

Olerup SSP® HLA-B*08

Product number:	101.513-24u/04u – without <i>Taq</i> pol.
Lot number:	41M
Expiry date:	2013-December-01
Number of tests:	24 tests – Product No. 101.513-24u 4 tests – Product No. 101.513-04u
Number of wells per test:	46
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. 41M.

**CHANGES COMPARED TO THE PREVIOUS *OLERUP SSP*®
HLA-B*08 LOT**

The HLA-B*08 specificity and interpretation tables have been updated for the HLA-B alleles described since the previous *Olerup SSP*® HLA-B*08 lot was made (Lot No. 07K).

Six wells have been added to the B*08 kit, wells **41** to **46**.
The amplification patterns for some rare HLA-B*08 alleles only differ by the length of the specific PCR products.

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

Well	5'-primer	3'-primer	rationale
6	-	-	Exchanged positive control primer pair.
23	Added	Added	Improved yield of HLA-specific PCR product.
41	New	New	New primer pair for the B*08:62 allele.
42	New	New	New primer pair for the B*08:63 allele.
43	New	New	New primer pairs for the B*08:64 and B*08:70 alleles.
44	New	New	New primer pairs for the B*08:65 and B*08:67N alleles.
45	New	New	New primer pairs for the B*08:68 and B*08:69 alleles.
46	New	New	New primer pair for the B*08:66 allele.

Change in revision R01 compared to R00:

1. Primer mix 3 amplifies the B*08:17 and 08:47 alleles. This has been corrected in the specificity and amplification tables.

PRODUCT DESCRIPTION

HLA-B*08 SSP subtyping

CONTENT

The primer set contains 5'- and 3'-primers for identifying the B*08:01 to B*08:70 alleles.

PLATE LAYOUT

Each test consists of 46 PCR reactions in a 48 well cut PCR plate. Wells 47 and 48 are empty.

1	2	3	4	5	6	7	8
9	10	11	12	13	14	15	16
17	18	19	20	21	22	23	24
25	26	27	28	29	30	31	32
33	34	35	36	37	38	39	40
41	42	43	44	45	46	empty	empty

The 48 well cut PCR plate is marked with ‘HLA-B*08’ in silver/gray ink.

Well No. 1 is marked with the Lot No. ‘41M’.

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

The interpretation of HLA-B*08 SSP subtypings will be influenced by several B*07 alleles, four B*13, the B*14:11 allele, several B*15, five B*18, two B*27, most B*35, two B*37, five B*38, several B*39, several B*40, most B*41, the B*42, eight B*44, the B*45:09, the B*46:12 allele, four B*48, the B*49:03 allele, most B*51, five B*52, most B*53, three B*54, five B*55, the B*56:16 allele, six B*57, the B*58:12 allele, the B*59, the B*67:02 allele, the B*73, most B*78 and the B*83:01 allele when present on the other haplotype. In addition, the C*05:30 allele will be amplified by the primer mix 23, the C*07:68, C*07:140 and C*07:151 alleles will be amplified by primer mix 25 and the C*07:124 and C*07:155 alleles will be amplified by primer mix 3.

UNIQUELY IDENTIFIED ALLELES

All the HLA-B*08 alleles, i.e. **B*08:01 to B*08:70**, recognized by the HLA Nomenclature Committee in April 2011¹ will give rise to unique amplification patterns by the primers in the HLA-B*08 subtyping kit.

The HLA-B*08 subtyping primer set can not distinguish the B*08:01:01-08:01:15 or the B*08:12:01-08:12:03 alleles.

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The B*08:17 and 08:47 alleles may be distinguished by the different sizes of the specific PCR products generated by primer mix 23.

The B*08:41 and 08:48 alleles may be distinguished by the different sizes of the specific PCR products generated by primer mix 37.

The B*08:45 and 08:59 alleles may be distinguished by the different sizes of the specific PCR products generated by primer mix 34.

The B*08:51 and 08:57 alleles may be distinguished by the different sizes of the specific PCR products generated by primer mix 35.

The B*08:58 and 08:61 alleles may be distinguished by the different sizes of the specific PCR products generated by primer mix 38.

The B*08:68 and 08:69 alleles may be distinguished by the different sizes of the specific PCR products generated by primer mix 45.

¹HLA-B alleles listed on the IMGT/HLA web page 2011-April-08, release 3.4.0, www.ebi.ac.uk/imgt/hla.

RESOLUTION IN HOMO- AND HETEROZYGOTES

A total of 85 alleles generate 64 amplification patterns that can be combined in 2080 homozygous and heterozygous combinations. 989 of these genotypes do not give rise to unique amplification patterns. The different lengths of the specific PCR products were not considered in these calculations.

+++++--- --+---+--	-----	-----+	-----	-----	*08:02, *08:04 = *08:02, *08:24
+++++--- --+---+--	-----	-----+	-----	-----	*08:02, *08:09 = *08:02, *08:27
+++++--- --+---+--	-----	-----+	-----	-----	*08:02, *08:11 = *08:02, *08:60
+++++--- --+---+--	-----	-----+	-----	-----	*08:02, *08:12:01 = *08:02, *08:43
+++++--- --+---+--	-----	-----+	-----	-----	*08:02, *08:28 = *08:02, *08:35
+++++--- --+---+--	-----	-----+	-----	-----	*08:02, *08:65 = *08:02, *08:67N
+++++--- --+---+--	-----	-----+	-----	-----	*08:03, *08:54 = *08:05, *08:54
+++++--- --+---+--	-----	-----+	-----	-----	*08:03, *08:04 = *08:03, *08:24
+++++--- --+---+--	-----	-----+	-----	-----	*08:09, *08:54 = *08:27, *08:54
+++++--- --+---+--	-----	-----+	-----	-----	*08:11, *08:54 = *08:54, *08:60
+++++--- --+---+--	-----	-----+	-----	-----	*08:12:01, *08:54 = *08:43, *08:54
+++++--- --+---+--	-----	-----+	-----	-----	*08:15, *08:54 = *08:39, *08:54
+++++--- --+---+--	-----	-----+	-----	-----	*08:17, *08:23 = *08:21, *08:54 = *08:47, *08:54
+++++--- --+---+--	-----	-----+	-----	-----	*08:28, *08:54 = *08:35, *08:54
+++++--- --+---+--	-----	-----+	-----	-----	*08:22, *08:54 = *08:30N, *08:54
+++++--- --+---+--	-----	-----+	-----	-----	*08:01:01, *08:54 = *08:23, *08:54 = *08:24, *08:54 = *08:38, *08:54 = *08:52, *08:54
+++++--- --+---+--	-----	-----+	-----	-----	*08:04, *08:23 = *08:04, *08:52 = *08:23, *08:24 = *08:24, *08:52
+++++--- --+---+--	-----	-----+	-----	-----	*08:03, *08:09 = *08:03, *08:27
+++++--- --+---+--	-----	-----+	-----	-----	*08:03, *08:11 = *08:03, *08:60
+++++--- --+---+--	-----	-----+	-----	-----	*08:03, *08:12:01 = *08:03, *08:43
+++++--- --+---+--	-----	-----+	-----	-----	*08:03, *08:28 = *08:03, *08:35
+++++--- --+---+--	-----	-----+	-----	-----	*08:03, *08:32 = *08:03, *08:36 = *08:23, *08:36 = *08:36, *08:52
+++++--- --+---+--	-----	-----+	-----	-----	*08:03, *08:65 = *08:03, *08:67N
+++++--- --+---+--	-----	-----+	-----	-----	*08:01:01, *08:03 = *08:03, *08:05 = *08:03, *08:23 = *08:05, *08:23 = *08:05, *08:52
+++++--- --+---+--	-----	-----+	-----	-----	*08:23, *08:40 = *08:40, *08:52
+++++--- --+---+--	-----	-----+	-----	-----	*08:20, *08:23 = *08:20, *08:52
+++++--- --+---+--	-----	-----+	-----	-----	*08:23, *08:70 = *08:52, *08:70
+++++--- --+---+--	-----	-----+	-----	-----	*08:23, *08:37 = *08:37, *08:52
+++++--- --+---+--	-----	-----+	-----	-----	*08:07, *08:23 = *08:07, *08:52
+++++--- --+---+--	-----	-----+	-----	-----	*08:08N, *08:23 = *08:08N, *08:52
+++++--- --+---+--	-----	-----+	-----	-----	*08:09, *08:23 = *08:09, *08:52 = *08:23, *08:27 = *08:27, *08:52

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+++-----	---+---+	-----	-----+	-----	-----	*08:10, *08:23 = *08:10, *08:52
+++-----	-----++	-----	-----+	-----	-----+	*08:23, *08:49 = *08:49, *08:52
+++-----	---+---+	-----	-----+	-----	-----	*08:11, *08:23 = *08:11, *08:52 = *08:23, *08:60 = *08:52, *08:60
+++-----	---+---+	--+-----	-----+	-----	-----	*08:16, *08:23 = *08:16, *08:52
+++-----	---+---+	-----	-----+	-----	-----	*08:12:01, *08:23 = *08:12:01, *08:52 = *08:23, *08:43 = *08:43, *08:52
+++-----	-----++	-----+	-----+	-----	-----	*08:23, *08:25 = *08:25, *08:52
+++-----	-----++	-----	-----+	-----	-----	*08:23, *08:55 = *08:52, *08:55
+++-----	-----++	-----	-----+	-----	-----	*08:13, *08:23 = *08:13, *08:52
+++-----	-----+	+-----	-----+	-----	-----	*08:14, *08:23 = *08:14, *08:52
+++-----	-----+	-+-----	-----+	-----	-----	*08:15, *08:23 = *08:23, *08:39 = *08:39, *08:52
+++-----	-----+	--+-----	-----+	-----	-----	*08:23, *08:44 = *08:44, *08:52
+++-----	-----+	---+-----	---+-----	-----	-----	*08:22, *08:23 = *08:22, *08:52
+++-----	-----+	---+-----	-----+	-----	-----	*08:23, *08:38 = *08:38, *08:52
+++-----	-----+	-----+	-----+	-----	-----	*08:18, *08:23 = *08:18, *08:52
+++-----	-----+	-----+	-----+	-----	-----	*08:19N, *08:23 = *08:19N, *08:52
+++-----	-----+	-----+	-----+	-----	-----	*08:21, *08:23 = *08:21, *08:52 = *08:23, *08:47
+++-----	-----+	-----	+-----+	-----	-----	*08:23, *08:28 = *08:23, *08:35 = *08:28, *08:52 = *08:35, *08:52
+++-----	-----+	-----	-+-----+	-----	-----	*08:23, *08:29 = *08:29, *08:52
+++-----	-----+	-----	---+-----	-----	-----	*08:23, *08:30N = *08:30N, *08:52
+++-----	-----+	-----	---+-----	-----	-----	*08:23, *08:31 = *08:31, *08:52
+++-----	-----+	-----	-----+-----	-----	-----	*08:23, *08:32 = *08:32, *08:52
+++-----	-----+	-----	-----++	-----	-----	*08:23, *08:33 = *08:33, *08:52
+++-----	-----+	-----	-----++	-----	-----	*08:23, *08:34 = *08:34, *08:52
+++-----	-----+	-----	-----+	-----	-----	*08:23, *08:42 = *08:42, *08:52
+++-----	-----+	-----	-----+	-+-----	-----	*08:23, *08:45 = *08:45, *08:52
+++-----	-----+	-----	-----+	-+-----	-----	*08:23, *08:51 = *08:51, *08:52
+++-----	-----+	-----	-----+	---+-----	-----	*08:23, *08:53 = *08:52, *08:53
+++-----	-----+	-----	-----+	-----+-----	-----	*08:23, *08:41 = *08:41, *08:52
+++-----	-----+	-----	-----+	-----+	-----	*08:23, *08:58 = *08:52, *08:58
+++-----	-----+	-----	-----+	-----+	-----	*08:23, *08:46 = *08:46, *08:52
+++-----	-----+	-----	-----+	-----+	-----	*08:23, *08:56 = *08:52, *08:56
+++-----	-----+	-----	-----+	-----	-+-----	*08:23, *08:63 = *08:52, *08:63
+++-----	-----+	-----	-----+	-----	---+-----	*08:23, *08:64 = *08:52, *08:64
+++-----	-----+	-----	-----+	-----	---+-----	*08:23, *08:65 = *08:23, *08:67N = *08:52, *08:65 = *08:52, *08:67N
+++-----	-----+	-----	-----+	-----	---+-----	*08:23, *08:68 = *08:52, *08:68
+++-----	-----+	-----	-----+	-----	---+-----	*08:23, *08:66 = *08:52, *08:66
+++-----	-----+	-----	-----+	-----	-----	*08:01:01, *08:23 = *08:01:01, *08:52 = *08:23, *08:23 = *08:23, *08:52
+++-----	-----+	-----	---+-----	-----	-----	*08:04, *08:36 = *08:24, *08:36
+++-----	-----+	-----	-----+	-----	-----	*08:04, *08:05 = *08:05, *08:24
+++-----	---+-----	---+-----	-----+	-----	-----	*08:04, *08:40 = *08:24, *08:40
+++-----	---+-----	---+-----	-----+	---+-----	-----	*08:04, *08:20 = *08:20, *08:24
+++-----	---+-----	---+-----	-----+	-----	---+-----	*08:04, *08:70 = *08:24, *08:70
+++-----	+-----+	-----	+-----+	-----	-----	*08:04, *08:37 = *08:24, *08:37
+++-----	+-----+	-----	-----+	-----	-----	*08:04, *08:07 = *08:07, *08:24
+++-----	-+-----+	-----	-----+	-----	-----	*08:04, *08:08N = *08:08N, *08:24
+++-----	---+-----	---+-----	-----+	-----	-----	*08:09, *08:17 = *08:17, *08:27
+++-----	---+-----	---+-----	-----+	-----	-----	*08:04, *08:09 = *08:04, *08:27 = *08:09, *08:24 = *08:24, *08:27
+++-----	---+-----	-----	-----+	-----	-----	*08:04, *08:10 = *08:10, *08:24
+++-----	---+-----	-----	-----+	-----	---+-----	*08:04, *08:49 = *08:24, *08:49
+++-----	---+-----	---+-----	-----+	-----	-----	*08:11, *08:17 = *08:17, *08:60
+++-----	---+-----	-----	-----+	-----	-----	*08:04, *08:11 = *08:04, *08:60 = *08:11, *08:24 = *08:24, *08:60
+++-----	---+-----	--+-----	-----+	-----	-----	*08:04, *08:16 = *08:16, *08:24
+++-----	-----++	---+-----	-----+	-----	-----	*08:12:01, *08:17 = *08:17, *08:43
+++-----	-----++	-----	-----+	-----	-----	*08:04, *08:12:01 = *08:04, *08:43 = *08:12:01, *08:24 = *08:24, *08:43

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+++++--	-----++	---+---+	-----+	-----	-----	*08:13, *08:17 = *08:17, *08:25
+++++--	-----++	-----+	-----+	-----	-----	*08:04, *08:25 = *08:24, *08:25
+++++--	-----++	-----	-----+	+-----	-----	*08:04, *08:55 = *08:24, *08:55
+++++--	-----++	-----	-----+	-----	-----	*08:04, *08:13 = *08:13, *08:24
+++++--	-----++	+-----	-----+	-----	-----	*08:04, *08:14 = *08:14, *08:24
+++++--	-----+	-+-----	-----+	-----	-----	*08:04, *08:15 = *08:04, *08:39 = *08:15, *08:24 = *08:24, *08:39
+++++--	-----+	--+-----	-----+	-----	-----	*08:04, *08:44 = *08:24, *08:44
+++++--	-----+	---+---+	+-----+	-----	-----	*08:17, *08:28 = *08:17, *08:35
+++++--	-----+	---+---+	-+-----	-----	-----	*08:17, *08:22 = *08:17, *08:30N
+++++--	-----+	---+---+	-----+	-----	-----	*08:01:01, *08:17 = *08:17, *08:21 = *08:17, *08:24 = *08:17, *08:38
+++++--	-----+	---+---+	-+-----	-----	-----	*08:04, *08:22 = *08:22, *08:24
+++++--	-----+	---+---+	-----+	-----	-----	*08:04, *08:38 = *08:24, *08:38
+++++--	-----+	---+---+	-----+	-----	-----	*08:04, *08:18 = *08:18, *08:24
+++++--	-----+	---+---+	-----+	-----	-----	*08:04, *08:19N = *08:19N, *08:24
+++++--	-----+	---+---+	-----+	-----	-----	*08:04, *08:21 = *08:04, *08:47 = *08:21, *08:24 = *08:24, *08:47
+++++--	-----+	-----	+-----+	-----	-----	*08:04, *08:28 = *08:04, *08:35 = *08:24, *08:28 = *08:24, *08:35
+++++--	-----+	-----	-+-----	-----	-----	*08:04, *08:29 = *08:24, *08:29
+++++--	-----+	-----	-+-----	-----	-----	*08:04, *08:30N = *08:24, *08:30N
+++++--	-----+	-----	-+-----	-----	-----	*08:04, *08:31 = *08:24, *08:31
+++++--	-----+	-----	---+---+	-----	-----	*08:04, *08:32 = *08:24, *08:32
+++++--	-----+	-----	---+---+	-----	-----	*08:04, *08:33 = *08:24, *08:33
+++++--	-----+	-----	-----++	-----	-----	*08:04, *08:34 = *08:24, *08:34
+++++--	-----+	-----	-----+	+-----	-----	*08:04, *08:42 = *08:24, *08:42
+++++--	-----+	-----	-----+	-+-----	-----	*08:04, *08:45 = *08:24, *08:45
+++++--	-----+	-----	-----+	-+-----	-----	*08:04, *08:51 = *08:24, *08:51
+++++--	-----+	-----	-----+	-+-----	-----	*08:04, *08:53 = *08:24, *08:53
+++++--	-----+	-----	-----+	---+---	-----	*08:04, *08:41 = *08:24, *08:41
+++++--	-----+	-----	-----+	---+---	-----	*08:04, *08:58 = *08:24, *08:58
+++++--	-----+	-----	-----+	-----+	-----	*08:04, *08:46 = *08:24, *08:46
+++++--	-----+	-----	-----+	-----+	-----	*08:04, *08:56 = *08:24, *08:56
+++++--	-----+	-----	-----+	-----	-+-----	*08:04, *08:63 = *08:24, *08:63
+++++--	-----+	-----	-----+	-----	-+-----	*08:04, *08:64 = *08:24, *08:64
+++++--	-----+	-----	-----+	-----	---+---	*08:04, *08:67N = *08:24, *08:65 = *08:24, *08:67N
+++++--	-----+	-----	-----+	-----	---+---	*08:04, *08:68 = *08:24, *08:68
+++++--	-----+	-----	-----+	-----	---+---	*08:04, *08:66 = *08:24, *08:66
+++++--	-----+	-----	-----+	-----	-----	*08:01:01, *08:04 = *08:01:01, *08:24 = *08:04, *08:24 = *08:24, *08:24
+++++--	---+---+	-----	---+---+	-----	-----	*08:09, *08:36 = *08:27, *08:36
+++++--	---+---+	-----	-----+	-----	-----	*08:05, *08:09 = *08:05, *08:27
+++++--	---+---+	-----	---+---+	-----	-----	*08:11, *08:36 = *08:36, *08:60
+++++--	---+---+	-----	-----+	-----	-----	*08:05, *08:11 = *08:05, *08:60
+++++--	---+---+	-----	---+---+	-----	-----	*08:12:01, *08:36 = *08:36, *08:43
+++++--	---+---+	-----	-----	-----	-----	*08:05, *08:12:01 = *08:05, *08:43
+++++--	---+---+	-+-----	---+---+	-----	-----	*08:15, *08:36 = *08:36, *08:39
+++++--	---+---+	-+-----	-----+	-----	-----	*08:05, *08:15 = *08:05, *08:39
+++++--	---+---+	-----+	---+---+	-----	-----	*08:21, *08:36 = *08:36, *08:47
+++++--	---+---+	-----+	-----+	-----	-----	*08:05, *08:21 = *08:05, *08:47
+++++--	---+---+	-----	+---+---+	-----	-----	*08:28, *08:36 = *08:35, *08:36
+++++--	---+---+	-----	+---+---+	-----	-----	*08:05, *08:28 = *08:05, *08:35
+++++--	---+---+	-----	-----+	-----	---+---	*08:36, *08:65 = *08:36, *08:67N
+++++--	---+---+	-----	---+---+	-----	-----	*08:01:01, *08:36 = *08:05, *08:32 = *08:05, *08:36 = *08:32, *08:36 = *08:36, *08:36
+++++--	---+---+	-----	-----+	-----	---+---	*08:05, *08:65 = *08:05, *08:67N
+++++--	---+---+	-----	-----+	-----	-----	*08:01:01, *08:05 = *08:05, *08:05
+++++--	-+-----	-+-----	-----+	-----	-----	*08:15, *08:40 = *08:39, *08:40
+++++--	-+-----	-----+	-----+	-----	-----	*08:21, *08:40 = *08:40, *08:47
+++++--	-+-----	-----	+-----+	-----	-----	*08:28, *08:40 = *08:35, *08:40
+++++--	-+-----	-----	-----+	---+---	-----	*08:08N, *08:20 = *08:40, *08:53
+++++--	-+-----	-----	-----+	-----	---+---	*08:08N, *08:70 = *08:40, *08:64

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+++++ -+-----	-----	-----	-----	-----	*08:40, *08:65 = *08:40, *08:67N
+++++ -+-----	-----	-----	-----	-----	*08:01:01, *08:40 = *08:08N, *08:40
+++++ -+-----	-+-----	-----	-----	-----	*08:15, *08:20 = *08:20, *08:39
+++++ -+-----	-+-----	-+-----	-----	-----	*08:15, *08:70 = *08:39, *08:70
+++++ -+-----	-+-----	-----	-----	-----	*08:20, *08:21 = *08:20, *08:47
+++++ -+-----	-+-----	-----	-----	-----	*08:21, *08:70 = *08:47, *08:70
+++++ -+-----	-+-----	-----	-----	-----	*08:20, *08:28 = *08:20, *08:35
+++++ -+-----	-+-----	-----	-----	-----	*08:28, *08:70 = *08:35, *08:70
+++++ -+-----	-+-----	-----	-----	-----	*08:20, *08:64 = *08:53, *08:70
+++++ -+-----	-+-----	-----	-----	-----	*08:20, *08:65 = *08:20, *08:67N
+++++ -+-----	-+-----	-----	-----	-----	*08:01:01, *08:20 = *08:20, *08:53
+++++ -+-----	-+-----	-----	-----	-----	*08:65, *08:70 = *08:67N, *08:70
+++++ -+-----	-+-----	-----	-----	-----	*08:01:01, *08:70 = *08:64, *08:70
+++++ -+-----	-+-----	-----	-----	-----	*08:09, *08:37 = *08:27, *08:37
+++++ -+-----	-+-----	-----	-----	-----	*08:07, *08:09 = *08:07, *08:27
+++++ -+-----	-+-----	-----	-----	-----	*08:11, *08:37 = *08:37, *08:60
+++++ -+-----	-+-----	-----	-----	-----	*08:07, *08:11 = *08:07, *08:60
+++++ -+-----	-+-----	-----	-----	-----	*08:12:01, *08:37 = *08:37, *08:43
+++++ -+-----	-+-----	-----	-----	-----	*08:07, *08:12:01 = *08:07, *08:43
+++++ -+-----	-+-----	-----	-----	-----	*08:15, *08:37 = *08:37, *08:39
+++++ -+-----	-+-----	-----	-----	-----	*08:07, *08:15 = *08:07, *08:39
+++++ -+-----	-+-----	-----	-----	-----	*08:21, *08:37 = *08:37, *08:47
+++++ -+-----	-+-----	-----	-----	-----	*08:07, *08:21 = *08:07, *08:47
+++++ -+-----	-+-----	-----	-----	-----	*08:37, *08:65 = *08:37, *08:67N
+++++ -+-----	-+-----	-----	-----	-----	*08:01:01, *08:37 = *08:07, *08:35 = *08:35, *08:37
+++++ -+-----	-+-----	-----	-----	-----	*08:07, *08:28 = *08:07, *08:37 = *08:28, *08:37 = *08:37, *08:37
+++++ -+-----	-+-----	-----	-----	-----	*08:07, *08:65 = *08:07, *08:67N
+++++ -+-----	-+-----	-----	-----	-----	*08:08N, *08:09 = *08:08N, *08:27
+++++ -+-----	-+-----	-----	-----	-----	*08:08N, *08:11 = *08:08N, *08:60
+++++ -+-----	-+-----	-----	-----	-----	*08:08N, *08:12:01 = *08:08N, *08:43
+++++ -+-----	-+-----	-----	-----	-----	*08:08N, *08:15 = *08:08N, *08:39
+++++ -+-----	-+-----	-----	-----	-----	*08:08N, *08:21 = *08:08N, *08:47
+++++ -+-----	-+-----	-----	-----	-----	*08:08N, *08:28 = *08:08N, *08:35
+++++ -+-----	-+-----	-----	-----	-----	*08:08N, *08:65 = *08:08N, *08:67N
+++++ -+-----	-+-----	-----	-----	-----	*08:01:01, *08:08N = *08:08N, *08:08N
+++++ -+-----	-+-----	-----	-----	-----	*08:09, *08:10 = *08:10, *08:27
+++++ -+-----	-+-----	-----	-----	-----	*08:09, *08:11 = *08:11, *08:27 = *08:27, *08:60
+++++ -+-----	-+-----	-----	-----	-----	*08:09, *08:43 = *08:12:01, *08:27 = *08:27, *08:43
+++++ -+-----	-+-----	-----	-----	-----	*08:09, *08:14 = *08:14, *08:27
+++++ -+-----	-+-----	-----	-----	-----	*08:09, *08:15 = *08:09, *08:39 = *08:15, *08:27 = *08:27, *08:39
+++++ -+-----	-+-----	-----	-----	-----	*08:09, *08:44 = *08:27, *08:44
+++++ -+-----	-+-----	-----	-----	-----	*08:09, *08:22 = *08:22, *08:27
+++++ -+-----	-+-----	-----	-----	-----	*08:09, *08:38 = *08:27, *08:38
+++++ -+-----	-+-----	-----	-----	-----	*08:09, *08:18 = *08:18, *08:27
+++++ -+-----	-+-----	-----	-----	-----	*08:09, *08:19N = *08:19N, *08:27
+++++ -+-----	-+-----	-----	-----	-----	*08:09, *08:21 = *08:09, *08:47 = *08:21, *08:27 = *08:27, *08:47
+++++ -+-----	-+-----	-----	-----	-----	*08:09, *08:26 = *08:26, *08:27
+++++ -+-----	-+-----	-----	-----	-----	*08:09, *08:50 = *08:27, *08:50
+++++ -+-----	-+-----	-----	-----	-----	*08:09, *08:28 = *08:09, *08:35 = *08:27, *08:28 = *08:27, *08:35
+++++ -+-----	-+-----	-----	-----	-----	*08:09, *08:29 = *08:27, *08:29
+++++ -+-----	-+-----	-----	-----	-----	*08:09, *08:30N = *08:27, *08:30N
+++++ -+-----	-+-----	-----	-----	-----	*08:09, *08:31 = *08:27, *08:31
+++++ -+-----	-+-----	-----	-----	-----	*08:09, *08:32 = *08:27, *08:32
+++++ -+-----	-+-----	-----	-----	-----	*08:09, *08:33 = *08:27, *08:33
+++++ -+-----	-+-----	-----	-----	-----	*08:09, *08:34 = *08:27, *08:34
+++++ -+-----	-+-----	-----	-----	-----	*08:09, *08:42 = *08:27, *08:42
+++++ -+-----	-+-----	-----	-----	-----	*08:09, *08:45 = *08:27, *08:45

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+++-----	--+---+-	-----	-----+	---+-----	-----	*08:09, *08:51 = *08:27, *08:51
+++-----	--+---+-	-----	-----+	---+-----	-----	*08:09, *08:53 = *08:27, *08:53
+++-----	--+---+-	-----	-----+	---+-----	-----	*08:09, *08:41 = *08:27, *08:41
+++-----	--+---+-	-----	-----+	---+-----	-----	*08:09, *08:58 = *08:27, *08:58
+++-----	--+---+-	-----	-----+	---+-----	-----	*08:09, *08:46 = *08:27, *08:46
+++-----	--+---+-	-----	-----+	---+-----	-----	*08:09, *08:56 = *08:27, *08:56
+++-----	--+---+-	-----	-----+	---+-----	-----	*08:09, *08:62 = *08:27, *08:62
+++-----	--+---+-	-----	-----+	---+-----	-----	*08:09, *08:63 = *08:27, *08:63
+++-----	--+---+-	-----	-----+	---+-----	-----	*08:09, *08:64 = *08:27, *08:64
+++-----	--+---+-	-----	-----+	---+-----	-----	*08:09, *08:65 = *08:09, *08:67N = *08:27, *08:65 = *08:27, *08:67N
+++-----	--+---+-	-----	-----+	---+-----	-----	*08:09, *08:68 = *08:27, *08:68
+++-----	--+---+-	-----	-----+	---+-----	-----	*08:09, *08:66 = *08:27, *08:66
+++-----	--+---+-	-----	-----+	---+-----	-----	*08:01:01, *08:09 = *08:01:01, *08:27 = *08:09, *08:27 = *08:27, *08:27
+++-----	--+---+-	-----	-----+	---+-----	-----	*08:10, *08:11 = *08:10, *08:60
+++-----	--+---+-	-----	-----+	---+-----	-----	*08:10, *08:12:01 = *08:10, *08:43
+++-----	--+---+-	-----	-----+	---+-----	-----	*08:10, *08:15 = *08:10, *08:39
+++-----	--+---+-	-----	-----+	---+-----	-----	*08:10, *08:21 = *08:10, *08:47
+++-----	--+---+-	-----	-----+	---+-----	-----	*08:10, *08:28 = *08:10, *08:35
+++-----	--+---+-	-----	-----+	---+-----	-----	*08:10, *08:65 = *08:10, *08:67N
+++-----	--+---+-	-----	-----+	---+-----	-----	*08:01:01, *08:10 = *08:10, *08:10
+++-----	--+---+-	-----	-----+	---+-----	-----	*08:15, *08:49 = *08:39, *08:49
+++-----	--+---+-	-----	-----+	---+-----	-----	*08:21, *08:49 = *08:47, *08:49
+++-----	--+---+-	-----	-----+	---+-----	-----	*08:49, *08:65 = *08:49, *08:67N
+++-----	--+---+-	-----	-----+	---+-----	-----	*08:01:01, *08:49 = *08:11, *08:49 = *08:43, *08:49 = *08:49, *08:68
+++-----	--+---+-	-----	-----+	---+-----	-----	*08:11, *08:12:01 = *08:11, *08:43 = *08:43, *08:60
+++-----	--+---+-	-----	-----+	---+-----	-----	*08:11, *08:14 = *08:14, *08:60
+++-----	--+---+-	-----	-----+	---+-----	-----	*08:11, *08:15 = *08:11, *08:39 = *08:15, *08:60 = *08:39, *08:60
+++-----	--+---+-	-----	-----+	---+-----	-----	*08:11, *08:44 = *08:44, *08:60
+++-----	--+---+-	-----	-----+	---+-----	-----	*08:11, *08:22 = *08:22, *08:60
+++-----	--+---+-	-----	-----+	---+-----	-----	*08:11, *08:38 = *08:38, *08:60
+++-----	--+---+-	-----	-----+	---+-----	-----	*08:11, *08:18 = *08:18, *08:60
+++-----	--+---+-	-----	-----+	---+-----	-----	*08:11, *08:19N = *08:19N, *08:60
+++-----	--+---+-	-----	-----+	---+-----	-----	*08:11, *08:21 = *08:11, *08:47 = *08:21, *08:60 = *08:47, *08:60
+++-----	--+---+-	-----	-----+	---+-----	-----	*08:11, *08:26 = *08:26, *08:60
+++-----	--+---+-	-----	-----+	---+-----	-----	*08:11, *08:50 = *08:50, *08:60
+++-----	--+---+-	-----	-----+	---+-----	-----	*08:11, *08:28 = *08:11, *08:35 = *08:28, *08:60 = *08:35, *08:60
+++-----	--+---+-	-----	-----+	---+-----	-----	*08:11, *08:29 = *08:29, *08:60
+++-----	--+---+-	-----	-----+	---+-----	-----	*08:11, *08:30N = *08:30N, *08:60
+++-----	--+---+-	-----	-----+	---+-----	-----	*08:11, *08:31 = *08:31, *08:60
+++-----	--+---+-	-----	-----+	---+-----	-----	*08:11, *08:32 = *08:32, *08:60
+++-----	--+---+-	-----	-----+	---+-----	-----	*08:11, *08:33 = *08:33, *08:60
+++-----	--+---+-	-----	-----+	---+-----	-----	*08:11, *08:34 = *08:34, *08:60
+++-----	--+---+-	-----	-----+	---+-----	-----	*08:11, *08:42 = *08:42, *08:60
+++-----	--+---+-	-----	-----+	---+-----	-----	*08:11, *08:45 = *08:45, *08:60
+++-----	--+---+-	-----	-----+	---+-----	-----	*08:11, *08:51 = *08:51, *08:60
+++-----	--+---+-	-----	-----+	---+-----	-----	*08:11, *08:53 = *08:53, *08:60
+++-----	--+---+-	-----	-----+	---+-----	-----	*08:11, *08:41 = *08:41, *08:60
+++-----	--+---+-	-----	-----+	---+-----	-----	*08:11, *08:58 = *08:58, *08:60
+++-----	--+---+-	-----	-----+	---+-----	-----	*08:11, *08:46 = *08:46, *08:60
+++-----	--+---+-	-----	-----+	---+-----	-----	*08:11, *08:56 = *08:56, *08:60
+++-----	--+---+-	-----	-----+	---+-----	-----	*08:11, *08:62 = *08:60, *08:62
+++-----	--+---+-	-----	-----+	---+-----	-----	*08:11, *08:63 = *08:60, *08:63
+++-----	--+---+-	-----	-----+	---+-----	-----	*08:11, *08:64 = *08:60, *08:64
+++-----	--+---+-	-----	-----+	---+-----	-----	*08:11, *08:65 = *08:11, *08:67N = *08:60, *08:65 = *08:60, *08:67N
+++-----	--+---+-	-----	-----+	---+-----	-----	*08:11, *08:68 = *08:60, *08:68
+++-----	--+---+-	-----	-----+	---+-----	-----	*08:11, *08:66 = *08:60, *08:66

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+++-----	-----++-	-----	-----+	-----	-----	*08:01:01, *08:11 = *08:01:01, *08:60 = *08:11, *08:11 = *08:11, *08:60
+++-----	-----++-	+-----	-----+	-----	-----	*08:12:01, *08:14 = *08:14, *08:43
+++-----	-----++-	-+-----	-----+	-----	-----	*08:15, *08:16 = *08:16, *08:39
+++-----	-----++-	-+-----	-----+	-----	-----	*08:12:01, *08:15 = *08:12:01, *08:39 = *08:15, *08:43 = *08:39, *08:43
+++-----	-----++-	--+-----	-----+	-----	-----	*08:16, *08:21 = *08:16, *08:47
+++-----	-----++-	--+-----	+-----+	-----	-----	*08:16, *08:28 = *08:16, *08:35
+++-----	-----++-	-+-----	-----+	-----	-----	*08:16, *08:65 = *08:16, *08:67N
+++-----	-----++-	--+-----	-----+	-----	-----	*08:01:01, *08:16 = *08:12:01, *08:44 = *08:16, *08:43 = *08:16, *08:44 = *08:43, *08:44
+++-----	-----++-	-----	-+-----	-----	-----	*08:12:01, *08:22 = *08:22, *08:43
+++-----	-----++-	-----	-----+	-----	-----	*08:12:01, *08:38 = *08:38, *08:43
+++-----	-----++-	-----	-----+	-----	-----	*08:12:01, *08:18 = *08:18, *08:43
+++-----	-----++-	-----	-----+	-----	-----	*08:12:01, *08:19N = *08:19N, *08:43
+++-----	-----++-	-----	-----+	-----	-----	*08:12:01, *08:21 = *08:12:01, *08:47 = *08:21, *08:43 = *08:43, *08:47
+++-----	-----++-	-----	-----+	-----	-----	*08:12:01, *08:26 = *08:26, *08:43
+++-----	-----++-	-----	-----+	-----	-----	*08:12:01, *08:50 = *08:43, *08:50
+++-----	-----++-	-----	+-----+	-----	-----	*08:12:01, *08:28 = *08:12:01, *08:35 = *08:28, *08:43 = *08:35, *08:43
+++-----	-----++-	-----	-+-----	-----	-----	*08:12:01, *08:29 = *08:29, *08:43
+++-----	-----++-	-----	-+-----	-----	-----	*08:12:01, *08:30N = *08:30N, *08:43
+++-----	-----++-	-----	-+-----	-----	-----	*08:12:01, *08:31 = *08:31, *08:43
+++-----	-----++-	-----	-+-----	-----	-----	*08:12:01, *08:32 = *08:32, *08:43
+++-----	-----++-	-----	-----+	-----	-----	*08:12:01, *08:33 = *08:33, *08:43
+++-----	-----++-	-----	-----+	-----	-----	*08:12:01, *08:34 = *08:34, *08:43
+++-----	-----++-	-----	-----+	-----	-----	*08:12:01, *08:42 = *08:42, *08:43
+++-----	-----++-	-----	-----+	-+-----	-----	*08:12:01, *08:45 = *08:43, *08:45
+++-----	-----++-	-----	-----+	-+-----	-----	*08:12:01, *08:51 = *08:43, *08:51
+++-----	-----++-	-----	-----+	-+-----	-----	*08:12:01, *08:53 = *08:43, *08:53
+++-----	-----++-	-----	-----+	-+-----	-----	*08:12:01, *08:41 = *08:41, *08:43
+++-----	-----++-	-----	-----+	-----	-----	*08:12:01, *08:58 = *08:43, *08:58
+++-----	-----++-	-----	-----+	-----	-----	*08:12:01, *08:46 = *08:43, *08:46
+++-----	-----++-	-----	-----+	-----	-----	*08:12:01, *08:56 = *08:43, *08:56
+++-----	-----++-	-----	-----+	-----	+-----	*08:12:01, *08:62 = *08:43, *08:62
+++-----	-----++-	-----	-----+	-----	-+-----	*08:12:01, *08:63 = *08:43, *08:63
+++-----	-----++-	-----	-----+	-----	-----	*08:12:01, *08:64 = *08:43, *08:64
+++-----	-----++-	-----	-----+	-----	-----	*08:12:01, *08:65 = *08:12:01, *08:67N = *08:43, *08:65 = *08:43, *08:67N
+++-----	-----++-	-----	-----+	-----	-----	*08:12:01, *08:68 = *08:43, *08:68
+++-----	-----++-	-----	-----+	-----	-----	*08:12:01, *08:66 = *08:43, *08:66
+++-----	-----++-	-----	-----+	-----	-----	*08:01:01, *08:12:01 = *08:01:01, *08:43 = *08:12:01, *08:43 = *08:43, *08:43
+++-----	-----++	-+-----	-----+	-----	-----	*08:15, *08:25 = *08:25, *08:39
+++-----	-----++	-+-----	-----+	+-----	-----	*08:15, *08:55 = *08:39, *08:55
+++-----	-----++	-+-----	-----+	-----	-----	*08:13, *08:15 = *08:13, *08:39
+++-----	-----++	-----	+-----	-----	-----	*08:25, *08:28 = *08:25, *08:35
+++-----	-----++	-----	+-----	-----	-----	*08:21, *08:55 = *08:25, *08:42 = *08:47, *08:55
+++-----	-----++	-----	-----+	-----	-----	*08:25, *08:65 = *08:25, *08:67N
+++-----	-----++	-----	-----+	-----	-----	*08:01:01, *08:25 = *08:13, *08:21 = *08:13, *08:47 = *08:21, *08:25 = *08:25, *08:47
+++-----	-----++	-----	+-----	+-----	-----	*08:28, *08:55 = *08:35, *08:55
+++-----	-----++	-----	+-----	-----	-----	*08:13, *08:28 = *08:13, *08:35
+++-----	-----++	-----	-----+	+-----	-----	*08:55, *08:65 = *08:55, *08:67N
+++-----	-----++	-----	-----+	+-----	-----	*08:01:01, *08:55 = *08:13, *08:42 = *08:42, *08:55
+++-----	-----++	-----	-----+	-----	-----	*08:13, *08:65 = *08:13, *08:67N
+++-----	-----+	++-----	-----+	-----	-----	*08:14, *08:15 = *08:14, *08:39
+++-----	-----+	+-----	-----+	-----	-----	*08:14, *08:21 = *08:14, *08:47
+++-----	-----+	+-----	-----+	-----	-----	*08:14, *08:65 = *08:14, *08:67N
+++-----	-----+	-+-----	-----+	-----	-----	*08:15, *08:44 = *08:39, *08:44
+++-----	-----+	-+-----	-+-----	-----	-----	*08:15, *08:22 = *08:22, *08:39

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+++-----	-----+	-+-+-----	-----+	-----	-----	*08:15, *08:18 = *08:18, *08:39
+++-----	-----+	-+-+-----	-----+	-----	-----	*08:15, *08:19N = *08:19N, *08:39
+++-----	-----+	-+-+-----	-----+	-----	-----	*08:15, *08:21 = *08:21, *08:39 = *08:39, *08:47
+++-----	-----+	-+-+-----	+-----+	-----	-----	*08:15, *08:28 = *08:15, *08:35 = *08:28, *08:39 = *08:35, *08:39
+++-----	-----+	-+-+-----	-+-+-----	-----	-----	*08:15, *08:29 = *08:29, *08:39
+++-----	-----+	-+-+-----	-+-+-----	-----	-----	*08:15, *08:30N = *08:30N, *08:39
+++-----	-----+	-+-+-----	-+-+-----	-----	-----	*08:15, *08:31 = *08:31, *08:39
+++-----	-----+	-+-+-----	-+-+-----	-----	-----	*08:15, *08:32 = *08:32, *08:39
+++-----	-----+	-+-+-----	-+-+-----	-----	-----	*08:15, *08:33 = *08:33, *08:39
+++-----	-----+	-+-+-----	-+-+-----	-----	-----	*08:15, *08:34 = *08:34, *08:39
+++-----	-----+	-+-+-----	-+-+-----	-----	-----	*08:15, *08:42 = *08:39, *08:42
+++-----	-----+	-+-+-----	-+-+-----	-----	-----	*08:15, *08:45 = *08:39, *08:45
+++-----	-----+	-+-+-----	-+-+-----	-----	-----	*08:15, *08:51 = *08:39, *08:51
+++-----	-----+	-+-+-----	-+-+-----	-----	-----	*08:15, *08:53 = *08:39, *08:53
+++-----	-----+	-+-+-----	-+-+-----	-----	-----	*08:15, *08:41 = *08:39, *08:41
+++-----	-----+	-+-+-----	-+-+-----	-----	-----	*08:15, *08:58 = *08:39, *08:58
+++-----	-----+	-+-+-----	-+-+-----	-----	-----	*08:15, *08:46 = *08:39, *08:46
+++-----	-----+	-+-+-----	-+-+-----	-----	-----	*08:15, *08:56 = *08:39, *08:56
+++-----	-----+	-+-+-----	-+-+-----	-----	-----	*08:15, *08:63 = *08:39, *08:63
+++-----	-----+	-+-+-----	-+-+-----	-----	-----	*08:15, *08:64 = *08:39, *08:64
+++-----	-----+	-+-+-----	-+-+-----	-----	-----	*08:15, *08:65 = *08:15, *08:67N = *08:39, *08:65 = *08:39, *08:67N
+++-----	-----+	-+-+-----	-+-+-----	-----	-----	*08:15, *08:68 = *08:39, *08:68
+++-----	-----+	-+-+-----	-+-+-----	-----	-----	*08:15, *08:66 = *08:39, *08:66
+++-----	-----+	-+-+-----	-+-+-----	-----	-----	*08:01:01, *08:15 = *08:01:01, *08:39 = *08:15, *08:39 = *08:39, *08:39
+++-----	-----+	-+-+-----	-+-+-----	-----	-----	*08:21, *08:44 = *08:44, *08:47
+++-----	-----+	-+-+-----	-+-+-----	-----	-----	*08:28, *08:44 = *08:35, *08:44
+++-----	-----+	-+-+-----	-+-+-----	-----	-----	*08:44, *08:65 = *08:44, *08:67N
+++-----	-----+	-+-+-----	-+-+-----	-----	-----	*08:01:01, *08:44 = *08:44, *08:44
+++-----	-----+	-+-+-----	-+-+-----	-----	-----	*08:21, *08:22 = *08:22, *08:47
+++-----	-----+	-+-+-----	-+-+-----	-----	-----	*08:21, *08:38 = *08:38, *08:47
+++-----	-----+	-+-+-----	-+-+-----	-----	-----	*08:22, *08:28 = *08:22, *08:35
+++-----	-----+	-+-+-----	-+-+-----	-----	-----	*08:28, *08:38 = *08:35, *08:38
+++-----	-----+	-+-+-----	-+-+-----	-----	-----	*08:22, *08:65 = *08:22, *08:67N
+++-----	-----+	-+-+-----	-+-+-----	-----	-----	*08:01:01, *08:22 = *08:22, *08:22 = *08:22, *08:30N = *08:22, *08:38 = *08:30N, *08:38
+++-----	-----+	-+-+-----	-+-+-----	-----	-----	*08:38, *08:65 = *08:38, *08:67N
+++-----	-----+	-+-+-----	-+-+-----	-----	-----	*08:01:01, *08:38 = *08:38, *08:38
+++-----	-----+	-+-+-----	-+-+-----	-----	-----	*08:18, *08:21 = *08:18, *08:47
+++-----	-----+	-+-+-----	-+-+-----	-----	-----	*08:18, *08:28 = *08:18, *08:35
+++-----	-----+	-+-+-----	-+-+-----	-----	-----	*08:18, *08:65 = *08:18, *08:67N
+++-----	-----+	-+-+-----	-+-+-----	-----	-----	*08:01:01, *08:18 = *08:18, *08:18
+++-----	-----+	-+-+-----	-+-+-----	-----	-----	*08:19N, *08:21 = *08:19N, *08:47
+++-----	-----+	-+-+-----	-+-+-----	-----	-----	*08:19N, *08:28 = *08:19N, *08:35
+++-----	-----+	-+-+-----	-+-+-----	-----	-----	*08:19N, *08:65 = *08:19N, *08:67N
+++-----	-----+	-+-+-----	-+-+-----	-----	-----	*08:01:01, *08:19N = *08:19N, *08:19N
+++-----	-----+	-+-+-----	-+-+-----	-----	-----	*08:21, *08:28 = *08:21, *08:35 = *08:28, *08:47 = *08:35, *08:47
+++-----	-----+	-+-+-----	-+-+-----	-----	-----	*08:21, *08:29 = *08:29, *08:47
+++-----	-----+	-+-+-----	-+-+-----	-----	-----	*08:21, *08:30N = *08:30N, *08:47
+++-----	-----+	-+-+-----	-+-+-----	-----	-----	*08:21, *08:31 = *08:31, *08:47
+++-----	-----+	-+-+-----	-+-+-----	-----	-----	*08:21, *08:32 = *08:32, *08:47
+++-----	-----+	-+-+-----	-+-+-----	-----	-----	*08:21, *08:33 = *08:33, *08:47
+++-----	-----+	-+-+-----	-+-+-----	-----	-----	*08:21, *08:34 = *08:34, *08:47
+++-----	-----+	-+-+-----	-+-+-----	-----	-----	*08:21, *08:42 = *08:42, *08:47
+++-----	-----+	-+-+-----	-+-+-----	-----	-----	*08:21, *08:45 = *08:45, *08:47
+++-----	-----+	-+-+-----	-+-+-----	-----	-----	*08:21, *08:51 = *08:47, *08:51
+++-----	-----+	-+-+-----	-+-+-----	-----	-----	*08:21, *08:53 = *08:47, *08:53
+++-----	-----+	-+-+-----	-+-+-----	-----	-----	*08:21, *08:41 = *08:41, *08:47
+++-----	-----+	-+-+-----	-+-+-----	-----	-----	*08:21, *08:58 = *08:47, *08:58

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+++-----	-----+-	-----+-	-----+	-----+-	-----	*08:21, *08:46 = *08:46, *08:47
+++-----	-----+-	-----+-	-----+	-----+-	-----	*08:21, *08:56 = *08:47, *08:56
+++-----	-----+-	-----+-	-----+	-----	+-----	*08:21, *08:63 = *08:47, *08:63
+++-----	-----+-	-----+-	-----+	-----	--+---	*08:21, *08:64 = *08:47, *08:64
+++-----	-----+-	-----+-	-----+	-----	---+---	*08:21, *08:65 = *08:21, *08:67N = *08:47, *08:65 = *08:47, *08:67N
+++-----	-----+-	-----+-	-----+	-----	-----+	*08:21, *08:68 = *08:47, *08:68
+++-----	-----+-	-----+-	-----+	-----	-----+	*08:21, *08:66 = *08:47, *08:66
+++-----	-----+-	-----+-	-----+	-----	-----	*08:01:01, *08:21 = *08:01:01, *08:47 = *08:21, *08:21 = *08:21, *08:47
+++-----	-----+-	-----+	+-----+	-----+	-----	*08:26, *08:28 = *08:26, *08:35
+++-----	-----+-	-----+	+-----+	-----	-----	*08:28, *08:50 = *08:35, *08:50
+++-----	-----+-	-----+	+-----+	-----	-----	*08:01:01, *08:26 = *08:50, *08:56
+++-----	-----+-	-----	++-----+	-----	-----	*08:28, *08:29 = *08:29, *08:35
+++-----	-----+-	-----	+-----+	-----	-----	*08:28, *08:30N = *08:30N, *08:35
+++-----	-----+-	-----	+-----+	-----	-----	*08:28, *08:32 = *08:32, *08:35
+++-----	-----+-	-----	+-----+	-----	-----	*08:28, *08:33 = *08:33, *08:35
+++-----	-----+-	-----	+-----+	-----	-----	*08:28, *08:34 = *08:34, *08:35
+++-----	-----+-	-----	+-----+	-----	-----	*08:28, *08:42 = *08:35, *08:42
+++-----	-----+-	-----	+-----+	-----	-----	*08:28, *08:45 = *08:35, *08:45
+++-----	-----+-	-----	+-----+	-----	-----	*08:28, *08:51 = *08:35, *08:51
+++-----	-----+-	-----	+-----+	-----	-----	*08:28, *08:53 = *08:35, *08:53
+++-----	-----+-	-----	+-----+	-----	-----	*08:28, *08:41 = *08:35, *08:41
+++-----	-----+-	-----	+-----+	-----	-----	*08:28, *08:58 = *08:35, *08:58
+++-----	-----+-	-----	+-----+	-----	-----	*08:28, *08:46 = *08:35, *08:46
+++-----	-----+-	-----	+-----+	-----	-----	*08:28, *08:56 = *08:35, *08:56
+++-----	-----+-	-----	+-----+	-----	-----	*08:28, *08:62 = *08:35, *08:62
+++-----	-----+-	-----	+-----+	-----	-----	*08:28, *08:63 = *08:35, *08:63
+++-----	-----+-	-----	+-----+	-----	-----	*08:28, *08:64 = *08:35, *08:64
+++-----	-----+-	-----	+-----+	-----	-----	*08:28, *08:65 = *08:28, *08:67N = *08:35, *08:65 = *08:35, *08:67N
+++-----	-----+-	-----	+-----+	-----	-----	*08:28, *08:68 = *08:35, *08:68
+++-----	-----+-	-----	+-----+	-----	-----	*08:28, *08:66 = *08:35, *08:66
+++-----	-----+-	-----	+-----+	-----	-----	*08:01:01, *08:28 = *08:01:01, *08:35 = *08:28, *08:35 = *08:35, *08:35
+++-----	-----+-	-----	+-----+	-----	-----	*08:29, *08:65 = *08:29, *08:67N
+++-----	-----+-	-----	+-----+	-----	-----	*08:01:01, *08:29 = *08:29, *08:29
+++-----	-----+-	-----	+-----+	-----	-----	*08:30N, *08:65 = *08:30N, *08:67N
+++-----	-----+-	-----	+-----+	-----	-----	*08:01:01, *08:30N = *08:30N, *08:30N
+++-----	-----+-	-----	+-----+	-----	-----	*08:31, *08:65 = *08:31, *08:67N
+++-----	-----+-	-----	+-----+	-----	-----	*08:32, *08:65 = *08:32, *08:67N
+++-----	-----+-	-----	+-----+	-----	-----	*08:01:01, *08:32 = *08:32, *08:32
+++-----	-----+-	-----	+-----+	-----	-----	*08:33, *08:65 = *08:33, *08:67N
+++-----	-----+-	-----	+-----+	-----	-----	*08:01:01, *08:33 = *08:33, *08:33
+++-----	-----+-	-----	+-----+	-----	-----	*08:34, *08:65 = *08:34, *08:67N
+++-----	-----+-	-----	+-----+	-----	-----	*08:01:01, *08:34 = *08:34, *08:34
+++-----	-----+-	-----	+-----+	-----	-----	*08:42, *08:65 = *08:42, *08:67N
+++-----	-----+-	-----	+-----+	-----	-----	*08:01:01, *08:42 = *08:42, *08:42
+++-----	-----+-	-----	+-----+	-----	-----	*08:45, *08:65 = *08:45, *08:67N
+++-----	-----+-	-----	+-----+	-----	-----	*08:01:01, *08:45 = *08:45, *08:45
+++-----	-----+-	-----	+-----+	-----	-----	*08:51, *08:65 = *08:51, *08:67N
+++-----	-----+-	-----	+-----+	-----	-----	*08:01:01, *08:51 = *08:51, *08:51
+++-----	-----+-	-----	+-----+	-----	-----	*08:53, *08:65 = *08:53, *08:67N
+++-----	-----+-	-----	+-----+	-----	-----	*08:01:01, *08:53 = *08:53, *08:53
+++-----	-----+-	-----	+-----+	-----	-----	*08:41, *08:65 = *08:41, *08:67N
+++-----	-----+-	-----	+-----+	-----	-----	*08:01:01, *08:41 = *08:41, *08:41
+++-----	-----+-	-----	+-----+	-----	-----	*08:58, *08:65 = *08:58, *08:67N
+++-----	-----+-	-----	+-----+	-----	-----	*08:01:01, *08:58 = *08:58, *08:58
+++-----	-----+-	-----	+-----+	-----	-----	*08:46, *08:65 = *08:46, *08:67N
+++-----	-----+-	-----	+-----+	-----	-----	*08:01:01, *08:46 = *08:46, *08:46
+++-----	-----+-	-----	+-----+	-----	-----	*08:56, *08:65 = *08:56, *08:67N
+++-----	-----+-	-----	+-----+	-----	-----	*08:63, *08:65 = *08:63, *08:67N
+++-----	-----+-	-----	+-----+	-----	-----	*08:01:01, *08:63 = *08:63, *08:63
+++-----	-----+-	-----	+-----+	-----	-----	*08:64, *08:65 = *08:64, *08:67N

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+++-----	-----+-	-----	-----+	-----	--+---	*08:01:01, *08:64 = *08:64, *08:64
+++-----	-----+-	-----	-----+	-----	---++-	*08:65, *08:68 = *08:67N, *08:68
+++-----	-----+-	-----	-----+	-----	---+-+	*08:65, *08:66 = *08:66, *08:67N
+++-----	-----+-	-----	-----+	-----	---+-+	*08:01:01, *08:65 = *08:01:01, *08:67N =
						*08:65, *08:67N = *08:67N, *08:67N
+++-----	-----+-	-----	-----+	-----	---+-+	*08:01:01, *08:68 = *08:68, *08:68
+++-----	-----+-	-----	-----+	-----	---+-+	*08:03, *08:03 = *08:03, *08:52
+++-----	-----+-	-----	-----+	-----	---+-+	*08:04, *08:54 = *08:54, *08:54
+++-----	-----+-	-----	-----+	-----	---+-+	*08:12:01, *08:49 = *08:49, *08:60
+++-----	-----+-	-----	-----+	-----	---+-+	*08:12:01, *08:16 = *08:16, *08:16
+++-----	-----+-	-----	-----+	-----	---+-+	*08:13, *08:25 = *08:25, *08:25
+++-----	-----+-	-----	-----+	-----	---+-+	*08:13, *08:55 = *08:55, *08:55

*08:01:01= *08:01:01-08:01:15
 *08:12:01 = *08:12:01-08:12:03
 *08:41 = *08:41 and *08:48
 *08:45 = *08:45 and *08:59
 *08:51 = *08:51 and *08:57
 *08:58 = *08:58 and *08:61
 *08:68 = *08:68 and *08:69

SPECIFICITY TABLE

HLA-B*08 SSP subtyping

Specificities and sizes of the PCR products of the 46 primer mixes used for HLA-B*08 SSP subtyping

Primer Mix	Size of spec. PCR product ¹	Size of control band ²	Amplified HLA-B*08 alleles ³	Other amplified HLA Class I alleles ⁴
1	215 bp	800 bp	*08:01:01-08:05, 08:07-08:08N, 08:10-08:11, 08:14-08:15, 08:17-08:19N, 08:21-08:24, 08:26-08:39, 08:41-08:48, 08:50-08:54, 08:56-08:59, 08:61-08:69	*07:04, 07:19, 07:25, 35:87, 37:09, 41:02:01-41:02:03, 41:04, 41:10-41:11, 41:13, 41:15, 41:18, 42:01:01-42:02, 42:05:01-42:12, 42:14-42:16, 44:106
2	215 bp	800 bp	*08:01:01-08:03, 08:05, 08:07-08:16, 08:18-08:25, 08:27-08:49, 08:51-08:53, 08:55-08:61, 08:63-08:64, 08:66-08:70	*15:180, 51:68
3	245 bp	1070 bp	*08:01:01-08:01:15, 08:04-08:05, 08:07-08:14, 08:16-08:25, 08:27-08:49, 08:51, 08:53-08:61, 08:63-08:70	*07:29, 15:142, 15:180, 39:12, C*07:124, C*07:155
4⁶	255 bp	1070 bp	*08:02	*44:49
5	245 bp	1070 bp	*08:03, 08:23, 08:52, 08:54	*15:142, 51:68
6	205 bp	1070 bp	*08:04, 08:17, 08:24, 08:54	*15:142, 44:49
7^{6,9}	215 bp, 250 bp	1070 bp	*08:03, 08:05, 08:36	*51:68
8	170 bp	1070 bp	*08:20, 08:40, 08:70	*07:05:01-07:06, 07:32, 07:40, 07:53, 07:69, 07:78, 07:90, 07:97, 07:105, 07:112, 07:123, 13:18, 13:31, 13:41, 15:30, 15:58, 15:73, 15:150, 35:18, 35:44, 39:08, 39:11, 39:18, 39:33, 39:36, 40:15-40:16, 40:23, 40:128, 40:161, 48:05, 48:19, 51:05, 51:29, 51:54, 51:61, 51:82, 52:21, 52:24,

				54:10, 54:20, 55:09, 55:21, 55:37, 57:02:01-57:02:02, 57:12, 57:28N, 57:42
9	165 bp	1070 bp	*08:07, 08:37	*07:04, 07:19, 07:25, 15:51, 15:179, 15:199, 15:218Q, 18:56, 35:38, 35:115, 37:09, 41:04, 41:18, 42:09, 42:16, 44:17, 44:51, 44:123, 45:09, 53:22, 57:24
10^{5,10}	85 bp, 170 bp,	800 bp	*08:08N, 08:40	
11	290 bp	800 bp	*08:09, 08:27	*41:01, 41:05-41:07, 41:12, 41:14, 41:16-41:17, 42:04, 55:20
12	385 bp	1070 bp	*08:10	
13^{5,11}	85 bp, 290 bp	1070 bp	*08:11, 08:49, 08:60	*42:13, 53:15
14^{5,12}	115 bp, 280 bp	1070 bp	*08:12:01-08:12:03, 08:16, 08:43, 08:49	*41:03:01-41:03:02, 42:13, 53:15
15⁵	75 bp	1070 bp	*08:01:01-08:05, 08:07-08:25, 08:27- 08:49, 08:50 ^w , 08:51- 08:55, 08:57-08:61, 08:62 ^w , 08:63-08:65, 08:67N-08:70	*07:29, 07:86 ^w , 14:11 ^w , 15:03:01 ^w -15:03:03 ^w , 15:09 ^w - 15:10:02 ^w , 15:18:01 ^w - 15:18:04 ^w , 15:23 ^w , 15:29 ^w , 15:37 ^w , 15:47 ^w , 15:49 ^w , 15:51 ^w -15:52 ^w , 15:54 ^w , 15:61 ^w -15:62 ^w , 15:64 ^w , 15:69 ^w , 15:72 ^w , 15:74 ^w , 15:80 ^w , 15:90 ^w -15:91 ^w , 15:93 ^w , 15:98 ^w -15:99 ^w , 15:103 ^w , 15:108 ^w , 15:114 ^w - 15:115 ^w , 15:119 ^w , 15:123 ^w - 15:124 ^w , 15:127 ^w , 15:131 ^w - 15:134 ^w , 15:151 ^w , 15:153 ^w , 15:156 ^w , 15:158 ^w , 15:161 ^w , 15:173 ^w , 15:176 ^w , 15:180, 15:186 ^w , 15:197 ^w -15:198 ^w , 15:200 ^w , 15:210 ^w , 15:221 ^w , 18:25 ^w , 35:25 ^w , 35:124 ^w - 35:125 ^w , 35:142 ^w , 39:04 ^w , 40:12 ^w , 48:22 ^w , 52:16 ^w , 54:21 ^w , 56:16 ^w , 58:12 ^w , 83:01 ^w
16⁵	105 bp	800 bp	*08:13, 08:25, 08:55	*53:15
17⁵	95 bp	1070 bp	*08:14	*07:28, 07:118, 27:32, 44:54, 44:106
18¹³	425 bp,	800 bp	*08:15, 08:39	*07:13, 07:15, 07:92-07:93,

	470 bp			38:27, 39:27, 40:73, 67:02, 73:01-73:02
19 ¹⁴	245 bp, 415 bp	1070 bp	*08:16, 08:44	*07:13, 07:15, 67:02
20 ^{5,7,15}	140 bp, 205 bp	1070 bp	*08:17, 08:22, 08:38, 08:54	*15:142, 44:49
21	465 bp	1070 bp	*08:18	*07:102, 73:01-73:02
22 ^{5,6}	130 bp	800 bp	*08:19N	
23 ^{5,8,16}	85 bp, 235 bp	800 bp	*08:17, 08:21, 08:25, 08:47	*13:39, 15:57, 15:135, 35:27, 35:56, 41:17, 44:75, 53:15, 55:12, 78:06, C*05:30
24	215 bp	1070 bp	*08:26, 08:50	*07:08, 07:32, 07:38, 15:08, 15:29, 15:56, 15:191, 35:01:01:01-35:19, 35:21-35:25, 35:27, 35:29-35:49, 35:51-35:62, 35:64-35:71, 35:74-35:75, 35:77, 35:79-35:81, 35:83, 35:86-35:94, 35:96-35:134N, 35:136-35:161, 35:163, 38:06-38:07, 39:58, 44:06, 48:06, 51:01:01-51:06:02, 51:08-51:21, 51:23-51:24:04, 51:26-51:46, 51:48-51:67, 51:69-51:102, 51:104-51:113, 52:06:01-52:06:02, 53:01:01-53:08:02, 53:10-53:16, 53:18-53:24, 59:01:01:01-59:05, 78:01-78:02:02, 78:04, 78:07
25	160 bp	1070 bp	*08:28, 08:35, 08:37	*15:51, 15:179, 15:199, 15:218Q, 18:56, 35:115, 42:09, 44:17, 45:09, 51:97, 53:22, 57:24, C*07:68 , C*07:140 , C*07:151
26	390 bp	1070 bp	*08:29	
27 ^{5,17}	105 bp, 140 bp	1070 bp	*08:22, 08:30N	
28 ⁵	85 bp	1070 bp	*08:31	
29 ¹⁸	150 bp, 250 bp	1070 bp	*08:32, 08:36	*51:68
30	280 bp	1070 bp	*08:33	
31	380 bp	1070 bp	*08:34	
32 ⁷	230 bp	1070 bp	*08:01:01-08:05, 08:08N-08:13, 08:15-08:27, 08:29-08:30N,	*35:87, 41:01-41:03:02, 41:05, 41:07, 41:11-41:14, 41:16-41:17, 42:01:01-42:02, 42:04,

			08:32-08:36, 08:38-08:48, 08:50-08:70	42:06-42:07, 42:10-42:13, 42:15, 55:20
33 ¹⁹	220 bp, 285 bp	800 bp	*08:42, 08:55	*38:19, 39:03, 39:14, 39:24:01-39:24:02, 39:29, 39:37
34 ²⁰	210 bp, 305 bp	1070 bp	*08:45, 08:59	
35 ^{5,21}	120 bp, 205 bp	1070 bp	*08:51, 08:57	
36 ^{5,6}	115 bp	800 bp	*08:20, 08:53	
37 ²²	155 bp, 270 bp	1070 bp	*08:41, 08:48	
38 ²³	175 bp, 265 bp	1070 bp	*08:58, 08:61	
39 ⁸	190 bp	1070 bp	*08:46	
40	265 bp	1070 bp	*08:26, 08:56	*07:56, 07:72, 38:28, 39:63, 40:10:01 [?] -40:10:02 [?] , 40:21 [?] , 40:58 [?] , 40:137 [?] , 41:12, 49:03
41	215 bp	1070 bp	*08:62	*18:07:01-18:07:02, 18:29, 27:23, 35:50, 35:84, 35:162, 37:21, 40:07-40:08, 40:13, 40:68, 40:106, 40:162, 51:103
42	255 bp	1070 bp	*08:63	
43 ²⁴	185 bp, 215 bp	1070 bp	*08:64, 08:70	*07:55, 07:100, 07:113, 15:07:01-15:07:02, 15:45, 15:68, 15:126, 15:207, 46:12, 48:19
44 ²⁵	170 bp, 215 bp	1070 bp	*08:65, 08:67N	*39:12
45 ^{5,26}	120 bp, 225 bp	1070 bp	*08:49, 08:68-08:69	*42:06
46 ⁸	145 bp	1070 bp	*08:66	

¹Alleles are assigned by the presence of specific PCR product(s). However, the sizes of the specific PCR products may be helpful in the interpretation of HLA-B*08 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*08 subtyping.

In addition, wells number 2, 10, 11, 16, 18, 22, 23, 33 and 36 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 B*08:17 and 08:47 alleles may be distinguished by the different sizes of the specific PCR products generated by primer mix 23.

The B*08:41 and 08:48 alleles may be distinguished by the different sizes of the specific PCR products generated by primer mix 37.

The B*08:45 and 08:59 alleles may be distinguished by the different sizes of the specific PCR products generated by primer mix 34.

The B*08:51 and 08:57 alleles may be distinguished by the different sizes of the specific PCR products generated by primer mix 35.

The B*08:58 and 08:61 alleles may be distinguished by the different sizes of the specific PCR products generated by primer mix 38.

The B*08:68 and 08:69 alleles may be distinguished by the different sizes of the specific PCR products generated by primer mix 45.

⁴Due to the sharing of sequence motifs between HLA-B alleles non-HLA-B*08 alleles will be amplified by primer mixes 1 to 9, 11, 13 to 21, 23 to 25, 29, 32, 33, 40, 41 and 43 to 45. In addition, the C*05:30 allele will be amplified by the primer mix 23, the C*07:68, C*07:140 and C*07:151 alleles will be amplified by primer mix 25 and the C*07:124 and C*07:155 alleles will be amplified by primer mix 3.

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

⁶Primer mix 4, 7, 22 and 36 may have a tendency of giving rise to primer oligomer formation.

⁷Primer mix 32 may give a lower yield of HLA-specific PCR product.

⁸Primer mixes 23, 39 and 46 have a tendency of giving rise to nonspecific amplifications, most pronounced in primer mix 46.

⁹Primer mix 7: Specific PCR fragment of 215 bp in the B*08:05 allele. Specific PCR fragment of 250 bp in the B*08:03 and 08:36 and in the B*51:68 alleles.

¹⁰Primer mix 10: Specific PCR fragment of 85 bp in the B*08:40 allele. Specific PCR fragment of 170 bp in the B*08:08N allele.

¹¹Primer mix 13: Specific PCR fragment of 85 bp in the B*08:11 allele. Specific PCR fragment of 290 bp in the B*08:49 and 08:60 and in the B*42:13 and 53:15 alleles.

¹²Primer mix 14: Specific PCR fragment of 115 bp in the B*08:43 allele. Specific PCR fragment of 280 bp in the B*08:12:01-08:12:03, 08:16 and 08:49 and the B*41:03:01-41:03:02, 42:13 and 53:15 alleles.

¹³Primer mix 18: Specific PCR fragment of 425 bp in the B*08:15 and the B*07:13, 07:15, 07:92, 39:27, 40:73, 67:02 and 73:01-73:02 alleles. Specific PCR fragment of 470 bp in the B*08:39 and the B*07:93 and 38:27 alleles.

¹⁴Primer mix 19: Specific PCR fragment of 245 bp in the B*08:44 allele. Specific PCR fragment of 415 bp in the B*08:16 and in the B*07:13, 07:15, and 67:02 alleles.

¹⁵Primer mix 20: Specific PCR fragment of 140 bp in the B*08:22 allele. Specific PCR fragment of 205 bp in B*08:17, 08:38 and 08:54 and in the B*15:142 and 44:49 alleles.

¹⁶Primer mix 23: Specific PCR fragment of 85 bp in the B*08:21 and 08:25 and the B*41:17 and 53:15 alleles. Specific PCR fragment of 235 bp in the B*08:17 and 08:47 and the B*13:39, 15:57, 15:135, 35:27, 35:56, 44:75, 55:12 and 78:06 and the C*05:30 alleles.

¹⁷Primer mix 27: Specific PCR fragment of 105 bp in the B*08:30N allele. Specific PCR fragment of 140 bp in the B*08:22 allele.

¹⁸Primer mix 29: Specific PCR fragment of 150 bp in the B*08:32 and in the B* 51:68 alleles. Specific fragment of 250 bp in the B*08:36 allele.

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¹⁹Primer mix 33: Specific PCR fragment of 220 bp in the B*08:55 and the B*38:19, 39:03, 39:14, 39:24:01-39:24:02, 39:29 and 39:37 alleles. Specific fragment of 285 bp in the B*08:42 allele.

²⁰Primer mix 34: Specific PCR fragment of 210 bp in the B*08:45 allele. Specific fragment of 305 bp in the B*08:59 allele.

²¹Primer mix 35: Specific PCR fragment of 120 bp in the B*08:51 allele. Specific fragment of 205 bp in the B*08:57 allele.

²²Primer mix 37: Specific PCR fragment of 155 bp in the B*08:41 allele. Specific fragment of 270 bp in the B*08:48 allele.

²³Primer mix 38: Specific PCR fragment of 175 bp in the B*08:61 allele. Specific fragment of 265 bp in the B*08:58 allele.

²⁴Primer mix 43: Specific PCR fragment of 185 bp in the B*08:64 and the B*07:113 alleles. Specific fragment of 215 bp in the B*08:70 and the B*07:55, 07:100, 15:07:01-15:07:02, 15:45, 15:68, 15:126, 15:207, 46:12 and 48:19 alleles.

²⁵Primer mix 44: Specific PCR fragment of 170 bp in the B*08:67N allele. Specific fragment of 215 bp in the B*08:65 and the B*39:12 alleles.

²⁶Primer mix 45: Specific PCR fragment of 120 bp in the B*08:68 allele. Specific fragment of 225 bp in the B*08:49 and 08:69 and the B*42:06 alleles.

‘w’, might be weakly amplified.

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

INTERPRETATION TABLE

HLA-B*08 SSP subtyping

Amplification patterns of the B*08:01 to B*08:70 alleles

	Well ¹¹																							
	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.	215	215	245	255	245	205	215	170	165	85	290	385	85	115	75	105	95	425	245	140	465	130	85	215
PCR product(s)							250			170			290	280				470	415	205			235	
Length of int. pos. control ¹	800	800	1070	1070	1070	1070	1070	1070	1070	800	800	1070	1070	1070	1070	800	1070	800	1070	1070	1070	800	800	1070
5'-primer(s) ²	5'-AgC ³ 363	5'-TCg ³ 97	5'-TCg ³ 97	5'-TCg ³ 97	5'-TCg ³ 97	5'-TCg ³ 97	5'-TCg ³ 97	5'-ATA ³ 412	5'-ATg ³ 412	5'-Cg ³ 475	5'-TCC ³ 355	5'-ggC ³ 44	5'-TCA ³ 355	5'-Agg ³ 363	5'-CCA ³ 106	5'-gCT ³ 539	5'-AgC ³ 363	5'-ggC ³ 44	5'-ggC ³ 44	5'-TCg ³ 97	5'-ggC ³ 44	5'-CAC ³ 636	5'-CCA ³ 106	5'-TCT ³ 97
										5'-CgA ³ 560	5'-Tgg ³ 357		5'-CgC ³ 560	5'-Agg ³ 363					5'-AgC ³ 363				5'-CCT ³ 560	
													5'-ggT ³ 530											
3'-primer(s) ³	5'-gTC ³ 538	5'-TgA ³ 272	5'-TCT ³ 299	5'-gTg ³ 309	5'-gTA ³ 292	5'-CCg ³ 251	5'-Agg ³ 269	5'-TCC ³ 539	5'-gTC ³ 538	5'-gTg ³ 603	5'-gTg ³ 603	5'-gTC ³ 259	5'-gTg ³ 603	5'-gTg ³ 603	5'-TgA ³ 142	5'-gTg ³ 603	5'-gTC ³ 418	5'-TCA ³ 299	5'-ggg ³ 119	5'-gTC ³ 261	5'-CgT ³ 341	5'-CTA ³ 724	5'-ggT ³ 302	5'-TgA ³ 272
					5'-ATC ³ 309	5'-Tgg ³ 272	5'-ggT ³ 302											5'-T ³ 343	5'-AgC ³ 289	5'-gCg ³ 461			5'-gTg ³ 603	
						5'-CCA ³ 307																		
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																								
*08:01:01-08:01:15	1	2	3												15									
*08:02	1	2		4											15									
*08:03	1	2			5		7								15									
*08:04	1		3			6									15									
*08:05	1	2	3				7								15									
*08:07	1	2	3						9						15									
*08:08N	1	2	3							10					15									
*08:09		2	3								11				15									
*08:10	1	2	3									12			15									
*08:11	1	2	3										13		15									
*08:12:01-08:12:03		2	3											14	15									
*08:13		2	3												15	16								
*08:14	1	2	3												15		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

INTERPRETATION TABLE																											
HLA-B*08 SSP subtyping																											
Amplification patterns of the B*08:01 to B*08:70 alleles																											
Well ¹¹																											
25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46						
160	390	105	85	150	280	380	230	220	210	120	115	155	175	190	265	215	255	185	170	120	145	Length of spec.					
		140		250				285	305	205		270	265					215	215	225		PCR product(s)					
1070	1070	1070	1070	1070	1070	1070	1070	800	1070	1070	800	1070	1070	1070	1070	1070	1070	1070	1070	1070	1070	Length of int. pos. control ¹					
419	317	363	610	97	364	319	412	363	44	108	527	160	139	97	44	97	388	363	97	419	103	5'-primer(s) ²					
5'-gTC ^{3'}	5'-gCA ^{3'}	5'-AgC ^{3'}	5'-TgA ^{3'}	5'-TCg ^{3'}	5'-gCT ^{3'}	5'-gCT ^{3'}	5'-ATA ^{3'}	5'-AgC ^{3'}	5'-ggC ^{3'}	5'-ATC ^{3'}	5'-TgA ^{3'}	5'-ACT ^{3'}	5'-TCg ^{3'}	5'-TCg ^{3'}	5'-ggC ^{3'}	5'-TCC ^{3'}	5'-CgA ^{3'}	5'-AgC ^{3'}	5'-TCg ^{3'}	5'-gTT ^{3'}	5'-CCA ^{3'}						
										194		376	379							419							
																				523							
538	419	426	3 rd I	206	603	412	603	544	85	272	603	272	272	245	142	272	603	506	225	603	206	3'-primer(s) ³					
5'-gTC ^{3'}	5'-CgT ^{3'}	5'-TCT ^{3'}	5'-TAT ^{3'}	5'-CCg ^{3'}	5'-gTg ^{3'}	5'-gTT ^{3'}	5'-gTg ^{3'}	5'-ggT ^{3'}	5'-CAA ^{3'}	5'-TgA ^{3'}	5'-gTg ^{3'}	5'-TgA ^{3'}	5'-TgA ^{3'}	5'-ACC ^{3'}	5'-TgC ^{3'}	5'-TgA ^{3'}	5'-gTg ^{3'}	5'-Tgg ^{3'}	5'-ATT ^{3'}	5'-gTg ^{3'}	5'-CCT ^{3'}						
		461		307				608	180			603	603					538	272								
25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	Well No.					
																						HLA-B allele ⁴					
							32															*08:01:01-08:01:15					
							32															*08:02					
							32															*08:03					
							32															*08:04					
							32															*08:05					
							32															*08:07					
							32															*08:08N					
							32															*08:09					
							32															*08:10					
							32															*08:11					
							32															*08:12:01-08:12:03					
							32															*08:13					
																						*08:14					
25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	Well No.					

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Length of spec.	215	215	245	255	245	205	215	170	165	85	290	385	85	115	75	105	95	425	245	140	465	130	85	215
PCR product(s)							250			170				290	280			470	415	205			235	
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
*08:15	1	2													15			18						
*08:16		2	3											14	15				19					
*08:17	1		3			6									15					20			23	
*08:18	1	2	3												15						21			
*08:19N	1	2	3												15							22		
*08:20		2	3					8							15									
*08:21, 08:47 ⁵	1	2	3												15								23	
*08:22	1	2	3												15					20				
*08:23	1	2	3		5										15									
*08:24	1	2	3			6									15									
*08:25		2	3												15	16							23	
*08:26	1																							24
*08:27	1	2	3								11				15									
*08:28	1	2	3												15									
*08:29	1	2	3												15									
*08:30N	1	2	3												15									
*08:31	1	2	3												15									
*08:32	1	2	3												15									
*08:33	1	2	3												15									
*08:34	1	2	3												15									
*08:35	1	2	3												15									
*08:36	1	2	3				7								15									
*08:37	1	2	3						9						15									
*08:38	1	2	3												15					20				
*08:39	1	2	3												15			18						
*08:40		2	3					8		10					15									
*08:41, 08:48 ⁶	1	2	3												15									
*08:42	1	2	3												15									
*08:43	1	2	3											14	15									
*08:44	1	2	3												15				19					
*08:45, 08:59 ⁷	1	2	3												15									
*08:46	1	2	3												15									
*08:49		2	3										13	14	15									
*08:50	1														w								24	
*08:51, 08:57 ⁸	1	2	3												15									
*08:52	1	2			5										15									
*08:53	1	2	3												15									
*08:54	1		3		5	6									15					20				
*08:55		2	3												15	16								
*08:56	1	2	3																					
*08:58, 08:61 ⁹	1	2	3												15									
*08:60		2	3										13		15									
*08:62	1														w									
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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160	390	105	85	150	280	380	230	220	210	120	115	155	175	190	265	215	255	185	170	120	145	Length of spec. PCR product(s)
		140		250				285	305	205		270	265					215	215	225		
25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	Well No.
							32															*08:15
							32															*08:16
							32															*08:17
							32															*08:18
							32															*08:19N
							32			36												*08:20
							32															*08:21, 08:47 ⁵
	27						32															*08:22
							32															*08:23
							32															*08:24
							32															*08:25
							32							40								*08:26
							32															*08:27
25																						*08:28
	26						32															*08:29
		27					32															*08:30N
			28																			*08:31
				29			32															*08:32
					30		32															*08:33
						31	32															*08:34
25							32															*08:35
				29			32															*08:36
25																						*08:37
							32															*08:38
							32															*08:39
							32															*08:40
							32					37										*08:41, 08:48 ⁶
							32	33														*08:42
							32															*08:43
							32															*08:44
							32		34													*08:45, 08:59 ⁷
							32					39										*08:46
																				45		*08:49
							32															*08:50
							32			35												*08:51, 08:57 ⁸
							32															*08:52
							32				36											*08:53
							32															*08:54
							32	33														*08:55
							32							40								*08:56
							32					38										*08:58, 08:61 ⁹
							32															*08:60
							32									41						*08:62
25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	Well No.

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Length of spec.	215	215	245	255	245	205	215	170	165	85	290	385	85	115	75	105	95	425	245	140	465	130	85	215
PCR product(s)							250			170				290	280			470	415	205			235	
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
*08:63	1	2	3												15									
*08:64	1	2	3												15									
*08:65	1		3												15									
*08:66	1	2	3																					
*08:67N	1	2	3												15									
*08:68, 08:69 ¹⁰	1	2	3												15									
*08:70		2	3					8							15									
*07:04, 07:19, 07:25, 37:09, 41:04, 41:18, 42:16	1								9															
*07:05:01-07:06, 07:40, 07:53, 07:69, 07:78, 07:90, 07:97, 07:105, 07:112, 07:123, 13:18, 13:31, 13:41, 15:30, 15:58, 15:73, 15:150, 39:08, 39:11, 39:18, 39:33, 39:36, 40:15- 40:16, 40:23, 40:128, 40:161, 48:05, 52:21, 52:24, 54:10, 54:20, 55:09, 55:21, 55:37, 57:02:01-57:02:02, 57:12, 57:28N, 57:42								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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160	390	105	85	150	280	380	230	220	210	120	115	155	175	190	265	215	255	185	170	120	145	Length of spec. PCR product(s)
		140		250				285	305	205		270	265				215	215	225			Well No.
25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	
							32										42					*08:63
							32											43				*08:64
							32												44			*08:65
							32													46		*08:66
							32												44			*08:67N
							32													45		*08:68, 08:69 ¹⁰
							32											43				*08:70
																						*07:04, 07:19, 07:25, 37:09, 41:04, 41:18, 42:16
																						*07:05:01-07:06, 07:40, 07:53, 07:69, 07:78, 07:90, 07:97, 07:105, 07:112, 07:123, 13:18, 13:31, 13:41, 15:30, 15:58, 15:73, 15:150, 39:08, 39:11, 39:18, 39:33, 39:36, 40:15- 40:16, 40:23, 40:128, 40:161, 48:05, 52:21, 52:24, 54:10, 54:20, 55:09, 55:21, 55:37, 57:02:01-57:02:02, 57:12, 57:28N, 57:42
25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	Well No.

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Length of spec.	215	215	245	255	245	205	215	170	165	85	290	385	85	115	75	105	95	425	245	140	465	130	85	215
PCR product(s)							250			170				290	280			470	415	205			235	
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
*07:08, 07:38, 15:08, 15:56, 15:191, 35:01:01:01-35:17, 35:19, 35:21-35:24:02, 35:29-35:37, 35:39- 35:43:02, 35:45-35:49, 35:51-35:55, 35:57- 35:62, 35:64-35:71, 35:74-35:75, 35:77, 35:79-35:81, 35:83, 35:86, 35:88-35:94, 35:96-35:114, 35:116- 35:123, 35:126- 35:134N, 35:136- 35:141, 35:143-35:161, 35:163, 38:06-38:07, 39:58, 44:06, 48:06, 51:01:01-51:04, 51:06:01-51:06:02, 51:08-51:21, 51:23- 51:24:04, 51:26-51:28, 51:30-51:46, 51:48- 51:53, 51:55-51:60, 51:62-51:67, 51:69- 51:81, 51:83-51:96, 51:98N-51:102, 51:104- 51:113, 52:06:01- 52:06:02, 53:01:01- 53:08:02, 53:10-53:14, 53:16, 53:18-53:21, 53:23-53:24, 59:01:01:01-59:05, 78:01-78:02:02, 78:04, 78:07																								
*07:13, 07:15, 67:02																		18	19					
*07:28, 07:118, 27:32, 44:54																	17							
*07:29			3												15									
*07:32, 35:18, 35:44, 51:05, 51:29, 51:54, 51:61, 51:82								8																24
*07:55, 07:100, 07:113, 15:07:01-15:07:02, 15:45, 15:68, 15:126, 15:207, 46:12																								
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

Lot No.: **41M**

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160	390	105	85	150	280	380	230	220	210	120	115	155	175	190	265	215	255	185	170	120	145	Length of spec.
		140		250				285	305	205		270	265					215	215	225		PCR product(s)
25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	Well No.
																						*07:08, 07:38, 15:08, 15:56, 15:191, 35:01:01:01-35:17, 35:19, 35:21-35:24:02, 35:29-35:37, 35:39- 35:43:02, 35:45-35:49, 35:51-35:55, 35:57- 35:62, 35:64-35:71, 35:74-35:75, 35:77, 35:79-35:81, 35:83, 35:86, 35:88-35:94, 35:96-35:114, 35:116- 35:123, 35:126- 35:134N, 35:136- 35:141, 35:143-35:161, 35:163, 38:06-38:07, 39:58, 44:06, 48:06, 51:01:01-51:04, 51:06:01-51:06:02, 51:08-51:21, 51:23- 51:24:04, 51:26-51:28, 51:30-51:46, 51:48- 51:53, 51:55-51:60, 51:62-51:67, 51:69- 51:81, 51:83-51:96, 51:98N-51:102, 51:104- 51:113, 52:06:01- 52:06:02, 53:01:01- 53:08:02, 53:10-53:14, 53:16, 53:18-53:21, 53:23-53:24, 59:01:01:01-59:05, 78:01-78:02:02, 78:04, 78:07
																						*07:13, 07:15, 67:02
																						*07:28, 07:118, 27:32, 44:54
																						*07:29
																						*07:32, 35:18, 35:44, 51:05, 51:29, 51:54, 51:61, 51:82
																		43				*07:55, 07:100, 07:113, 15:07:01-15:07:02, 15:45, 15:68, 15:126, 15:207, 46:12
25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	Well No.

Lot No.: **41M**

Lot-specific information

www.olerup-ssp.com

Length of spec.	215	215	245	255	245	205	215	170	165	85	290	385	85	115	75	105	95	425	245	140	465	130	85	215
PCR product(s)							250			170			290	280				470	415	205			235	
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
*07:56, 07:72, 38:28, 39:63, 49:03																								
*07:86, 14:11, 15:03:01- 15:03:03, 15:09- 15:10:02, 15:18:01- 15:18:04, 15:23, 15:37, 15:47, 15:49, 15:52, 15:54, 15:61-15:62, 15:64, 15:69, 15:72, 15:74, 15:80, 15:90- 15:91, 15:93, 15:98- 15:99, 15:103, 15:108, 15:114-15:115, 15:119, 15:123-15:124, 15:127, 15:131-15:134, 15:151, 15:153, 15:156, 15:158, 15:161, 15:173, 15:176, 15:186, 15:197-15:198, 15:200, 15:210, 15:221, 18:25, 39:04, 40:12, 48:22, 52:16, 54:21, 56:16, 58:12, 83:01																								
*07:92-07:93, 38:27, 39:27, 40:73																		18						
*07:102																					21			
*13:39, 15:57, 15:135, 44:75, 55:12, 78:06, C*05:30																							23	
*15:29, 35:25, 35:124- 35:125, 35:142															w									24
*15:51									9						w									
*15:142			3		5	6													20					
*15:179, 15:199, 15:218Q, 18:56, 44:17, 45:09, 57:24									9															
*15:180		2	3												15									
*18:07:01-18:07:02, 18:29, 27:23, 35:50, 35:84, 35:162, 37:21, 40:07-40:08, 40:13, 40:68, 40:106, 40:162, 51:103																								
*35:27, 35:56																							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

Lot No.: **41M**

Lot-specific information

www.olerup-ssp.com

160	390	105	85	150	280	380	230	220	210	120	115	155	175	190	265	215	255	185	170	120	145	Length of spec.	
		140		250				285	305	205		270	265					215	215	225		PCR product(s)	
25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	Well No.	
															40							*07:56, 07:72, 38:28, 39:63, 49:03	
																						*07:86, 14:11, 15:03:01-15:03:03, 15:09-15:10:02, 15:18:01-15:18:04, 15:23, 15:37, 15:47, 15:49, 15:52, 15:54, 15:61-15:62, 15:64, 15:69, 15:72, 15:74, 15:80, 15:90-15:91, 15:93, 15:98-15:99, 15:103, 15:108, 15:114-15:115, 15:119, 15:123-15:124, 15:127, 15:131-15:134, 15:151, 15:153, 15:156, 15:158, 15:161, 15:173, 15:176, 15:186, 15:197-15:198, 15:200, 15:210, 15:221, 18:25, 39:04, 40:12, 48:22, 52:16, 54:21, 56:16, 58:12, 83:01	
																						*07:92-07:93, 38:27, 39:27, 40:73	
																						*07:102	
																						*13:39, 15:57, 15:135, 44:75, 55:12, 78:06, C*05:30	
																						*15:29, 35:25, 35:124-35:125, 35:142	
25																						*15:51	
																						*15:142	
25																						*15:179, 15:199, 15:218Q, 18:56, 44:17, 45:09, 57:24	
																						*15:180	
																41						*18:07:01-18:07:02, 18:29, 27:23, 35:50, 35:84, 35:162, 37:21, 40:07-40:08, 40:13, 40:68, 40:106, 40:162, 51:103	
																						*35:27, 35:56	
25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	Well No.	

Lot No.: **41M**

Lot-specific information

www.olerup-ssp.com

Length of spec.	215	215	245	255	245	205	215	170	165	85	290	385	85	115	75	105	95	425	245	140	465	130	85	215
PCR product(s)							250			170				290	280			470	415	205			235	
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
*35:38									9															24
*35:87	1																							24
*35:115, 53:22									9															24
*38:19, 39:03, 39:14, 39:24:01-39:24:02, 39:29, 39:37																								
*39:12			3																					
*40:10:01-40:10:02, 40:21, 40:58, 40:137																								
*41:01, 41:05, 41:07, 41:14, 41:16, 42:04, 55:20											11													
*41:02:01-41:02:03, 41:11, 41:13, 42:01:01- 42:02, 42:07, 42:10- 42:12, 42:15	1																							
*41:03:01-41:03:02														14										
*41:06											11													
*41:10, 41:15, 42:05:01- 42:05:02, 42:08, 42:14	1																							
*41:12											11													
*41:17											11												23	
*42:06	1																							
*42:09	1								9															
*42:13													13	14										
*44:49				4		6													20					
*44:51, 44:123									9															
*44:106	1																17							
*48:19								8																
*51:68		2			5		7																	
*51:97																								24
*53:15													13	14		16							23	24
*73:01-73:02																	18			21				
C*07:68, C*07:140, C*07:151																								
C*07:124, C*07:155			3																					
HLA-B allele																								
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

Lot No.: **41M**

Lot-specific information

www.olerup-ssp.com

160	390	105	85	150	280	380	230	220	210	120	115	155	175	190	265	215	255	185	170	120	145	Length of spec. PCR product(s)
		140		250				285	305	205		270	265					215	215	225		
25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	Well No.
							32															*35:38
																						*35:87
25																						*35:115, 53:22
								33														*38:19, 39:03, 39:14, 39:24:01-39:24:02, 39:29, 39:37
																		44				*39:12
														?								*40:10:01-40:10:02, 40:21, 40:58, 40:137
							32															*41:01, 41:05, 41:07, 41:14, 41:16, 42:04, 55:20
							32															*41:02:01-41:02:03, 41:11, 41:13, 42:01:01- 42:02, 42:07, 42:10- 42:12, 42:15
							32															*41:03:01-41:03:02
																						*41:06
																						*41:10, 41:15, 42:05:01- 42:05:02, 42:08, 42:14
							32							40								*41:12
							32															*41:17
							32													45		*42:06
25																						*42:09
							32															*42:13
																						*44:49
																						*44:51, 44:123
																						*44:106
																		43				*48:19
				29																		*51:68
25																						*51:97
																						*53:15
																						*73:01-73:02
25																						C*07:68, C*07:140, C*07:151
																						C*07:124, C*07:155
25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	HLA-B allele Well No.

Lot No.: **41M**

Lot-specific information

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¹The internal positive control primer pairs amplify segments of the human growth hormone gene. The two different control primer pairs give rise to either an internal positive control band of 1070 base pairs, for most wells, or a band of 800 base pairs, for some wells.

Well number 1 contains the primer pair giving rise to the shorter, 800 bp, internal positive control band in order to help in the correct orientation of the HLA-B*08 subtyping.

In addition, wells number 2, 10, 11, 16, 18, 22, 23, 33 and 36 contain the primer pair giving rise to the shorter, 800 bp, internal positive control band in order to allow kit identification.

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

³The nucleotide position, in 2nd, 3rd or 4th exon or the 3rd intron, 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 B*08:06 allele has been shown to be identical to B*08:20.

⁵The B*08:17 and 08:47 alleles may be distinguished by the different sizes of the specific PCR products generated by primer mix 23.

⁶The B*08:41 and 08:48 alleles may be distinguished by the different sizes of the specific PCR products generated by primer mix 37.

⁷The B*08:45 and 08:59 alleles may be distinguished by the different sizes of the specific PCR products generated by primer mix 34.

⁸The B*08:51 and 08:57 alleles may be distinguished by the different sizes of the specific PCR products generated by primer mix 35.

⁹The B*08:58 and 08:61 alleles may be distinguished by the different sizes of the specific PCR products generated by primer mix 38.

¹⁰The B*08:68 and 08:69 alleles may be distinguished by the different sizes of the specific PCR products generated by primer mix 45.

¹¹Primer mix 7: Specific PCR fragment of 215 bp in the B*08:05 allele. Specific PCR fragment of 250 bp in the B*08:03 and 08:36 and in the B*51:68 alleles.

Primer mix 10: Specific PCR fragment of 85 bp in the B*08:40 allele. Specific PCR fragment of 170 bp in the B*08:08N allele.

Primer mix 13: Specific PCR fragment of 85 bp in the B*08:11 allele. Specific PCR fragment of 290 bp in the B*08:49 and 08:60 and in the B*42:13 and 53:15 alleles.

Primer mix 14: Specific PCR fragment of 115 bp in the B*08:43 allele. Specific PCR fragment of 280 bp in the B*08:12:01-08:12:03, 08:16 and 08:49 and the B*41:03:01-41:03:02, 42:13 and 53:15 alleles.

Primer mix 18: Specific PCR fragment of 425 bp in the B*08:15 and the B*07:13, 07:15, 07:92, 39:27, 40:73, 67:02 and 73:01-73:02 alleles. Specific PCR fragment of 470 bp in the B*08:39 and the B*07:93 and 38:27 alleles.

Primer mix 19: Specific PCR fragment of 245 bp in the B*08:44 allele. Specific PCR fragment of 415 bp in the B*08:16 and in the B*07:13, 07:15, and 67:02 alleles.

Primer mix 20: Specific PCR fragment of 140 bp in the B*08:22 allele. Specific PCR fragment of 205 bp in B*08:17, 08:38 and 08:54 and in the B*15:142 and 44:49 alleles.

Primer mix 23: Specific PCR fragment of 85 bp in the B*08:21 and 08:25 and the B*41:17 and 53:15 alleles. Specific PCR fragment of 235 bp in the B*08:17 and 08:47 and the B*13:39, 15:57, 15:135, 35:27, 35:56, 44:75, 55:12 and 78:06 and the C*05:30 alleles.

Primer mix 27: Specific PCR fragment of 105 bp in the B*08:30N allele. Specific PCR fragment of 140 bp in the B*08:22 allele.

Primer mix 29: Specific PCR fragment of 150 bp in the B*08:32 and in the B* 51:68 alleles. Specific fragment of 250 bp in the B*08:36 allele.

Primer mix 33: Specific PCR fragment of 220 bp in the B*08:55 and the B*38:19, 39:03, 39:14, 39:24:01-39:24:02, 39:29 and 39:37 alleles. Specific fragment of 285 bp in the B*08:42 allele.

Primer mix 34: Specific PCR fragment of 210 bp in the B*08:45 allele. Specific fragment of 305 bp in the B*08:59 allele.

Primer mix 35: Specific PCR fragment of 120 bp in the B*08:51 allele. Specific fragment of 205 bp in the B*08:57 allele.

Primer mix 37: Specific PCR fragment of 155 bp in the B*08:41 allele. Specific fragment of 270 bp in the B*08:48 allele.

Lot No.: **41M**

Lot-specific information

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Primer mix 38: Specific PCR fragment of 175 bp in the B*08:61 allele. Specific fragment of 265 bp in the B*08:58 allele.

Primer mix 43: Specific PCR fragment of 185 bp in the B*08:64 and the B*07:113 alleles. Specific fragment of 215 bp in the B*08:70 and the B*07:55, 07:100, 15:07:01-15:07:02, 15:45, 15:68, 15:126, 15:207, 46:12 and 48:19 alleles.

Primer mix 44: Specific PCR fragment of 170 bp in the B*08:67N allele. Specific fragment of 215 bp in the B*08:65 and the B*39:12 alleles.

Primer mix 45: Specific PCR fragment of 120 bp in the B*08:68 allele. Specific fragment of 225 bp in the B*08:49 and 08:69 and the B*42:06 alleles.

‘w’, might be weakly amplified.

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

CELL LINE VALIDATION SHEET																																
HLA-B*08 SSP subtyping kit																																
					Well																											
						17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32											
				Prod. No.:		201071617	201071618	201071619	201071620	201071621	201071622	201188223	201071624	201071625	201071626	201071627	201071628	201071629	201071630	201071631	201188232											
	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	9007	DEM	*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*08 SSP subtyping kit																			
					Well														
						33	34	35	36	37	38	39	40	41	42	43	44	45	46
				Prod. No.:		201071633	201071634	201071635	201071636	201071637	201071638	201071639	201071640	201188241	201188242	201188243	201188244	201188245	201188246
	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	9007	DEM	*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*08 SSP

Product number: 101.513-24u/04u – without *Taq* pol.
Lot number: 41M
Expiry date: 2013-December-01
Number of tests: 24 tests – Product No. 101.513-24u
 4 tests – Product No. 101.513-04u
Number of wells per test: 46

Well specifications:

Well No.	Production No.	Well No.	Production No.	Well No.	Production No.
1	2010-716-01	17	2010-716-17	33	2010-716-33
2	2010-716-02	18	2010-716-18	34	2010-716-34
3	2010-716-03	19	2010-716-19	35	2010-716-35
4	2010-716-04	20	2010-716-20	36	2010-716-36
5	2010-716-05	21	2010-716-21	37	2010-716-37
6	2011-882-06	22	2010-716-22	38	2010-716-38
7	2010-716-07	23	2011-882-23	39	2010-716-39
8	2010-716-08	24	2010-716-24	40	2010-716-40
9	2010-716-09	25	2010-716-25	41	2011-882-41
10	2010-716-10	26	2010-716-26	42	2011-882-42
11	2010-716-11	27	2010-716-27	43	2011-882-43
12	2010-716-12	28	2010-716-28	44	2011-882-44
13	2010-716-13	29	2010-716-29	45	2011-882-45
14	2010-716-14	30	2010-716-30	46	2011-882-46
15	2010-716-15	31	2010-716-31		
16	2010-716-16	32	2011-882-32		

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

No DNAs carrying the alleles to be amplified by primer solutions 5 to 7, 9, 10, 12 to 14, 16, 17, 19, 20, 25 to 31, 33 to 40, 42 and 44 to 46 were available. The specificities of the primers in primer solutions 5 to 7, 9, 10, 13, 14, 16, 17, 19, 20, 25, 29, 33, 36, 40, 44 and 45 were tested by separately adding one or two additional 5'-primers, respectively one or two additional 3'-primers. The specificity of the 5'-primers in primer solutions 12, 27, 34 and 39 were tested by adding one additional 3'-primer, the 3'-primers were not possible to test. In primer solutions 26, 28, 30, 31, 35, 37, 38, 42 and 46 it was only possible to test the 3'-primers, the 5'-primers were not possible to test. In primer solutions 6, 7, 19, 20, 29, 33, 43 and 44 one or two of the 3'-primers were not possible to test, and in primer solutions 10, 13, 14 and 45 one of the 5'-primers was not possible to test. Additional primers in primer solutions 11, 18 and 23 were tested by separately adding one additional 3'-primer respective one additional 5'-primer.

Lot No.: **41M**

Lot-specific information

www.olerup-ssp.com

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

Date of approval: 2012-June -29

Approved by:

Production Quality Control

Lot No.: **41M**

Lot-specific information

www.olerup-ssp.com

Declaration of Conformity

Product name: *Olerup* SSP® HLA-B*08**Product number:** 101.513-24u/04u**Lot number:** 41M**Intended use:** HLA-B*08 high resolution histocompatibility testing

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

We, *Olerup* SSP AB, hereby declare that this product, to which this Declaration of Conformity relates is in conformity with the following Standard(s) and other normative document(s) ISO 9001:2008 and ISO 13485:2003, following the provisions of the 98/79/EC Directive on *in vitro* diagnostic medical devices, Annex II List B, conformity assessed using Annex IV, as transposed into the national laws of the Member States of the European Union.

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

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

Stockholm, Sweden
2012-June-29

Ann-Cathrin Jareman
Head of QA and Regulatory Affairs

Lot No.: **41M**

Lot-specific information

www.olerup-ssp.com**ADDRESSES:****Manufacturer:****Olerup SSP AB**, Franzengatan 5, SE-112 51 Stockholm, Sweden.**Tel:** +46-8-717 88 27**Fax:** +46-8-717 88 18**E-mail:** info-ssp@olerup.com**Web page:** <http://www.olerup-ssp.com>**Distributed by:****Olerup GmbH**, Löwengasse 47 / 6, AT-1030 Vienna, Austria.**Tel:** +43-1-710 15 00**Fax:** +43-1-710 15 00 10**E-mail:** support-at@olerup.com**Web page:** <http://www.olerup.com>**Olerup Inc.**, 901 S. Bolmar St., Suite R, West Chester, PA 19382**Tel:** 1-877-OLERUP1**Fax:** 610-344-7989**E-mail:** info.us@olerup.com**Web page:** <http://www.olerup.com>For information on *Olerup* SSP distributors worldwide, contact **Olerup GmbH**.