:03:02, 57:05, 57:17, 57:28N, 57:32
											36						42				46			B57	*57:04
				29							36						42				46			B57	*57:07
				29							36						42				46			B57	*57:09
																	42					47	B57	*57:12	
						31					36						42				46			–	*57:14
				29							36						42				46			–	*57:24
											36							43			46			B58, Null, –	*58:01:01-58:01:02, 58:01:04-58:01:08, 58:04-58:05, 58:10N-58:15, 58:19, 58:21-58:24, 58:29 58:31N
											36							43			46			B58, –	*58:01:03, 58:02, 58:06, 58:16, 58:25-58:26
											36							43			46			B58	*58:07
					30					35	36							43			46			B17, B5	*58:08
						31					36							43			46			B17	*58:09
																		43			46			Null	*58:17N
											36							43			46			–	*58:18
											36							43			46			–	*58:20
											36							43			46			–	*58:27
											36							43			46			–	*58:28
									34						40						46			B59, –	*59:01, 59:05
									34												46			B59, –	*59:02-59:03
									34							41					46			–	*59:04
			28																			47		B67, –	*67:01:01, 67:03
			28																			47		B67, –	*67:01:02-67:02
			28																		45	47		B73, –	*73:01-73:02
										35					40				44			47		B78, –	*78:01, 78:02:02-78:03, 78:07
										35									44			47		B78, B35	*78:02:01, 78:04
										35				38								47		–	*78:05
										35				38								47		–	*78:06
			28				32	33														47		B81	*81:01
			28					33														47		B81	*81:02
			28					33														47		Null, –	*81:03-81:05
			28				32									41						47		B82, –	*82:01-82:03
			28	29			32							39								47		–	*83:01
25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48		Well No.

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-B low resolution typing.

In addition, wells number 4 to 6, 10, 17, 20, 21, 30, 35 and 42 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 or 3rd exon or in the 1st 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, or 3rd exon or the 1st or 3rd introns, matching the specificity-determining 3'-end of the primer is given in the anti-sense direction. Nucleotide numbering as on the www.ebi.ac.uk, imgt, hla web site. The sequence of the 3 terminal nucleotides of the primer is given.

⁴The sequence of the B*0701 allele has been shown to be in error.

The sequence of the B*08:06 allele has been shown to be identical to B*08:20.

The sequence of the B*1305 allele has been shown to be identical to B*13:04.

The B*1324 allele has been renamed B*13:22:02

The B*150105 allele has been corrected and renamed B*15:120

The B*1522 allele has been renamed B*35:43.

The sequence of the B*1541 allele has been shown to be identical to B*15:39.

The B*1559 allele has been renamed B*35:44.

The B*15:100 allele has never been assigned.

The sequence of the B*1816 allele has been shown to be identical to B*18:14.

The sequence of the B*27051 allele has been shown to be identical to B*27:05:02.

The sequence of the B*2722 allele has been shown to be identical to the corrected B*27:06 sequence.

The B*3573 allele has been renamed B*35:08:03.

The sequence of the B*39012 allele has been shown to be identical to B*39:01:01:01.

The sequence of the B*3921 allele has been shown to be identical to B*39:24.

The sequence of the B*4017 allele has been shown to be identical to B*40:16.

The sequence of the B*4041 allele has been shown to be identical to B*40:40.

The sequence of the B*4203 allele has never been assigned.

The sequence of the B*4401 allele has been shown to be identical to B*44:02:01:01.

The sequence of the B*5003 allele has been shown to be identical to B*50:02.

The sequence of the B*5125 allele has been shown to be identical to B*51:22.

The B*5147 allele has been renamed B*51:09:02.

The sequence of the B*5506 allele has been shown to be identical to B*55:04.

The sequence of the B*5803 allele has never been assigned.

The B*7901 allele has been renamed B*15:18:01.

The B*9530 allele has been renamed B*15:27:02.

⁵The serological reactivity of all HLA-B alleles is not known. In this table we use the expert-assigned serological grouping in Tissue Antigens (2009) **73**:95-170 and the serological grouping of the sequence-defined allele.

⁶The B*08:26, 08:50 and 08:62 and B*42:07 alleles give rise to identical amplification patterns with the HLA-B low resolution primer set. These alleles can be separated by the respective high resolution primer sets.

⁷The B*14:08 and the B*39:25N, 39:30, 39:32-39:34, 39:47 and 39:50 alleles give rise to identical amplification patterns with the HLA-B low resolution primer set. These alleles can be separated by the respective high resolution primer sets.

⁸The B*18:29 and the B*35:32, 35:37, 35:53N, 35:64, 35:68:01-35:68:02, 35:99 and 35:118-35:119 alleles give rise to identical amplification patterns with the HLA-B low resolution primer set. These alleles can be separated by the respective high resolution primer sets.

⁹The B*41:09 and the B*45:02 and 45:03 alleles give rise to identical amplification patterns with the HLA-B low resolution primer set. These alleles can be separated by the respective high resolution primer sets.

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¹⁰The B*55:04, 55:08, 55:13, 55:27 and 55:46 and the B*56:15, 56:19N and 56:22 alleles give rise to identical amplification patterns with the HLA-B low resolution primer set. These alleles can be separated by the respective high resolution primer sets.

¹¹The B*55:23 and 55:32 and the B*56:18 alleles give rise to identical amplification patterns with the HLA-B low resolution primer set. These alleles can be separated by the respective high resolution primer sets.

‘ser’, serological HLA specificity.

‘w’, might be weakly amplified.

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

CELL LINE VALIDATION SHEET																					
HLA-B low resolution SSP kit																					
					Well																
						1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
				Prod. No.:		201073401	201073402	201078803	201073404	201185805	201073406	201073407	201073408	201073409	201073410	201073411	201073412	201073413	201073414	201078815	201073416
	IHC cell line		B*																		
1	9001	SA	*07:02		+	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
2	9280	LK707	*52:01	*73:01	-	-	-	-	-	-	-	-	-	+	-	-	-	-	-	-	-
3	9011	E4181324	*52:01		-	-	-	-	-	-	-	-	-	+	-	-	-	-	-	-	-
4	9275	GU373	*15:10	*53:01	-	-	-	-	-	-	-	-	+	-	-	-	+	-	+	-	-
5	9009	KAS011	*37:01		-	-	-	-	-	-	-	-	-	-	-	-	-	+	-	-	-
6	9353	SM	*39:01	*51:01	-	-	-	-	+	-	-	-	-	+	-	-	-	-	-	-	-
7	9020	QBL	*18:01		-	-	-	-	-	-	-	-	-	-	-	-	+	-	-	+	-
8	9025	DEJ	*35:01		-	-	-	-	-	-	-	-	-	-	-	-	+	-	-	-	-
9	9026	YAR	*38:01		-	-	-	-	+	-	-	-	-	-	-	-	-	-	-	-	-
10	9107	LKT3	*54:01		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
11	9051	PITOUT	*44:03		-	-	-	+	-	-	-	-	-	-	-	-	-	-	-	-	-
12	9052	DBB	*57:01		-	-	-	-	-	-	-	-	-	-	-	-	+	-	-	-	-
13	9004	JESTHOM	*27:05		-	-	-	-	+	-	-	-	-	-	-	-	-	-	-	-	+
14	9071	OLGA	*15:01	*15:20	-	-	-	-	-	-	-	+	-	-	-	-	+	-	-	-	-
15	9075	DKB	*40:01		-	-	-	+	-	-	-	-	-	-	-	-	-	-	-	-	-
16	9037	SWEIG007	*40:02		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
17	9282	CTM3953540	*08:01	*55:01	-	+	-	-	-	-	-	-	+	-	-	-	-	-	-	-	-
18	9257	32367	*14:01	*56:01	-	-	-	+	+	-	-	-	-	-	-	-	-	-	-	-	-
19	9038	BM16	*18:01		-	-	-	-	-	-	-	-	-	-	-	-	+	-	-	+	-
20	9059	SLE005	*40:01		-	-	-	+	-	-	-	-	-	-	-	-	-	-	-	-	-
21	9064	AMALA	*15:01		-	-	-	-	-	-	-	+	-	-	-	-	+	-	-	-	-
22	9056	KOSE	*35:03		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
23	9124	IHL	*40:02	*56:02	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
24	9035	JBUSH	*38:01		-	-	-	-	+	-	-	-	-	-	-	-	-	-	-	-	-
25	9049	IBW9	*14:02		-	-	-	+	-	+	-	-	-	-	-	-	-	-	-	-	-
26	9285	WT49	*58:01		-	-	-	-	-	-	-	-	-	-	-	-	+	-	-	-	-
27	9191	CH1007	*07:05	*51:01	+	-	-	-	-	-	-	-	-	+	-	-	-	-	-	-	-
28	9320	BEL5GB	*44:02	*44:03	-	-	-	+	-	-	-	-	-	-	-	-	-	-	-	-	-
29	9050	MOU	*44:03		-	-	-	+	-	-	-	-	-	-	-	-	-	-	-	-	-
30	9021	RSH	*42:01		-	-	-	-	-	-	-	-	+	-	-	-	-	-	-	-	-
31	9019	DUCAF	*18:01		-	-	-	-	-	-	-	-	-	-	-	-	+	-	-	+	-
32	9297	HAG	*41:02		-	-	-	+	-	-	-	-	+	-	-	-	-	-	-	-	-
33	9098	MT14B	*40:01		-	-	-	+	-	-	-	-	-	-	-	-	-	-	-	-	-
34	9104	DHIF	*38:01		-	-	-	-	+	-	-	-	-	-	-	-	-	-	-	-	-
35	9302	SSTO	*44:02		-	-	-	+	-	-	-	-	-	-	-	-	-	-	-	-	-
36	9024	KT17	*15:01	*35:01	-	-	-	-	-	-	-	+	-	-	-	-	+	-	-	-	-
37	9065	HHKB	*07:02		+	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
38	9099	LZL	*15:01		-	-	-	-	-	-	-	+	-	-	-	-	+	-	-	-	-
39	9315	CML	*08:01	*27:05	-	+	-	-	+	-	-	-	+	-	-	-	-	-	-	-	+
40	9134	WHONP199	*13:02	*46:01	-	-	+	+	-	-	-	+	-	-	+	-	+	-	-	-	-
41	9055	H0301	*14:02		-	-	-	+	-	+	-	-	-	-	-	-	-	-	-	-	-
42	9066	TAB089	*46:01		-	-	-	-	-	-	-	+	-	-	-	-	+	-	-	-	-
43	9076	T7526	*46:01		-	-	-	-	-	-	-	+	-	-	-	-	+	-	-	-	-
44	9057	TEM	*38:01		-	-	-	-	+	-	-	-	-	-	-	-	-	-	-	-	-
45	9239	SHJO	*42:01	*50:01	-	-	-	+	-	-	-	-	+	-	-	-	-	-	-	-	-
46	9013	SCHU	*07:02		+	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
47	9045	TUBO	*51:01		-	-	-	-	-	-	-	-	-	+	-	-	-	-	-	-	-
48	9303	TER-ND	*35:01	*44:03	-	-	-	+	-	-	-	-	-	-	-	-	+	-	-	-	-

CELL LINE VALIDATION SHEET																						
HLA-B low resolution SSP kit																						
					Prod. No.:	Well																
						17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	
						201073417	201073418	201078819	201182320	201073421	201073422	201073423	201078824	201078825	201182326	201073427	201073428	201185829	201073430	201188631	201073432	
	IHC cell line		B*																			
1	9001	SA	*07:02		-	-	-	+	-	-	-	+	-	-	-	+	-	-	-	-	-	
2	9280	LK707	*52:01	*73:01	-	-	-	-	-	-	-	+	-	-	-	+	-	-	-	-	-	
3	9011	E4181324	*52:01		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
4	9275	GU373	*15:10	*53:01	+	-	+	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
5	9009	KAS011	*37:01		+	-	-	+	-	-	-	+	-	-	-	-	+	-	-	-	-	
6	9353	SM	*39:01	*51:01	-	-	-	-	+	-	-	+	+	-	-	-	-	+	-	-	-	
7	9020	QBL	*18:01		-	+	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
8	9025	DEU	*35:01		+	+	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
9	9026	YAR	*38:01		-	-	-	-	-	+	+	-	-	-	-	-	-	-	-	-	-	
10	9107	LKT3	*54:01		-	-	-	-	-	-	-	-	-	-	-	-	+	-	-	-	+	
11	9051	PITOUT	*44:03		+	-	-	-	-	-	-	-	-	-	-	-	-	+	-	-	-	
12	9052	DBB	*57:01		+	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
13	9004	JESTHOM	*27:05		-	-	-	-	-	-	-	-	-	-	-	-	+	-	-	-	+	
14	9071	OLGA	*15:01	*15:20	+	-	+	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
15	9075	DKB	*40:01		-	-	-	-	-	-	-	+	+	-	-	-	-	-	-	-	-	
16	9037	SWEIG007	*40:02		-	-	-	-	-	-	-	-	-	-	+	-	-	-	-	-	-	
17	9282	CTM3953540	*08:01	*55:01	-	-	-	-	-	-	-	+	-	-	+	+	-	-	-	-	+	
18	9257	32367	*14:01	*56:01	-	-	-	-	-	-	+	+	-	-	-	+	-	-	-	-	+	
19	9038	BM16	*18:01		-	+	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
20	9059	SLE005	*40:01		-	-	-	-	-	-	-	+	+	-	-	-	-	-	-	-	-	
21	9064	AMALA	*15:01		-	-	+	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
22	9056	KOSE	*35:03		+	+	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
23	9124	IHL	*40:02	*56:02	-	-	-	-	-	-	-	-	-	-	+	-	+	-	-	-	+	
24	9035	JBUSH	*38:01		-	-	-	-	+	+	+	-	-	-	-	-	-	-	-	-	-	
25	9049	IBW9	*14:02		-	-	-	-	-	-	+	+	-	-	-	-	-	-	-	-	-	
26	9285	WT49	*58:01		+	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
27	9191	CH1007	*07:05	*51:01	-	-	-	-	-	-	-	+	-	-	-	+	-	+	-	-	-	
28	9320	BEL5GB	*44:02	*44:03	+	-	-	-	-	-	-	-	-	-	-	-	-	+	-	-	-	
29	9050	MOU	*44:03		+	-	-	-	-	-	-	-	-	-	-	-	-	+	-	-	-	
30	9021	RSH	*42:01		-	-	-	-	-	-	-	+	-	-	+	+	-	-	-	-	-	
31	9019	DUCAF	*18:01		-	+	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
32	9297	HAG	*41:02		-	-	-	-	-	-	-	+	-	-	+	-	-	-	-	-	-	
33	9098	MT14B	*40:01		-	-	-	-	-	-	-	+	+	-	-	-	-	-	-	-	-	
34	9104	DHIF	*38:01		-	-	-	-	+	+	+	-	-	-	-	-	-	-	-	-	-	
35	9302	SSTO	*44:02		+	-	-	-	-	-	-	-	-	-	-	-	+	-	-	-	-	
36	9024	KT17	*15:01	*35:01	+	+	+	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
37	9065	HHKB	*07:02		-	-	-	-	-	-	-	+	-	-	-	+	-	-	-	-	-	
38	9099	LZL	*15:01		-	-	+	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
39	9315	CML	*08:01	*27:05	-	-	-	-	-	-	-	+	-	-	+	+	-	-	-	-	+	
40	9134	WHONP199	*13:02	*46:01	-	-	-	-	-	-	-	-	-	-	-	-	+	-	-	+	-	
41	9055	H0301	*14:02		-	-	-	-	-	-	-	+	+	-	-	-	-	-	-	-	-	
42	9066	TAB089	*46:01		-	-	-	-	-	-	-	-	-	-	-	-	+	-	-	+	-	
43	9076	T7526	*46:01		-	-	-	-	-	-	-	-	-	-	-	-	+	-	-	+	-	
44	9057	TEM	*38:01		-	-	-	-	+	+	+	-	-	-	-	-	-	-	-	-	-	
45	9239	SHJO	*42:01	*50:01	-	-	-	-	-	-	-	+	-	-	-	+	-	-	-	-	-	
46	9013	SCHU	*07:02		-	-	-	-	-	-	-	+	-	-	-	+	-	-	-	-	-	
47	9045	TUBO	*51:01		-	-	-	-	-	-	-	-	-	-	-	-	-	+	-	-	-	
48	9303	TER-ND	*35:01	*44:03	+	+	-	-	-	-	-	-	-	-	-	-	+	-	-	-	-	

CELL LINE VALIDATION SHEET																			
HLA-B low resolution SSP kit																			
					Well														
					33	34	35	36	37	38	39	40	41	42	43	44	45	46	47
				Prod. No.:	201182333	201073434	201073435	201078836	201073437	201078838	201073439	201073440	201073441	201073442	201073443	201073444	201073445	201073446	201073447
	IHWC cell line		B*																
1	9001 SA		*07:02		-	-	-	-	-	-	-	-	-	-	-	-	-	-	+
2	9280 LK707		*52:01	*73:01	-	-	+	+	-	+	-	-	-	-	-	-	-	+	-
3	9011 E4181324		*52:01		-	-	+	+	-	+	-	-	-	-	-	-	+	+	+
4	9275 GU373		*15:10	*53:01	-	-	-	+	-	-	-	-	-	-	-	+	-	+	+
5	9009 KAS011		*37:01		-	-	-	-	-	+	-	-	-	-	-	-	-	+	-
6	9353 SM		*39:01	*51:01	-	-	+	+	-	-	-	-	-	-	-	+	-	+	+
7	9020 QBL		*18:01		-	-	-	-	-	-	-	-	-	-	-	+	-	-	+
8	9025 DEU		*35:01		-	-	-	-	-	-	-	-	-	-	-	-	-	+	-
9	9026 YAR		*38:01		-	-	-	-	-	-	-	-	-	-	-	-	-	+	-
10	9107 LKT3		*54:01		-	-	-	-	-	-	+	+	-	-	-	-	-	-	+
11	9051 PITOUT		*44:03		-	-	-	-	-	+	-	-	-	-	-	-	-	+	-
12	9052 DBB		*57:01		-	-	-	+	-	-	-	-	-	+	-	-	-	+	-
13	9004 JESTHOM		*27:05		-	-	-	-	-	+	-	-	-	-	-	-	-	+	-
14	9071 OLGA		*15:01	*15:20	-	-	-	-	-	+	-	-	-	-	-	-	+	-	+
15	9075 DKB		*40:01		-	-	-	-	+	+	-	-	-	-	-	-	-	-	+
16	9037 SWEIG007		*40:02		-	-	-	-	+	+	-	-	-	-	-	-	-	-	+
17	9282 CTM3953540		*08:01	*55:01	-	-	+	-	-	-	-	+	-	-	-	-	-	-	+
18	9257 32367		*14:01	*56:01	-	-	-	-	-	-	-	-	+	-	-	-	-	-	+
19	9038 BM16		*18:01		-	-	-	-	-	-	-	-	-	-	-	+	-	-	+
20	9059 SLE005		*40:01		-	-	-	-	+	+	-	-	-	-	-	-	-	-	+
21	9064 AMALA		*15:01		-	-	-	-	-	+	-	-	-	-	-	-	+	-	+
22	9056 KOSE		*35:03		-	-	-	-	-	-	-	-	-	-	-	+	-	-	+
23	9124 IHL		*40:02	*56:02	-	-	-	-	+	+	-	-	+	-	+	-	-	-	+
24	9035 JBUSH		*38:01		-	-	-	-	-	-	-	-	-	-	-	-	-	+	-
25	9049 IBW9		*14:02		-	-	-	-	-	-	-	-	-	-	-	-	-	-	+
26	9285 WT49		*58:01		-	-	-	+	-	-	-	-	-	-	+	-	-	+	-
27	9191 CH1007		*07:05	*51:01	-	-	+	+	-	-	-	-	-	-	-	+	-	+	+
28	9320 BEL5GB		*44:02	*44:03	-	-	-	-	-	+	+	-	-	-	-	-	-	+	-
29	9050 MOU		*44:03		-	-	-	-	-	+	-	-	-	-	-	-	-	+	-
30	9021 RSH		*42:01		-	-	-	-	-	-	-	-	-	-	-	-	-	-	+
31	9019 DUCAF		*18:01		-	-	-	-	-	-	-	-	-	-	-	+	-	-	+
32	9297 HAG		*41:02		-	-	-	-	+	+	-	-	-	-	-	-	-	-	+
33	9098 MT14B		*40:01		-	-	-	-	+	+	-	-	-	-	-	-	-	-	+
34	9104 DHIF		*38:01		-	-	-	-	-	-	-	-	-	-	-	-	-	+	-
35	9302 SSTO		*44:02		-	-	-	-	-	+	+	-	-	-	-	-	-	+	-
36	9024 KT17		*15:01	*35:01	-	-	-	-	-	+	-	-	-	-	-	+	+	-	+
37	9065 HHKB		*07:02		-	-	-	-	-	-	-	-	-	-	-	-	-	-	+
38	9099 LZL		*15:01		-	-	-	-	-	+	-	-	-	-	-	-	+	-	+
39	9315 CML		*08:01	*27:05	-	-	-	-	-	+	-	-	-	-	-	-	-	+	+
40	9134 WHONP199		*13:02	*46:01	-	-	-	-	-	+	-	-	-	-	-	-	+	+	+
41	9055 H0301		*14:02		-	-	-	-	-	-	-	-	-	-	-	-	-	-	+
42	9066 TAB089		*46:01		-	-	-	-	-	-	-	-	-	-	-	-	+	-	+
43	9076 T7526		*46:01		-	-	-	-	-	-	-	-	-	-	-	-	+	-	+
44	9057 TEM		*38:01		-	-	-	-	-	-	-	-	-	-	-	-	-	+	-
45	9239 SHJO		*42:01	*50:01	-	-	+	-	+	+	-	-	+	-	-	-	-	-	+
46	9013 SCHU		*07:02		-	-	-	-	-	-	-	-	-	-	-	-	-	-	+
47	9045 TUBO		*51:01		-	-	+	+	-	-	-	-	-	-	-	+	-	+	-
48	9303 TER-ND		*35:01	*44:03	-	-	-	-	-	+	-	-	-	-	-	+	-	+	+

CERTIFICATE OF ANALYSIS

Olerup SSP® HLA-B low resolution SSP

Product number: 101.501-48u/12u – without *Taq* pol.

Lot number: 63M

Expiry date: 2014-March-01

Number of tests: 48 tests – Product No. 101.501-48u

12 tests – Product No. 101.501-12u

Number of wells per test: 47 + 1

Well specifications:

Well No.	Production No.	Well No.	Production No.	Well No.	Production No.
1	2010-734-01	17	2010-734-17	33	2011-823-33
2	2010-734-02	18	2010-734-18	34	2010-734-34
3	2010-788-03	19	2010-788-19	35	2010-734-35
4	2010-734-04	20	2011-823-20	36	2010-788-36
5	2011-858-05	21	2010-734-21	37	2010-734-37
6	2010-734-06	22	2010-734-22	38	2010-788-38
7	2010-734-07	23	2010-734-23	39	2010-734-39
8	2010-734-08	24	2010-788-24	40	2010-734-40
9	2010-734-09	25	2010-788-25	41	2010-734-41
10	2010-734-10	26	2011-823-26	42	2010-734-42
11	2010-734-11	27	2010-734-27	43	2010-734-43
12	2010-734-12	28	2010-734-28	44	2010-734-44
13	2010-734-13	29	2011-858-29	45	2010-734-45
14	2010-734-14	30	2010-734-30	46	2010-734-46
15	2010-788-15	31	2011-886-31	47	2010-734-47
16	2010-734-16	32	2010-734-32		

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

Additional 5'-primers and 3'-primers in primer solutions 3, 6, 14, 19, 29, 31 and 40 were tested by separately adding one additional 3'-primer, respectively one additional 5'-primer. Additional 3'-primers in primer solutions 2, 13, 15 and 35 were tested by separately adding one additional 5'-primer. Additional 5'-primers in primer solutions 1, 21 and 25 were tested by separately adding one additional 3'-primer. In primer solution 31, one 5'-primer was not possible to test, in primer solution 38, one 3'-primer was not possible to test, and in primer solution 42, one 5'-primer and one 3'-primer was not possible to test.

The negative control primer pairs, **Production No. 2010-760-01**, can detect contamination with PCR products diluted 10^{-7} .

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

Date of approval: 2011-September-08

Approved by:

Quality Control, Supervisor

Lot No.: **63M**

Lot-specific information

www.olerup-ssp.com

Declaration of Conformity

Product name: *Olerup SSP*® HLA-B low resolution
Product number: 101.501-48u/12u
Lot number: 63M

Intended use: HLA-B low 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.

The Authorized Representative located within the Community is: *Olerup SSP AB*.

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

Stockholm, Sweden
2011-September-08

Ann-Cathrin Jareman
Head of QA and Regulatory Affairs

Lot No.: **63M**

Lot-specific information

www.olerup-ssp.com

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Fax: +43-1-710 15 00 10

E-mail: support-at@olerup.com

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

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

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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**.