

Olerup SSP[®] HLA-A*68

Product number:	101.418-12/04 – including <i>Taq</i> pol.
Lot number:	60E
Expiry date:	2010-June-01
Number of tests:	12 tests – Product No. 101.418-12 4 tests – Product No. 101.418-04
Number of wells per test:	32
Storage - pre-aliquoted primers:	dark at -20°C
- PCR Master Mix:	-20°C
- Adhesive PCR seals	RT
- Product Insert	RT

This Product Description is only valid for Lot No. 60E.

CHANGES COMPARED TO THE PREVIOUS *OLERUP* SSP[®] HLA-A*68 LOT

The HLA-A*68 specificity and interpretation tables have been updated for the HLA-A alleles described since the previous *Olerup* SSP[®] HLA-A*68 lot was made (Lot No. X65).

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

Well	5'-primer	3'-primer	rationale
13	-	Modified	Increased specificity of specific primer pair.
14	Added	Added	Primer pair added for the A*6841 allele.
16	-	Added	Primer added for the A*6840 allele.
29	Added	Added	Primer pair added for the A*6842 allele.
32	Exchanged	-	Primer exchange to decrease primer dimer formation tendency.

PRODUCT DESCRIPTION

HLA-A*68 SSP subtyping

CONTENT

The primer set contains 5'- and 3'-primers for identifying the A*6801 to A*6842 alleles. The HLA-A*6901 allele is also identified.

PLATE LAYOUT

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

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

The 32 well cut PCR plate is marked with ‘HLA-A*68’.

Well No. 1 is marked with ‘60E’.

The PCR plates are heat-sealed with a PCR-compatible foil.

Please note: When removing each 32 well PCR plate, make sure that the remaining plates stay sealed. Use a scalpel or a similar instrument to carefully cut the foil between the plates.

INTERPRETATION

The interpretation of HLA-A*68 SSP subtypings will be influenced by most A*01 alleles, several A*02 alleles, most A*03 alleles, all A*11 alleles, one A*23, six A*24 alleles, most A*25, the A*26, most A*29 alleles, one A*30 allele, three A*31 alleles, two A*32 allele, all A*34 alleles, all A*36, the A*4301, the A*66 alleles and the A*8001 allele as well as by the A*6901 allele when present on the other haplotype.

UNIQUELY IDENTIFIED ALLELES

All the HLA-A*28 alleles, i.e. **A*6801 to A*6842 as well as the A*6901 allele**, recognized by the HLA Nomenclature Committee in April 2008¹ will give rise to unique amplification patterns by the primers in the HLA-A*68 subtyping kit.

The HLA-A*68 subtyping kit cannot distinguish the A*680101 to A*680107 alleles or the A*68020101 and A*680202 alleles and the A*680301 and A*680302 alleles.

¹HLA-A alleles listed on the IMGT/HLA web page 2008-January-11, release 2.20.0, www.ebi.ac.uk/imgt/hla.

RESOLUTION IN HOMO- AND HETEROZYGOTES

The 42 HLA-A*68 alleles can be combined in 903 homozygous and heterozygous combinations. 480 of these genotypes do not give rise to unique amplification patterns. The different lengths of specific PCR fragments yielded by primer mixes 4, 5, 7, 11, 14, 15, 16, 17, 18, 21, 29 and 30 were not considered in these calculations.

+++++---	+-----	+-----+	-----	6805,6818N = 6818N,6820
+++++---	-----+	+-----+	-----	6805,6840 = 6820,6840
+++++---	-----	+-----+	-----	6805,6828 = 6820,6828
+++++---	-----	+-----+	--+-----	6805,6834 = 6820,6834
+++++---	-----	+-----+	-----	6802,6805 = 6802,6820 = 6820,6839
+++++---	-----	-----+	-----	6803,6839 = 6830,6839
+++++---	+-----	+-----+	-----	6804,6818N = 6818N,6825
+++++---	-----+	+-----+	-----	6804,6840 = 6825,6831 = 6825,6840
+++++---	-----	+-----+	-----	6804,6828 = 6825,6828
+++++---	-----	+-----+	--+-----	6804,6834 = 6825,6834
+++++---	-----	+-----+	-----	6802,6804 = 6802,6825
+++++---	-----	-----+	-----	6804,6839 = 6825,6839
+++++---	-----+	+-----+	-----	6801,6815 = 6815,6816 = 6815,6839
+++-----	-----+	+-----+	-----	6831,6832 = 6832,6840
+++-----	-----	-----+	-----	6806,6839 = 6832,6839
+++-----	+-----+	+-----+	-----	6808,6831 = 6808,6840
+++-----	+-----	+-----+	----+---	6818N,6836 = 6818N,6842
+++-----	+-----	+-----+	-----	6801,6818N = 6818N,6839
+++-----	+-----	+-----+	-----	6802,6808 = 6808,6818N
+++-----	-+-----	++-----	-----	6826,6831 = 6826,6840
+++-----	-+-----	+-----+	-----	6809,6831 = 6809,6840
+++-----	--+-----	+-----+	-----	6817,6831 = 6817,6840
+++-----	--+-----	-----+	-----	6810,6839 = 6817,6839
+++-----	---+-----	+-----+	-----	6811N,6831 = 6811N,6840
+++-----	-----+	+-----+	-----	6812,6831 = 6812,6840
+++-----	-----+	+-----+	-----	6831,6841 = 6840,6841
+++-----	-----+	-----+	-----	6813,6839 = 6839,6841
+++-----	-----++	+-----+	-----	6819,6831 = 6819,6840
+++-----	-----+	++-----	-----+	6821,6831 = 6821,6840
+++-----	-----+	+--+-----	-----	6822,6831 = 6822,6840
+++-----	-----+	+--+-----	-----	6823,6831 = 6823,6840
+++-----	-----+	+-----+	-----	6816,6828 = 6824,6831 = 6824,6840
+++-----	-----+	+-----+	+-----	6829,6831 = 6829,6840
+++-----	-----+	+-----+	-+-----	6831,6833 = 6833,6840
+++-----	-----+	+-----+	----+---	6831,6835 = 6835,6840
+++-----	-----+	+-----+	----+---	6831,6842 = 6836,6840 = 6840,6842
+++-----	-----+	+-----+	-----+	6831,6837 = 6837,6840
+++-----	-----+	+-----+	-----+	6831,6838 = 6838,6840
+++-----	-----+	+-----+	-----	6801,6831 = 6801,6840 = 6802,6816 = 6816,6831 = 6816,6840 = 6831,6839 = 6839,6840

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+++-----	-----	+-----+	-----	6828,6836 = 6828,6842
+++-----	-----	+-----+	-----	6801,6828 = 6802,6824 =
				6824,6828 = 6828,6839
+++-----	-----	+-----+	--+-----	6834,6836 = 6834,6842
+++-----	-----	+-----+	--+-----	6801,6834 = 6834,6839
+++-----	-----	+-----+	-----	6802,6836 = 6802,6842
+++-----	-----	+-----+	-----	6801,6802 = 6802,6839 =
				6827,6839
+++-----	-----	-----+	-----	6836,6839 = 6839,6842
+++-----	-----	-----+	-----	6801,6839 = 6839,6839
++-+-	-----	-----+	-----	6803,6825 = 6804,6830 =
				6825,6830
++-+-	-----	+-----+	-----	6806,6820 = 6820,6832
++-+-	-----	-----+	-----	6805,6806 = 6805,6832
++-+-	--+-----	+-----+	-----	6810,6820 = 6817,6820
++-+-	--+-----	-----+	-----	6805,6810 = 6805,6817
++-+-	-----+	+-----+	-----	6813,6820 = 6820,6841
++-+-	-----+	-----+	-----	6805,6813 = 6805,6841
++-+-	-----	+-----+	-----	6801,6820 = 6805,6827 =
				6820,6827 = 6820,6830
++-+-	-----	-----+	-----	6801,6805 = 6805,6830
++-+-	-----	-----+	-----	6803,6806 = 6803,6832 =
				6830,6832
++-+-	+-----	-----+	-----	6803,6808 = 6808,6830
++-+-	-+-----	-+-----	-----	6803,6826 = 6826,6830
++-+-	-+-----	-----+	-----	6803,6809 = 6809,6830
++-+-	--+-----	-----+	-----	6803,6810 = 6803,6817 =
				6817,6830
++-+-	-----	-----+	-----	6803,6811N = 6811N,6830
++-+-	-----	-----+	-----	6803,6812 = 6812,6830
++-+-	-----	-----+	-----	6803,6813 = 6803,6841 =
				6830,6841
++-+-	-----	-----+	-----	6803,6819 = 6819,6830
++-+-	-----	-----+	-----	6803,6816 = 6816,6830
++-+-	-----	-+-----	-----	6803,6821 = 6821,6830
++-+-	-----	--+-----	-----	6803,6822 = 6822,6830
++-+-	-----	-----+	-----	6803,6823 = 6823,6830
++-+-	-----	-----+	-----	6803,6824 = 6824,6830
++-+-	-----	-----+	+-----	6803,6829 = 6829,6830
++-+-	-----	-----+	-+-----	6803,6833 = 6830,6833
++-+-	-----	-----+	-----	6803,6835 = 6830,6835
++-+-	-----	-----+	-----	6803,6842 = 6830,6836 =
				6830,6842
++-+-	-----	-----+	-----	6803,6837 = 6830,6837
++-+-	-----	-----+	-----	6803,6838 = 6830,6838
++-+-	-----	-----+	-----	6801,6803 = 6801,6830 =
				6803,6830
++-+-	-----	-----+	-----	6804,6806 = 6804,6832 =
				6806,6825 = 6825,6832
++-+-	-----	-----+	-----	6804,6807 = 6807,6825
++-+-	+-----	-----+	-----	6804,6808 = 6808,6825
++-+-	-+-----	-+-----	-----	6804,6826 = 6825,6826
++-+-	-+-----	-----+	-----	6804,6809 = 6809,6825

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++-+--- --+---+-	-----+-	-----	6804,6814 = 6814,6825
++-+--- --+---+-	-----+-	-----	6804,6810 = 6804,6817 =
			6810,6825 = 6817,6825
++-+--- --+---+-	-----+-	-----	6804,6811N = 6811N,6825
++-+--- --+---+-	-----+-	-----	6804,6812 = 6812,6825
++-+--- --+---+-	-----+-	-----	6804,6813 = 6804,6841 =
			6813,6825 = 6825,6841
++-+--- --+---+-	-----+-	-----	6804,6819 = 6819,6825
++-+--- --+---+-	-----+-	-----	6804,6816 = 6816,6825
++-+--- --+---+-	-----+-	-----	6804,6827 = 6825,6827
++-+--- --+---+-	-----+-	-----	6804,6821 = 6821,6825
++-+--- --+---+-	-----+-	-----	6804,6822 = 6822,6825
++-+--- --+---+-	-----+-	-----	6804,6823 = 6823,6825
++-+--- --+---+-	-----+-	-----	6804,6824 = 6824,6825
++-+--- --+---+-	-----+-	-----	6804,6829 = 6825,6829
++-+--- --+---+-	-----+-	-----	6804,6833 = 6825,6833
++-+--- --+---+-	-----+-	-----	6804,6835 = 6825,6835
++-+--- --+---+-	-----+-	-----	6804,6842 = 6825,6836 =
			6825,6842
++-+--- --+---+-	-----+-	-----	6804,6837 = 6825,6837
++-+--- --+---+-	-----+-	-----	6804,6838 = 6825,6838
++-+--- --+---+-	-----+-	-----	6801,6804 = 6801,6825 =
			6804,6825 = 6825,6825
++-+--- --+---+-	-----+-	-----	6806,6817 = 6810,6832 =
			6817,6832
++-+--- --+---+-	-----+-	-----	6806,6811N = 6811N,6832
++-+--- --+---+-	-----+-	-----	6806,6812 = 6812,6832
++-+--- --+---+-	-----+-	-----	6806,6841 = 6813,6832 =
			6832,6841
++-+--- --+---+-	-----+-	-----	6806,6819 = 6819,6832
++-+--- --+---+-	-----+-	-----	6806,6816 = 6816,6832
++-+--- --+---+-	-----+-	-----	6806,6821 = 6821,6832
++-+--- --+---+-	-----+-	-----	6806,6822 = 6822,6832
++-+--- --+---+-	-----+-	-----	6806,6823 = 6823,6832
++-+--- --+---+-	-----+-	-----	6806,6824 = 6824,6832
++-+--- --+---+-	-----+-	-----	6806,6829 = 6829,6832
++-+--- --+---+-	-----+-	-----	6806,6833 = 6832,6833
++-+--- --+---+-	-----+-	-----	6806,6835 = 6832,6835
++-+--- --+---+-	-----+-	-----	6806,6836 = 6806,6842 =
			6832,6836 = 6832,6842
++-+--- --+---+-	-----+-	-----	6806,6837 = 6832,6837
++-+--- --+---+-	-----+-	-----	6806,6838 = 6832,6838
++-+--- --+---+-	-----+-	-----	6801,6806 = 6801,6832 =
			6806,6832 = 6832,6832
++-+--- --+---+-	-----+-	-----	6807,6836 = 6807,6842
++-+--- --+---+-	-----+-	-----	6808,6810 = 6808,6817
++-+--- --+---+-	-----+-	-----	6808,6813 = 6808,6841
++-+--- --+---+-	-----+-	-----	6808,6836 = 6808,6842
++-+--- --+---+-	-----+-	-----	6810,6826 = 6817,6826
++-+--- --+---+-	-----+-	-----	6809,6810 = 6809,6817
++-+--- --+---+-	-----+-	-----	6813,6826 = 6826,6841
++-+--- --+---+-	-----+-	-----	6809,6813 = 6809,6841
++-+--- --+---+-	-----+-	-----	6826,6836 = 6826,6842

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++-----	-+-----	-+----++-	-----+	6809,6821 = 6821,6826
++-----	-+-----	-----++-	----+---	6809,6836 = 6809,6842
++-----	--++-----	-----++-	-----	6810,6811N = 6811N,6817
++-----	--++-----	-----++-	-----	6810,6812 = 6812,6817
++-----	--++-----	-----++-	-----	6810,6841 = 6813,6817 = 6817,6841
++-----	--++-----	-----++-	----+---	6814,6836 = 6814,6842
++-----	--++-----	-----++-	-----	6801,6814 = 6810,6819 = 6814,6817 = 6814,6819 = 6817,6819
++-----	--++-----	-----++-	-----	6810,6816 = 6816,6817
++-----	--++-----	-+----++-	-----+	6810,6821 = 6817,6821
++-----	--++-----	-+----++-	-----	6810,6822 = 6817,6822
++-----	--++-----	-+----++-	-----	6810,6823 = 6817,6823
++-----	--++-----	-+----++-	-----	6810,6824 = 6817,6824
++-----	--++-----	-+----++-	+-----	6810,6829 = 6817,6829
++-----	--++-----	-+----++-	+-----	6810,6833 = 6817,6833
++-----	--++-----	-+----++-	---+---	6810,6835 = 6817,6835
++-----	--++-----	-+----++-	---+---	6810,6836 = 6810,6842 = 6817,6836 = 6817,6842
++-----	--++-----	-+----++-	---+---	6810,6837 = 6817,6837
++-----	--++-----	-+----++-	---+---	6810,6838 = 6817,6838
++-----	--++-----	-+----++-	-----	6801,6810 = 6801,6817 = 6810,6817 = 6817,6817
++-----	----+---+	-----++-	-----	6811N,6813 = 6811N,6841
++-----	----+---+	-----++-	----+---	6811N,6836 = 6811N,6842
++-----	----+---+	-----++-	-----	6801,6811N = 6811N,6811N
++-----	----+---+	-----++-	-----	6812,6813 = 6812,6841
++-----	----+---+	-----++-	----+---	6812,6836 = 6812,6842
++-----	----+---+	-----++-	-----	6801,6812 = 6812,6812
++-----	-----++-	-----++-	-----	6813,6819 = 6819,6841
++-----	-----++-	-----++-	-----	6813,6816 = 6816,6841
++-----	-----++-	-+----++-	-----+	6813,6821 = 6821,6841
++-----	-----++-	-+----++-	-----	6813,6822 = 6822,6841
++-----	-----++-	-+----++-	-----	6813,6823 = 6823,6841
++-----	-----++-	-+----++-	-----	6813,6824 = 6824,6841
++-----	-----++-	-+----++-	+-----	6813,6829 = 6829,6841
++-----	-----++-	-+----++-	+-----	6813,6833 = 6833,6841
++-----	-----++-	-+----++-	---+---	6813,6835 = 6835,6841
++-----	-----++-	-+----++-	---+---	6813,6836 = 6813,6842 = 6836,6841 = 6841,6842
++-----	-----++-	-+----++-	---+---	6813,6837 = 6837,6841
++-----	-----++-	-+----++-	---+---	6813,6838 = 6838,6841
++-----	-----++-	-+----++-	-----	6801,6813 = 6801,6841 = 6813,6841 = 6841,6841
++-----	-----++-	-+----++-	----+---	6819,6836 = 6819,6842
++-----	-----++-	-+----++-	-----	6801,6819 = 6819,6819
++-----	-----++-	-+----++-	---+---	6816,6836 = 6816,6842
++-----	-----++-	-+----++-	-----	6801,6816 = 6816,6816
++-----	-----++-	+-----++-	----+---	6827,6836 = 6827,6842
++-----	-----++-	-+----++-	----+---	6821,6836 = 6821,6842
++-----	-----++-	-+----++-	-----+	6801,6821 = 6821,6821
++-----	-----++-	-+----++-	----+---	6822,6836 = 6822,6842

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++-----	-----	--+---+-	-----	6801,6822 = 6822,6822
++-----	-----	--+---+-	-----	6823,6836 = 6823,6842
++-----	-----	--+---+-	-----	6801,6823 = 6823,6823
++-----	-----	----++-	-----	6824,6836 = 6824,6842
++-----	-----	----++-	-----	6801,6824 = 6824,6824
++-----	-----	----++-	+---+---	6829,6836 = 6829,6842
++-----	-----	----++-	+---+---	6801,6829 = 6829,6829
++-----	-----	----++-	+---+---	6833,6836 = 6833,6842
++-----	-----	----++-	+---+---	6801,6833 = 6833,6833
++-----	-----	----++-	---+---	6835,6836 = 6835,6842
++-----	-----	----++-	---+---	6801,6835 = 6835,6835
++-----	-----	----++-	---+---	6836,6837 = 6837,6842
++-----	-----	----++-	---+---	6836,6838 = 6838,6842
++-----	-----	----++-	---+---	6801,6836 = 6801,6842 =
				6836,6842 = 6842,6842
++-----	-----	----++-	---+---	6801,6837 = 6837,6837
++-----	-----	----++-	---+---	6801,6838 = 6838,6838
+--+-----	-----+	+-----+	-----	6830,6831 = 6830,6840
+--+-----	-----+	+-----	-----	6802,6815 = 6815,6827 =
				6815,6840
+--+-----	-----+	+-----	-----	6806,6831 = 6806,6840
+--+-----	-----+	+-----+	-----	6807,6831 = 6807,6840
+--+-----	+-----+	+-----	-----	6818N,6831 = 6818N,6840
+--+-----	+-----	+-----	-----	6802,6818N = 6818N,6818N =
				6818N,6827
+--+-----	--+-----+	+-----+	-----	6814,6831 = 6814,6840
+--+-----	--+-----+	+-----+	-----	6810,6831 = 6810,6840
+--+-----	-----+	+-----+	-----	6813,6831 = 6813,6840
+--+-----	-----+	+---+---	-----	6828,6831 = 6828,6840
+--+-----	-----+	+-----	--+-----	6831,6834 = 6834,6840
+--+-----	-----+	+-----	-----	6802,6831 = 6802,6840 =
				6827,6831 = 6827,6840 =
				6831,6840 = 6840,6840
+--+-----	-----	+---+---	-----	6802,6828 = 6827,6828 =
				6828,6828
+--+-----	-----	+-----	--+-----	6802,6834 = 6827,6834 =
				6834,6834
+--+-----	-----	+-----	-----	6802,6802 = 6802,6827
+-----	--+---+-	-----++-	-----	6810,6814 = 6814,6814
-+++-----	-----+	+-----+	-----	6803,6815 = 6805,6815 =
				6805,6831 = 6815,6820 =
				6820,6831
-+-+-----	-----	+-----+	-----	6803,6820 = 6805,6820 =
				6820,6820
-+-+-----	-----	-----++-	-----	6803,6805 = 6805,6805
-+-+-----	-----+	+-----	-----	6815,6815 = 6815,6831

SPECIFICITY TABLE

HLA-A*68 SSP subtyping

Specificities and sizes of the PCR products of the 32 primer mixes used for HLA-A*68 SSP subtyping

Primer Mix	Size of spec. PCR product ¹	Size of control band ²	Amplified HLA-A*68 alleles	Other amplified HLA-A alleles ³
1⁴	195 bp	800 bp	680101-680202, 6806-6814, 6816-6819, 6821-6830, 6832-6835, 6837-6842	0113, 0234-023503, 0256, 0262, 0278, 9203, 03010101-0307, 0309-0331, 0333-0335, 0337-0339, 110101-110109, 1103-1113, 111501-111502, 1120-1127, 1129-1132, 2419, 3018, 340101-3408, 6601, 6602, 6604, 6606, 6607, 6901
2	435 bp	1070 bp	680101-680107, 680301-6805, 6808, 6809, 6811N, 6812, 6816, 6817, 6819-6826, 6829, 6832, 6833, 6835-6839, 6841, 6842	0324, 1110, 3402-3404, 3407, 3408
3	195 bp	1070 bp	68020101-680202, 6815, 6818N, 6828, 6831, 6834, 6839, 6840	
4⁵	180, 220 bp	1070 bp	680301-680302, 6805, 6820, 6830	020605
5⁶	140, 235 bp	800 bp	6804, 6825	
6	225 bp	1070 bp	6805, 6815, 6820	020605, 9222
7⁷	135, 155 bp	1070 bp	6806, 6832	0252
8	160 bp	1070 bp	6807	
9	160 bp	1070 bp	6808, 6818N	030102, 1124, 8001
10	165 bp	800 bp	6809, 6826	0112, 0119, 0310, 110101-1107, 1109 ^{weakly} , 1110-1121N, 1126, 1127, 1128-1130, 1132, 2417, 2441, 2905
11⁸	160, 200	800 bp	6810, 6814, 6817	9229

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	bp			
12	405 bp	1070 bp	6811N	
13	215 bp	1070 bp	6812	
14⁹	150, 195	1070 bp	6813, 6841	
	bp			
15^{10,11}	145, 205	1070 bp	6812 ² , 6814, 6819	9221, 0317, 2418
	bp			
16¹²	150, 215	1070 bp	6815, 6816, 6831, 6840	9222
	bp			
17¹³	165, 185	1070 bp	68020101-680202, 6815, 6818N, 6820, 6827, 6828, 6831, 6834, 6840	0130, 0202 ^{weakly} , 020301-020302, 0205 ^{weakly} , 0208 ^{weakly} , 0222, 0247 ^{weakly} , 0249, 0250, 0263 ^{weakly} , 9202 ^{weakly} , 9204, 9215 ^{weakly} , 9217, 9222, 9235, 9236, 2302, 2406, 250101-2503, 2505, 2506, 260101-260104, 2602-260702, 2609-2626, 2628-2635, 3210, 340101-340102, 3405, 4301, 6601-6605, 6607
18¹⁴	195, 225	1070 bp	6821, 6826	01010101-0104N, 0106-0129, 0304, 0318, 1127, 2417, 2441, 2903, 8001
	bp			
19¹⁰	325 bp	1070 bp	6822	
20^{10,15}	90 bp	1070 bp	6823	0120, 9214
21¹⁶	165, 215	1070 bp	6824, 6828	0249
	bp			
22⁴	165 bp	800 bp	680101-680107, 680301-6805, 6807, 6810-6814, 6816, 6817, 6819-6825, 6829, 6830, 6832, 6833, 6835-6839, 6841, 6842	01010101-0104N ^{weakly} , 0107-0111N ^{weakly} , 0113-0118N ^{weakly} , 0120-0124 ^{weakly} , 0126-0129 ^{weakly} , 0318 ^{weakly} , 1108, 3601 ^{weakly} , 3602, 3603 ^{weakly} , 3604 ^{weakly}
23	185 bp	1070 bp	680101-680107, 680301-6805, 6807-6814, 6816, 6817, 6819-6825, 6829, 6830, 6832, 6833, 6835-6839, 6841, 6842	9214, 03010101-0317, 0320-0339, 0339, 1104, 29010101-290201, 290203, 2904-2917, 3103, 3104, 3106, 3204, 3402-3404, 3407, 3408, 3601-3603
24¹⁷	375 bp	1070 bp		0255, 2622, 6901
25	240 bp	1070 bp	6829	2482
26	185 bp	1070 bp	6833	
27	190 bp	1070 bp	6834	2604

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28	200 bp	1070 bp	6835	
29^{15,18}	80, 255 bp	800 bp	6836, 6842	020301-020302, 0213, 0226, 0238, 0299, 9217, 1103, 1108, 1120, 1125
30¹⁹	145, 245 bp	1070 bp	6837	9217, 9235, 250101-2506, 260101-2610, 2612, 2613, 2615-2617, 2619-2627, 2629-2635, 340101-340102, 3405, 4301, 6601-6607
31	205 bp	1070 bp	6838	
32	185 bp	1070 bp	6821	027402

¹Alleles are assigned by the presence of specific PCR product(s). However, the sizes of the specific PCR products may be helpful in the interpretation of HLA-A*68 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 length of the specific PCR product(s) of the alleles amplified by these primer mixes are given.

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

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

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

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

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

Well number 1 contains the primer pair giving rise to the shorter, 800 bp, internal positive control band in order to help in the correct orientation of the HLA-A*68 subtyping.

In addition, wells number 5, 10, 11, 22 and 29 contain the primer pair giving rise to the shorter, 800 bp, internal positive control band in order to allow kit identification.

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

³Due to the sharing of sequence motifs between HLA-A alleles non-HLA-A*68 alleles will be amplified by primer mixes 1, 2, 7, 9, 10, 13, 15, 17, 18, 21, 20, 22, 23, 24, 27 and 30.

⁴Primer mixes 1 and 22 may yield less specific PCR product than the other A*68 primer mixes.

⁵Primer mix 4: Specific PCR fragment of 180 bp in the A*6830 and the A*020605 alleles. Specific PCR fragment of 220 bp in the A*680301-680302, A*6805 and A*6820 alleles.

⁶Primer mix 5: Specific PCR fragment of 140 bp in the A*6825 allele. Specific PCR fragment of 235 bp in the A*6804 allele.

⁷Primer mix 7: Specific PCR fragment of 135 bp in the A*6806 and A*0252 alleles. Specific PCR fragment of 155 bp in the A*6832 allele.

⁸Primer mix 11: Specific PCR fragment of 160 bp in the A*6817 allele. Specific PCR fragment of 200 bp in the A*6810 and A*6814 and the A*9229 alleles.

⁹Primer mix 14: Specific PCR fragment of 150 bp in the A*6841 allele. Specific PCR fragment of 195 bp in the A*6813 allele.

¹⁰Primer mixes 15, 19 and 20 have a tendency of giving rise to a primer oligomer artifact.

¹¹Primer mix 15: Specific PCR fragment of 145 bp in the A*6819 and A*0317, A*2418 alleles. Specific PCR fragment of 205 bp in the A*6812?, A*6814 and the A*9221 alleles.

¹²Primer mix 16: Specific PCR fragment of 150 bp in the A*6816 allele. Specific PCR fragment of 215 bp in the A*6815, A*6831 and A*6840 and the A*9222 alleles.

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¹³Primer mix 17: Specific PCR fragment of 165 bp in the A*68020101-680202, A*6815, A*6818N, A*6827, A*6828, A*6831, A*6834, A*6840 and the A*0130, A*0202^w, A*020301-020302, A*0205^w, A*0208^w, A*0222, A*0247^w, A*0249, A*0250, A*0263^w, A*9202^w, A*9204, A*9215^w, A*9217, A*9222, A*9235, A*9236, A*2302, A*2406, A*250101-2503, A*2505, A*2506, A*260101-260104, A*2602-260702, A*2609-2626, A*2628-2635, A*3210, A*340101-340102, A*3405, A*4301, A*6601 to A*6605 and A*6607 alleles. Specific PCR fragment of 185 bp in the A*6820 allele.

¹⁴Primer mix 18: Specific PCR fragment of 195 bp in the A*6826 and A*01010101-0104N, A*0106-0129, A*0318, A*1127, A*2417, A*2441, A*2903 and A*8001 alleles. Specific PCR fragment of 225 bp in the A*6821 and A*0304 alleles.

¹⁵Short specific PCR fragments are less intense and not as sharp as longer specific bands.

¹⁶Primer mix 21: Specific PCR fragment of 165 bp in the A*6828 and A*0249 alleles. Specific PCR fragment of 215 bp in the A*6824 allele.

¹⁷Primer mix 24 may give to non-specific amplifications.

¹⁸Primer mix 29: Specific PCR fragment of 80 bp in the A*6842 and the A*020301-020302, A*0213, A*0226, A*0238, A*0299, A*9217, A*1103, A*1108, A*1120 and A*1125 alleles. Specific PCR fragment of 255 bp in the A*6836 allele.

¹⁹Primer mix 30: Specific PCR fragment of 145 bp in the SA*9217, A*9235, A*250101-2506, A*260101-2610, A*2612, A*2613, A*2615-2617, A*2619-2627, A*2629-2635, A*340101-340102, A*3405, A*4301, A*6601-6607 alleles. Specific PCR fragment of 245 bp in the A*6837 allele.

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

INTERPRETATION TABLE																
HLA-A*68 SSP subtyping																
Amplification patterns of the A*6801 to A*6842 alleles																
	Well⁵															
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Length of spec.	195	435	195	180	140	225	135	160	160	165	160	405	215	150	145	150
PCR product				220	235		155				200			195	205	215
Length of int.	800	1070	1070	1070	800	1070	1070	1070	1070	800	800	1070	1070	1070	1070	1070
pos. control ¹																
5'-primer(s) ²	127	261	106	102	98	102	145	418	106	413	98	47	2 nd I	103	453	106
	5'-ggg ^{3'}	5'-AAC ^{3'}	5'-CCA ^{3'}	5'-ACT ^{3'}	5'-CTA ^{3'}	5'-ACT ^{3'}	5'-CCA ^{3'}	5'-AgC ^{3'}	5'-CCA ^{3'}	5'-CCg ^{3'}	5'-CTA ^{3'}	5'-g.T ^{3'}	5'-CCT ^{3'}	5'-CCT ^{3'}	5'-AAA ^{3'}	5'-CCA ^{3'}
					397	106	414		413		419			413		413
					5'-gCC ^{3'}	5'-CCA ^{3'}	5'-gAA ^{3'}		5'-CCg ^{3'}		5'-ggT ^{3'}			5'-CCg ^{3'}		5'-CCg ^{3'}
3'-primer(s) ³	282	413	259	240	290	292	259	539	216	538	256	282	497	256	555	278
	5'-gAC ^{3'}	5'-gCC ^{3'}	5'-gTT ^{3'}	5'-ggA ^{3'}	5'-CAA ^{3'}	5'-gTg ^{3'}	5'-gTT ^{3'}	5'-TCC ^{3'}	5'-gCT ^{3'}	5'-CTg ^{3'}	5'-CTC ^{3'}	5'-gAC ^{3'}	5'-TgA ^{3'}	5'-Cgg ^{3'}	5'-CCA ^{3'}	5'-ggC ^{3'}
		413		282	497		506		538		538			521	616	282
		5'-gCT ^{3'}		5'-gAg ^{3'}	5'-Tgg ^{3'}		5'-TgT ^{3'}		5'-CAg ^{3'}		5'-CCA ^{3'}			5'-ggA ^{3'}	5'-CgC ^{3'}	5'-gAg ^{3'}
																524
																5'-CAA ^{3'}
Well No.	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
HLA-A allele																
*680101-680107	1	2														
*68020101-68020103, 680202	1		3													
*680301- 680302		2		4												
*6804		2			5											
*6805		2		4		6										
*6806	1						7									
*6807	1							8								
*6808	1	2							9							
*6809	1	2								10						
*6810	1										11					
*6811N	1	2										12				
*6812	1	2											13		?	
*6813	1													14		
*6814	1										11				15	
*6815			3			6										16
*6816	1	2														16
*6817	1	2									11					
*6818N	1		3						9							
*6819	1	2													15	
Well No.	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16

INTERPRETATION TABLE																
HLA-A*68 SSP subtyping																
Amplification patterns of the A*6801 to A*6842 alleles																
Well⁵																
17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	
165	195	325	90	165	165	185	375	240	185	190	200	80	145	205	185	Length of spec.
185	225			215								255	245			PCR product
1070	1070	1070	1070	1070	800	1070	1070	1070	1070	1070	1070	800	1070	1070	1070	Length of int. pos. control¹
395	413	317	362	102	413	413	261	28	666	413	121	102	102	376	453	5'-primer(s)²
5'-gCA ^{3'}	5'-CCg ^{3'}	5'-gCA ^{3'}	5'-gAg ^{3'}	5'-ACT ^{3'}	5'-CCg ^{3'}	5'-CCg ^{3'}	5'-AAC ^{3'}	5'-TCg ^{3'}	5'-ggA ^{3'}	5'-CCA ^{3'}	5'-gCT ^{3'}	5'-ACT ^{3'}	5'-ACT ^{3'}	5'-gCA ^{3'}	5'-AAA ^{3'}	
413				413								489	414			
5'-CCA ^{3'}				5'-CCA ^{3'}								5'-gCA ^{3'}	5'-CAG ^{3'}			
538	570	362	413	275	539	559	355	97	808	560	282	317	308	538	595	3'-primer(s)³
5'-CCA ^{3'}	5'-CCg ^{3'}	5'-TCA ^{3'}	5'-gCC ^{3'}	5'-CCC ^{3'}	5'-TCC ^{3'}	5'-CgT ^{3'}	5'-gAC ^{3'}	5'-ggT ^{3'}	5'-AgA ^{3'}	5'-ACA ^{3'}	5'-gAC ^{3'}	5'-ggA ^{3'}	5'-TCT ^{3'}	5'-CCA ^{3'}	5'-CCg ^{3'}	
	595			538								527	517			
	5'-CCg ^{3'}			5'-CCg ^{3'}								5'-CCT ^{3'}	5'-CgT ^{3'}			
17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	Well No.
																HLA-A allele
					22	23										*680101-680107
17																*68020101-68020103, 680202
					22	23										*680301- 680302
					22	23										*6804
					22	23										*6805
					22	23										*6806
					22	23										*6807
						23										*6808
						22	23									*6809
					22	23										*6810
					22	23										*6811N
					22	23										*6812
					22	23										*6813
					22	23										*6814
17																*6815
					22	23										*6816
					22	23										*6817
17																*6818N
					22	23										*6819
17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	Well No.

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Length of spec.	195	435	195	180	140	225	135	160	160	165	160	405	215	150	145	150
PCR product				220	235		155				200			195	205	215
Well No.	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
*6820		2		4		6										
*6821	1	2														
*6822	1	2														
*6823	1	2														
*6824	1	2														
*6825	1	2			5											
*6826	1	2								10						
*6827	1															
*6828	1		3													
*6829	1	2														
*6830	1			4												
*6831			3													16
*6832	1	2				7										
*6833	1	2														
*6834	1		3													
*6835	1	2														
*6836		2														
*6837	1	2														
*6838	1	2														
*6839	1	2	3													
*6840	1		3													16
*6841	1	2												14		
*6842	1	2														
*01010101-0104N, 0107-0111N, 0114- 0118N, 0121-0124, 0126-0129																
*0106, 0125, 2903																
*0112, 0119										10						
*0113, 0318	1															
*0120																
*0130, 0222, 0250, 9204, 92362302, 2406, 2611N, 2614, 2618, 2628, 3210																
*0202, 0205, 0208, 0247, 0263, 9202, 9215																
020301-020302																
Well No.	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16

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165	195	325	90	165	165	185	375	240	185	190	200	80	145	205	185	Length of spec. PCR product
17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	Well No.
17					22	23										*6820
	18				22	23									32	*6821
		19			22	23										*6822
			20		22	23										*6823
				21	22	23										*6824
					22	23										*6825
	18															*6826
17																*6827
17				21												*6828
					22	23		25								*6829
					22	23										*6830
17																*6831
					22	23										*6832
					22	23			26							*6833
17										27						*6834
					22	23					28					*6835
					22	23						29				*6836
					22	23							30			*6837
					22	23								31		*6838
					22	23										*6839
17																*6840
					22	23										*6841
					22	23						29				*6842
	18				w											*01010101-0104N, 0107-0111N, 0114- 0118N, 0121-0124, 0126-0129
	18															*0106, 0125, 2903
	18															*0112, 0119
	18				w											*0113, 0318
	18		20		w											*0120
17																*0130, 0222, 0250, 9204, 92362302, 2406, 2611N, 2614, 2618, 2628, 3210
w																*0202, 0205, 0208, 0247, 0263, 9202, 9215
17												29				020301-020302
17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	Well No.

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Length of spec.	195	435	195	180	140	225	135	160	160	165	160	405	215	150	145	150
PCR product				220	235		155				200			195	205	215
Well No.	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
*020605				4		6										
*0213, 0226, 0238, 0299																
*0234-023503, 0256, 0262, 0278, 9203, 0319, 1122, 1123, 1131, 2419, 3018, 3406	1															
*0249																
*0252							7									
*0255																
*027402																
*9214																
*9217																
*9221, 2418															15	
*9222						6										16
*9229											11					
*9235, 250101-2503, 2505, 2506, 260101-260104, 2602, 2603, 2605-260702, 2609, 2610, 2612, 2613, 2615-2617, 2619-2621, 2623-2626, 2629-2635, 4301, 6603, 6605																
*03010101-03010103, 030103-0303N, 0305-0307, 0309, 0311N-0316, 0320-0323, 0325-0331, 0333-0335, 0337-0339	1															
*030102	1								9							
*0304	1															
*0308, 0332, 0336N, 29010101-290201, 290203, 2904, 2906-2917, 3103, 3104, 3106, 3204																
Well No.	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16

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165	195	325	90	165	165	185	375	240	185	190	200	80	145	205	185	Length of spec.
185	225			215								255	245			PCR product
17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	Well No.
																*020605
												29				*0213, 0226, 0238, 0299
																*0234-023503, 0256, 0262, 0278, 9203, 0319, 1122, 1123, 1131, 2419, 3018, 3406
17				21												*0249
							24									*0252
															32	*0255
			20			23										*027402
												29	30			*9214
17																*9217
																*9221, 2418
17																*9222
																*9229
17													30			*9235, 250101-2503, 2505, 2506, 260101-260104, 2602, 2603, 2605-260702, 2609, 2610, 2612, 2613, 2615-2617, 2619-2621, 2623-2626, 2629-2635, 4301, 6603, 6605
						23										*03010101-03010103, 030103-0303N, 0305-0307, 0309, 0311N-0316, 0320-0323, 0325-0331, 0333-0335, 0337-0339
						23										*030102
	18					23										*0304
						23										*0308, 0332, 0336N, 29010101-290201, 290203, 2904, 2906-2917, 3103, 3104, 3106, 3204
17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	Well No.

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Length of spec.	195	435	195	180	140	225	135	160	160	165	160	405	215	150	145	150
PCR product				220	235		155				200			195	205	215
Well No.	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
*0310, 1104	1									10						
*0317	1														15	
*0324	1	2														
*110101-110109, 1105-1107, 1111- 1113, 111501- 111502, 1121N, 1126, 1129, 1130, 1132	1									10						
*110201-110203, 1114, 1116-1119										10						
*1103, 1120	1									10						
*1108	1															
*1109	1									w						
*1110	1	2								10						
*1124	1								9							
*1125	1															
*1127	1									10						
*2417, 2441										10						
*2482																
2504, 260105- 260106, 2608, 2627																
*2604																
*2622																
*2905										10						
*340101-340102, 3405, 6601, 6602, 6604, 6607	1															
*3402-3404, 3407, 3408	1	2														
*3601, 3603																
*3602																
*3604																
*6606	1															
*6901	1															
*8001									9							
HLA-A allele																
Well No.	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16

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165	195	325	90	165	165	185	375	240	185	190	200	80	145	205	185	Length of spec.
185	225			215								255	245			PCR product
17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	Well No.
						23										*0310, 1104
						23										*0317
						23										*0324
																*110101-110109, 1105-1107, 1111- 1113, 111501- 111502, 1121N, 1126, 1129, 1130, 1132
																*110201-110203, 1114, 1116-1119
												29				*1103, 1120
					22							29				*1108
																*1109
																*1110
																*1124
												29				*1125
	18															*1127
	18															*2417, 2441
								25								*2482
													30			2504, 260105- 260106, 2608, 2627
17										27			30			*2604
17							24						30			*2622
						23										*2905
17													30			*340101-340102, 3405, 6601, 6602, 6604, 6607
						23										*3402-3404, 3407, 3408
					w	23										*3601, 3603
					22	23										*3602
					w											*3604
													30			*6606
							24									*6901
	18															*8001
																HLA-A allele
17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	Well No.

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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-A*68 subtyping. .

In addition, wells number 5, 10, 11, 22 and 29 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 the 2nd 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, 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.

⁵Primer mix 4: Specific PCR fragment of 180 bp in the A*6830 and the A*020605 alleles. Specific PCR fragment of 220 bp in the A*680301-680302, A*6805 and A*6820 alleles.

Primer mix 5: Specific PCR fragment of 140 bp in the A*6825 allele. Specific PCR fragment of 235 bp in the A*6804 allele.

Primer mix 7: Specific PCR fragment of 135 bp in the A*6806 and A*0252 alleles. Specific PCR fragment of 155 bp in the A*6832 allele.

Primer mix 11: Specific PCR fragment of 160 bp in the A*6817 allele. Specific PCR fragment of 200 bp in the A*6810 and A*6814 and the A*9229 alleles.

Primer mix 14: Specific PCR fragment of 150 bp in the A*6841 allele. Specific PCR fragment of 195 bp in the A*6813 allele.

Primer mix 15: Specific PCR fragment of 145 bp in the A*6819 and A*0317, A*2418 alleles. Specific PCR fragment of 205 bp in the A*6812?, A*6814 and the A*9221 alleles.

Primer mix 16: Specific PCR fragment of 150 bp in the A*6816 allele. Specific PCR fragment of 215 bp in the A*6815, A*6831 and A*6840 and the A*9222 alleles.

Primer mix 17: Specific PCR fragment of 165 bp in the A*68020101-680202, A*6815, A*6818N, A*6827, A*6828, A*6831, A*6834, A*6840 and the A*0130, A*0202^w, A*020301-020302, A*0205^w, A*0208^w, A*0222, A*0247^w, A*0249, A*0250, A*0263^w, A*9202^w, A*9204, A*9215^w, A*9217, A*9222, A*9235, A*9236, A*2302, A*2406, A*250101-2503, A*2505, A*2506, A*260101-260104, A*2602-260702, A*2609-2626, A*2628-2635, A*3210, A*340101-340102, A*3405, A*4301, A*6601 to A*6605 and A*6607 alleles. Specific PCR fragment of 185 bp in the A*6820 allele.

Primer mix 18: Specific PCR fragment of 195 bp in the A*6826 and A*01010101-0104N, A*0106-0129, A*0318, A*1127, A*2417, A*2441, A*2903 and A*8001 alleles. Specific PCR fragment of 225 bp in the A*6821 and A*0304 alleles.

Primer mix 21: Specific PCR fragment of 165 bp in the A*6828 and A*0249 alleles. Specific PCR fragment of 215 bp in the A*6824 allele.

Primer mix 29: Specific PCR fragment of 80 bp in the A*6842 and the A*020301-020302, A*0213, A*0226, A*0238, A*0299, A*9217, A*1103, A*1108, A*1120 and A*1125 alleles. Specific PCR fragment of 255 bp in the A*6836 allele.

Primer mix 30: Specific PCR fragment of 145 bp in the SA*9217, A*9235, A*250101-2506, A*260101-2610, A*2612, A*2613, A*2615-2617, A*2619-2627, A*2629-2635, A*340101-340102, A*3405, A*4301, A*6601-6607 alleles. Specific PCR fragment of 245 bp in the A*6837 allele.

'w', may be weakly amplified.

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

CELL LINE VALIDATION SHEET																			
HLA-A*68 SSP subtyping kit																			
			Prod. No.:	Well															
				1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
				200732601	200732602	200732603	200732604	200732605	200732606	200732607	200732608	200732609	200732610	200732611	200732612	200846213	200846214	200732615	200846216
	IHWC cell line	A*																	
1	9001 SA	*2402		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
2	9280 LK707	*0201		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
3	9011 E4181324	*0101		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
4	9275 GU373	*3001		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
5	9009 KAS011	*0101		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
6	9353 SM	*0201	*2603	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
7	9020 QBL	*2601		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
8	9007 DEM	*0201		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
9	9026 YAR	*2601		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
10	9107 LKT3	*2402		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
11	9051 PITOUT	*2902		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
12	9052 DBB	*0201		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
13	9067 BTB	*0201		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
14	9071 OLGA	*3101		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
15	9075 DKB	*2402		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
16	9037 SWEIG007	*2902		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
17	9008 WILJON	*2501		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
18	9257 32367	*3303	*7401	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
19	9038 BM16	*0201		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
20	9059 SLE005	*0201		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
21	9064 AMALA	*0217		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
22	9056 KOSE	*0201		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
23	9124 IHL	*0201	*3401	+	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
24	9035 JBUSH	*3201		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
25	9049 IBW9	*3301		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
26	9285 WT49	*0205		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
27	9191 CH1007	*2410	*2901	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
28	9320 BEL5GB	*0201	*2902	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
29	9050 MOU	*2902		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
30	9021 RSH	*3001	*6802	+	-	+	-	-	-	-	-	-	-	-	-	-	-	-	-
31	9019 DUCAF	*3002		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
32	9297 HAG	*0201		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
33	9098 MT14B	*3101		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
34	9104 DHIF	*3101		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
35	9302 SSTO	*3201		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
36	9024 KT17	*0206	*1101	+	-	-	-	-	-	-	-	-	+	-	-	-	-	-	-
37	9065 HHKB	*0301		+	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
38	9099 LZL	*0217		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
39	9315 CML	*0101	*0301	+	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
40	9134 WHONP199	*0207	*3001	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
41	9055 H0301	*0301		+	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
42	9066 TAB089	*0207		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
43	9076 T7526	*0207		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
44	9057 TEM	*6601		+	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
45	9239 SHJO	*2301	*2402	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
46	9013 SCHU	*0301		+	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
47	9045 TUBO	*0216	*0301	+	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
48	9303 TER-ND	*0201	*1101	+	-	-	-	-	-	-	-	-	+	-	-	-	-	-	-

CELL LINE VALIDATION SHEET					Well															
HLA-A*68 SSP subtyping kit					17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32
				Prod. No.:	200732617	200732618	200732619	200732620	200732621	200732622	200732623	200732624	200732625	200732626	200732627	200732628	200846229	200846230	200732631	200846232
	IHWC cell line		A*																	
1	9001 SA		*2402		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
2	9280 LK707		*0201		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
3	9011 E4181324		*0101		-	+	-	-	-	W	-	-	-	-	-	-	-	-	-	-
4	9275 GU373		*3001		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
5	9009 KAS011		*0101		-	+	-	-	-	W	-	-	-	-	-	-	-	-	-	-
6	9353 SM		*0201	*2603	+	-	-	-	-	-	-	-	-	-	-	-	-	+	-	-
7	9020 QBL		*2601		+	-	-	-	-	-	-	-	-	-	-	-	-	+	-	-
8	9007 DEM		*0201		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
9	9026 YAR		*2601		+	-	-	-	-	-	-	-	-	-	-	-	-	+	-	-
10	9107 LKT3		*2402		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
11	9051 PITOUT		*2902		-	-	-	-	-	-	+	-	-	-	-	-	-	-	-	-
12	9052 DBB		*0201		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
13	9067 BTB		*0201		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
14	9071 OLGA		*3101		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
15	9075 DKB		*2402		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
16	9037 SWEIG007		*2902		-	-	-	-	-	-	+	-	-	-	-	-	-	-	-	-
17	9008 WILJON		*2501		+	-	-	-	-	-	-	-	-	-	-	-	-	+	-	-
18	9257 32367		*3303	*7401	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
19	9038 BM16		*0201		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
20	9059 SLE005		*0201		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
21	9064 AMALA		*0217		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
22	9056 KOSE		*0201		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
23	9124 IHL		*0201	*3401	+	-	-	-	-	-	-	-	-	-	-	-	-	+	-	-
24	9035 JBUSH		*3201		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
25	9049 IBW9		*3301		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
26	9285 WT49		*0205		W	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
27	9191 CH1007		*2410	*2901	-	-	-	-	-	-	+	-	-	-	-	-	-	-	-	-
28	9320 BEL5GB		*0201	*2902	-	-	-	-	-	-	+	-	-	-	-	-	-	-	-	-
29	9050 MOU		*2902		-	-	-	-	-	-	+	-	-	-	-	-	-	-	-	-
30	9021 RSH		*3001	*6802	+	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
31	9019 DUCAF		*3002		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
32	9297 HAG		*0201		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
33	9098 MT14B		*3101		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
34	9104 DHIF		*3101		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
35	9302 SSTO		*3201		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
36	9024 KT17		*0206	*1101	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
37	9065 HHKB		*0301		-	-	-	-	-	-	+	-	-	-	-	-	-	-	-	-
38	9099 LZL		*0217		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
39	9315 CML		*0101	*0301	-	+	-	-	-	W	+	-	-	-	-	-	-	-	-	-
40	9134 WHONP199		*0207	*3001	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
41	9055 H0301		*0301		-	-	-	-	-	-	+	-	-	-	-	-	-	-	-	-
42	9066 TAB089		*0207		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
43	9076 T7526		*0207		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
44	9057 TEM		*6601		+	-	-	-	-	-	-	-	-	-	-	-	-	+	-	-
45	9239 SHJO		*2301	*2402	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
46	9013 SCHU		*0301		-	-	-	-	-	-	+	-	-	-	-	-	-	-	-	-
47	9045 TUBO		*0216	*0301	-	-	-	-	-	-	+	-	-	-	-	-	-	-	-	-
48	9303 TER-ND		*0201	*1101	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

CERTIFICATE OF ANALYSIS

Olerup SSP® HLA-A*68 SSP

Product number: 101.418-12/04 – including *Taq* pol.
Lot number: 60E
Expiry date: 2010-June-01
Number of tests: 12 tests – Product No. 101.418-12
4 tests – Product No. 101.418-04
Number of wells per test: 32

Well specifications:

Well No.	Production No.	Well No.	Production No.	Well No.	Production No.
1	2007-326-01	13	2008-462-13	25	2007-326-25
2	2007-326-02	14	2008-462-14	26	2007-326-26
3	2007-326-03	15	2007-326-15	27	2007-326-27
4	2007-326-04	16	2008-462-16	28	2007-326-28
5	2007-326-05	17	2007-326-17	29	2008-462-29
6	2007-326-06	18	2007-326-18	30	2008-462-30
7	2007-326-07	19	2007-326-19	31	2007-326-31
8	2007-326-08	20	2007-326-20	32	2008-462-32
9	2007-326-09	21	2007-326-21		
10	2007-326-10	22	2007-326-22		
11	2007-326-11	23	2007-326-23		
12	2007-326-12	24	2007-326-24		

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

No DNAs carrying the alleles to be amplified by primer solutions 4, 5, 6, 7, 8, 11 to 16, 19 to 21, 25 to 29 and 31 and 32 were available. The specificities of the primers in primer solutions 5, 7, 13, 20, 25, 26 and 29 were tested by separately adding one additional 5'-primer, respectively one additional 3'-primer. The specificities of the 3'-primers in primer solutions 4, 6, 8, 12, 19, 28 and 31 were tested by separately adding one additional 5'-primer, it was not possible to test the 5'-primers. The specificity of the 5'-primer in primer solutions 14, 27 and 32 were tested by separately adding one additional 3'-primer, it was not possible to test the 3'-primers. In primer solution 11 one of the 5'-primers was not possible to test. In primer solutions 15 and 16 one of the 3'-primers was not possible to test. In primer solution 21 it was not possible to test either the 5'-primer or the 3'-primer.

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

Date of approval: 2009-May-27

Approved by:

Quality Control, Supervisor

Lot No.: **60E**

Lot-specific Information

www.olerup.com

Declaration of Conformity

Product name: *Olerup* SSP® HLA-A*68
Product number: 101.418-12/04
Lot number: 60E

Intended use: HLA-A*68 high resolution histocompatibility testing

Manufacturer: *Olerup* SSP AB
Hasselstigen 1
SE-133 33 Saltsjöbaden, 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 9001:2000 and ISO 13485:2003, following the provisions of the 98/79/EC Directive on *in vitro* diagnostic medical devices, Annex II List B, as transposed into the national laws of the Member States of the European Union.

The Technical Documentation File is maintained at *Olerup* SSP AB, Hasselstigen 1, SE-133 33 Saltsjöbaden, 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.)

Saltsjöbaden, Sweden
2009-May-27

Olle Olerup
Managing Director

Lot No.: **60E**

Lot-specific Information

www.olerup.com

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