

Olerup SSP[®] HLA-B low resolution

Product number:	101.501-48/12 – including <i>Taq</i> pol. 101.501-48u/12u – without <i>Taq</i> pol.
Lot number:	49F
Expiry date:	2010-December-01
Number of tests:	48 tests – Product No. 101.501-48 12 tests – Product No. 101.501-12
Number of wells per test:	47 + 1
Storage - pre-aliquoted primers:	dark at -20°C
- PCR Master Mix:	-20°C
- Adhesive PCR seals	RT
- Product Insert	RT

This Product Description is only valid for Lot No. 49F.

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

The HLA-B low resolution specificity and interpretation tables have been updated for the HLA-B alleles reported since the previous *Olerup* SSP[®] HLA-B low resolution lot (**Lot No. 76E**) was made.

The HLA-B low resolution primer set is unchanged compared to the previous lot (**Lot No. 76E**).

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

PCR product sizes range from 75 to 430 base pairs.

The PCR product generated by the control primer pair is 430 base pairs.

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

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

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

PRODUCT DESCRIPTION

HLA-B low resolution SSP typing

CONTENT

The primer set contains 5'- and 3'-primers for grouping the B*0702 to B*8301 alleles into the corresponding serological groups B7 to B81 as well as primer pairs for recognizing the Bw4 and Bw6 sequence motifs.

PLATE LAYOUT

Each test consists of 48 PCR reactions in a 48 well cut PCR plate.

1	2	3	4	5	6	7	8
9	10	11	12	13	14	15	16
17	18	19	20	21	22	23	24
25	26	27	28	29	30	31	32
33	34	35	36	37	38	39	40
41	42	43	44	45	46	47	48

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

Well 48 – Negative Control.

The 48 well cut PCR plate is marked with ‘HLA-B low’.

Well No. 1 is marked with the Lot No. ‘49F’.

The PCR plates are covered with a PCR-compatible foil.

Please note: When removing each 48 well PCR plate, make sure that the remaining plates stay covered. Use a scalpel or a similar instrument to carefully cut the foil between the plates.

INTERPRETATION

Only HLA-B alleles will be amplified by the HLA-B low resolution typing kit, except that primer mix 3 will amplify the HLA-Cw*0305, Cw*0325 and Cw*0327 alleles, the Cw*0746 allele will be amplified by primer mix 8, primer mixes 10 and 43 will weakly amplify the Cw*0206 allele and primer mix 40 will amplify the Cw*150204 allele. Thus, the interpretation of HLA-B low resolution typings is only influenced by the Cw*0206, Cw*0305, Cw*0325, Cw*0327, Cw*0746 and Cw*150204 alleles and not by other alleles of other HLA class I genes.

UNIQUELY IDENTIFIED ALLELES

All the HLA-B alleles recognized by the HLA Nomenclature Committee in April 2008¹ will be amplified by the primers in the HLA-B low resolution SSP kit. The HLA-B alleles will be grouped into their corresponding serological specificities².

¹HLA-B alleles listed on the IMGT/HLA web page 2008-April-08, release 2.21.0, www.ebi.ac.uk/imgt/hla.

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

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

DNA-based HLA-B typing resolution required:

101.501-48/12 – including *Taq* polymerase
 101.501-48u/12u – without *Taq* polymerase

General “Instructions for Use”
 can be downloaded from

Lot No.: **49F**

Lot-specific information

www.olerup.com

B*07xx, B*08xx, B*13xx, B*14xx, B*18xx, B*27xx, B*1522, B*35xx, B*37xx, B*38xx, B*39xx, B*4005, B*41xx, B*42xx, B*44xx, B*45xx, B*46xx, B*47xx, B*48xx, B*49xx, B*50xx, B*51xx, B*52xx, B*53xx, B*54xx, B*55xx, B*56xx, B*57xx, B*58xx, B*59xx, B*67xx, B*73xx, B*78xx, B*81xx, B*82xx,	
B*40EJD ^a	4001, 4007, 4010, 4012, 4014, 4015, 4016
B*40EJB ^b	4002, 4003, 4004, 4006, 4008, 4009, 4011, 4013, 4018, 4019, 4020
B*15EJA ^c	1501, 1504, 1505, 1506, 1507, 1520, 1524, 1525, 1526N, 1527, 1528, 1530, 1532, 1533, 1534, 1535, 1536, 1538, 1539, 1540, 1543, 1545
B*15AHM ^d	1516, 1517
B*15EHZ ^e	1503, 1509, 1510, 1518, 1523, 1529, 1537, 1547
B*15CYP ^f	1502, 1508, 1511, 1515, 1521, 1531, 1544
B*15AND ^g	1512, 1514, 1519
B*1513 ^h	

^aB60 serologic equivalent cluster.

^bB61 serologic equivalent cluster.

^cB62 serologic equivalent cluster.

^dB63 serologic equivalent cluster.

^eB70 serologic equivalent cluster.

^fB75 serologic equivalent cluster.

^gB76 serologic equivalent cluster.

^hB77 serologic equivalent cluster.

The B*0826 and the B*4207 alleles give rise to identical amplification patterns with the HLA-B low resolution primer set. These alleles can be separated by the respective high resolution primer sets.

The B*1408 and the B*3925N, B*3930 and B*3932 to 3934 alleles give rise to identical amplification patterns with the HLA-B low resolution primer set. These alleles can be separated by the respective high resolution primer sets.

The B*1829 and the B*3523, B*3537, B*3553N, B*3564, B*3566 and B*356801-356802 alleles give rise to identical amplification patterns with the HLA-B low resolution primer set. These alleles can be separated by the respective high resolution primer sets.

The B*5504, B*5508, B*5513, B*5527 and the B*5615, B*5619N and B*5622 give rise to identical amplification patterns with the HLA-B low resolution primer set. These alleles can be separated by the respective high resolution primer sets.

The B*5523 and the B*5618 give rise to identical amplification patterns with the HLA-B low resolution primer set. These alleles can be separated by the respective high resolution primer sets.

SPECIFICITY TABLE

HLA-B low resolution SSP typing

Specificities and sizes of the PCR products of the 47 primer mixes used for HLA-B low resolution SSP typing

Primer Mix	Size of spec. PCR product ¹	Size of control band ²	HLA-B serol. ³	Amplified HLA Class I ⁴ alleles
1^{5,6}	110 bp	800 bp	7, 15, 37, 40, 41, 42, 48	070201-071802, 0720-0732, 0734-0739, 0741-0747, 0749N, 0750, 0752, 0754-0759, 0761-0764, 9538, 3707, 4015, 4016, 4023, 4032, 4108, 420501-420502, 4805, 4808, 4815
2	215 bp	1070 bp	8, 15, 44	080101-0825, 0827-0836, 9542, 4449
3⁷	140, 235 bp	1070 bp	7, 8, 13, 15, 35, 40, 4005, 44, 46, 53, 57	0720, 0724, 0760, 0821, 0825, 1301-1304, 1306-1308Q, 1310-1321, 150106-150108, 1507, 152702, 1536, 1545, 1555, 1568, 1589, 9526, 9535-9537, 9539-9542, 9544-9546, 3505, 3516, 3517, 3522, 3530, 3551, 3558, 3572, 4005, 4071, 4408, 4454, 4457, 4460, 4611-4614, 5314, 5714, 5715, Cw*0305, Cw*0325, Cw*0327
4⁸	130, 265 bp	1070 bp	13, 14, 15, 35, 40, 41, 44, 45, 47, 49, 50	1301-1304, 1306-1313, 1315-1321, 1401-1404, 1407N, 1546, 1553, 9506, 3547, 3563, 400101-400106, 4007, 4010, 401401-4016, 4022N, 4023, 4025, 4030-4034, 4036, 4038, 4042, 4043, 4045, 4047-4049, 4051-4055, 4058-4063, 4065-4067, 4069, 4072, 4073, 4076, 4077, 4079-4081, 4084, 4087, 4088, 4101-4108, 44020101-4405, 4409-4439, 4441-4443, 4445-4456N, 4458N-4460, 4501-4508, 47010101-4705, 4901, 4902, 4904, 4905, 5001, 5002, 5004
5⁹	185, 235 bp	1070 bp	14, 16, 27, 37, 38, 39, 47, 64, 67	1401, 1407N, 1408, 2701-270402, 270502-2706, 2708-2710, 2712, 2713, 2716-2718, 2720, 2723, 2726, 2727, 2729, 2731, 2735-2737, 2739-2742, 3702, 380101-3803, 3807-3817, 39010101-39010102L, 390103-390201, 3903, 3905-

				390602, 3907 [?] , 3908, 3909, 3911, 3914, 3915, 3918, 391902, 3922, 3924-3943, 4704, 4705, 670101
6⁹	185 bp	800 bp	14, 35, 38, 39, 65	140201-140602, 3526, 3805, 3904, 3907 [?]
7	290 bp	1070 bp	15, 62, 63, 75, 76, 77, 46	15010101-150103, 150106-150107, 1502, 1504-1508, 151101-1515, 15170101-151702, 1519-1521, 1524-152701, 1528, 1530-1536, 1538-1540, 1542-1546, 1548, 1550, 1555-1558, 1560, 1563, 1565, 1566, 1568, 1570, 1571, 1573, 1575-1579N, 1581-1589, 1592, 1594N, 1596, 1597, 9501, 9502, 9504-9507, 9509-9513, 9516-9518, 9520-9522, 9525, 9526, 9528, 9529, 9535-9546, 460101-4614
8	165, 220, 330 bp	1070 bp	8, 15, 37, 40, 41, 42, 44, 45, 51, 56, 57, 70, 71, 72	080101-0805, 0808N-0812, 0815-0819N, 0821-0824, 0826, 0827, 0829-0836, 1503, 1509, 1510, 1518, 1523, 1529, 1537, 1546, 1547, 1549, 1551-1554, 1561, 1562, 1564, 1568, 1569, 1572, 1574, 1580, 1583, 1590, 1591, 1593, 1598, 1599, 9503, 9506, 9508, 9514, 9515, 9519, 9523, 9524, 9527, 9531-9534, 9543, 3587, 3712, 4012, 4101-410302, 4105-4108, 4201, 4202, 4204-4208, 4414, 4415, 4418, 4420, 4501-4508, 5108, 5120, 5136, 5144N, 5613, 5709, 8201, 8202, Cw*0746
9^{10,11}	165, 390 bp	800 bp	15, 35, 40, 51, 52, 56, 58, 62, 63, 70, 78	150102, 1509, 1516-151702, 1567, 1595, 350402, 4026, 4028, 510101-510103, 510105-510902, 5111N, 5112, 511302, 5114, 5117-5120, 5122, 5123, 5126-5130, 5132, 5133, 5137-5141N, 5143, 5144N, 5146, 5148-5155, 520101-5207, 5209-5212, 560501-5606, 5621, 5808, 7801-7805
10	180, 395 bp	800 bp	13, 15, 40, 55, 62, 70, 71, 72, 75	1301-130204, 1307N-1309, 1311, 1314-1320, 1509, 1510, 1518, 1521, 1523, 1537, 1544, 1551, 1552, 1566, 1572, 1580, 1590, 1593, 1599, 9508, 9514, 9515, 9519, 9524, 9533, 9534, 4048, 5522, 5524,

				Cw*0206 ^{weakly}
11⁶	105, 195 bp	1070 bp	7, 8, 15, 27, 38, 39, 40, 44, 45, 48, 55, 72	0727, 0750, 0804, 0817, 1503, 1547, 1549, 1554, 1561, 1562, 1564, 1568, 1569, 1591, 1598, 9503, 9523, 9527, 9531, 9532, 2718, 2729, 3803, 390201-390202, 3908, 391301- 391302, 3923, 3939, 4012, 4046, 4410, 4415, 4418, 4440, 4444, 4501, 4505-4507, 480101-4805, 4807- 4819, 5002, 5518, 8201, 8202
12	275 bp	1070 bp	7, 8, 13, 15, 18, 35, 39, 40, 42, 44, 46, 48, 49, 51, 53, 54, 55, 56, 57, 58, 62, 63, 70, 71, 72, 75, 76, 77	0709, 0711, 0717, 0828, 0835, 1304, 1310, 15010101-150104, 150106- 1508, 151101-1516, 1518-1521, 1523-1529, 1531-1536, 1538-1540, 1543, 1544, 1546, 1547, 1549-1557, 1560-1562, 1564-1572, 1574-1576, 1578-1582, 1584, 1585, 1587-1589, 1591-1598, 9501-9529, 9531, 9532, 9534-9536, 9538-9546, 180101- 1815, 1817N-1825, 1827-1829, 2741, 350101-350107, 3505, 3507- 350803, 3510, 3511, 351401-3517, 3519-3521, 3523-3530, 3532, 3535, 3537, 3540N-3543, 3545-3554, 3557, 3558, 3561-3564, 3566-3569, 3571, 3572, 3576-3580, 3582, 3586, 3907, 3943, 4003, 4020, 4038, 4052, 4059, 4060, 4209, 4417, 4443, 460101-4610, 4612-4614, 4802, 4814, 4904, 4905, 5137, 5145, 530101-5303, 5305, 5306, 5308- 5316, 5406, 5409, 5514, 5523, 5603, 5609, 5618, 570101-570103, 5706, 5708, 5710, 5711, 5713-5716, 580101-5802, 5804-5807, 5809- 5817N
13	195 bp	1070 bp	15, 35, 37, 38, 44, 58, 76	1512, 1514, 1519, 1591, 9531, 3545, 3571, 370101-3709, 3712, 3713, 3817, 4417, 4443, 5807
14⁶	105, 435	1070 bp	7, 15, 41, 42, 59, 62, 63, 77	0704, 0725, 1513, 1516-151702, 1523, 1524, 1567, 1587, 1595, 4108, 420501-420502
15⁶	115 bp	1070 bp	18	180101-1815, 1817N-1828
16⁶	80 bp	1070 bp	27, 40, 44	2701-270402, 270502-2721, 2723- 2742, 4046, 4440, 4444
17	150 bp	1070 bp	13, 15, 27, 35, 37, 39,	1301, 1306, 1307N, 1312, 1313, 1317, 1320, 1502, 1513, 1520, 1521,

			40, 44, 48, 51, 53, 55, 56, 57, 58, 62, 75, 77	1525, 1536, 1544, 1562, 1577, 1580, 1585, 1588, 1589, 9506, 9512, 9521, 9539, 9544, 1822, 2719, 2730, 350101-350402, 3506-350803, 3510-3517, 3519-3521, 3523-3530, 3533-3536, 3538-3542, 3545-3550, 3552, 3554-3557, 3559, 3561-3563, 3565Q, 3569-3571, 3574, 3576- 3578, 3580-3585, 370101-370104, 3703N-3706, 3708, 3710, 3711, 3713, 3942, 4028, 44020101-4414, 4416, 4417, 4419N, 4421-4430, 4432-4440, 4442-4446, 4448- 4452N, 4455-4460, 4802, 5104, 5142, 5146, 530101-5313, 5315, 5316, 5514, 5609, 5611, 5612, 570101-5710, 5712, 5714-5716, 580101-580102, 5804, 5805, 5809- 5815, 5817N, 8301
18	135 bp	1070 bp	8, 18, 35, 37, 39, 56, 78	0832, 180101-1808, 1810-1815, 1817N-1829, 350101-3518, 352001- 3524, 3528-3545, 3548, 3550-3555, 3557-3562, 3564-3572, 3774-3588, 3711, 391901-391902, 5606, 7801- 7805
19^{6,11}	245, 400 bp	1070 bp	15, 62, 63, 70, 71, 72, 75, 76, 77, 40, 44	15010101-150104, 150106-1521, 1523-1540, 1542-1558, 1560-1599, 9501-9529, 9531-9546, 4012, 4410, 8201, 8202
20^{6,11}	205 bp	800 bp	7, 8, 15, 18, 37, 38	0727, 0802, 9515, 1809, 370101- 3704, 3705 ^{weakly} , 3706-3710, 3712, 3713, 380201-3804, 3808, 3815, 3817
21	170 bp	800 bp	15, 35, 38, 39, 67	1569, 9536, 3535, 380101-3809, 3811-3817, 39010101-39010102L, 390103-3920, 3922-3924, 3926- 3929, 3931, 3935, 3937-3942, 670101-6702
22⁶	110 bp	1070 bp	38	380101-3803, 3805, 3808-3817
23	400 bp	1070 bp	14, 38, 39, 64, 65	1401-1408, 380101-380202, 3804, 3805, 3808-3817, 39010101- 39010102L, 390103-390104, 3903- 3907, 3909, 3911, 3912, 3914, 3915, 3918-391902, 3922, 3924-3938Q, 3940N, 3941
24	430 bp	1070 bp	7, 8, 14, 39, 40, 41, 42, 45, 48, 50,	070201-0726, 0728-0735, 0737, 0739-0764, 080101-080105, 0804- 0835, 1401-1408, 39010101-

			60, 64, 65, 67, 73	39010102L, 390103-3920, 3922-3943, 400101-400106, 4007, 4009-4011 [?] , 401401-4016 [?] , 4018 [?] , 4021 [?] , 4022N [?] , 4023, 4024-4038 [?] , 4040 [?] , 4042-4046 [?] , 4048-4050 [?] , 4051, 4052-4058 [?] , 4059, 4060, 4061-4069 [?] , 4071-4076 [?] , 4077, 4078 [?] , 4079, 4080-4088 [?] , 4101-4108, 4201, 4202, 4204-4209, 4501-4508, 480101-4817, 4819, 5001, 5002, 5004, 670101-6702, 7301, 8102
25^{11,12}	175 bp	1070 bp	15, 40, 44, 46, 48, 60	9516, 9524, 400101-400106, 4007, 4010, 4012, 4021-4023, 4025, 4033, 4036, 4038, 4042, 4043, 4046-4049, 4051, 4052, 4054, 4055, 4060-4063, 4065-4067, 4069, 4073, 4074, 4076, 4079, 4081, 4084, 4087, 4088, 4431, 4606, 480301-480302, 4817
26	130 bp	1070 bp	40, 61	400201-400602, 4008, 4009, 4011, 4013, 4018-4020, 4024, 4026-4029, 4035, 4037, 4039, 4040, 4044, 4050, 4056, 4057, 4064, 4068, 4070, 4071, 4074, 4075, 4078, 4082, 4085, 4086
27^{6,11}	110 bp	1070 bp	7, 8, 41, 42, 55	0704, 0719, 0725, 080101-0805, 0807-0812, 0814-0819N, 0821-0824, 0826-0836, 3587, 4101-4108, 4201, 4202, 4204-4207, 4209, 5520
28	325 bp	1070 bp	7, 15, 27, 42, 45, 46, 54, 55, 56, 67, 73, 81	070201-070207, 0704-0707, 0709-0712, 0713 ^{weakly} , 0714, 0715 ^{weakly} , 0717-0726, 0728-0731, 0733-0736, 0739-0749N, 0751-0764, 1576, 9501, 2701-270402, 270502-2711, 2713-2715, 2717, 2719-2721, 2724-2728, 2730-2738, 2740-2742, 3576, 4201, 4202, 4204-4206, 4208, 4209, 4506, 460101-460102, 4602 ^{weakly} , 4603-4614, 5401-5413, 550101-5505, 5507-5517, 5519-5530, 5601-5616, 5618-5622, 670101-670102, 6702 ^{weakly} , 7301, 8101-8104N, 8201, 8202, 8301
29^{6,13}	110, 195, 225, 260 bp	1070 bp	35, 37, 44, 47, 51, 57	3538, 3545, 3571, 370101-370104, 3703N-3706, 3708, 3710-3713, 44020101-4414, 4416, 4417, 4419N-4436, 4438-4460, 5142, 5707, 5709, 8301
30	215 bp	800 bp	8, 12, 15, 41,	0809, 1583, 4101, 4105-4107, 4204,

			42, 44, 45, 51, 52, 53, 55, 56, 58	4406, 4415, 4418, 4420, 4501-4508, 510101, 510103-510108, 510201, 510203-5104, 5106-510901, 5110- 5114, 5116-512402, 5126-5146, 5148, 5149, 5151-5153, 5155, 520102, 520104-5203, 520601- 520602, 5209, 5306, 5520, 5613, 5808
31	130, 270 bp	1070 bp	18, 35, 37, 40, 46, 51, 53, 57, 58	1822, 3521, 3524, 3581, 3704, 4028, 460101-4614, 5104, 5146, 5302, 5306, 5714, 5809
32⁶	90, 410 bp	1070 bp	27, 35, 47, 54, 55, 56, 81	2702-270402, 270502-2711, 2713- 2715, 2717, 2719-2721, 2724-2728, 2730-2738, 2740-2742, 3576, 47010101-4703, 5401-5413, 550101-5505, 5507-5517, 5519- 5530, 5601-5616, 5618-5622, 8101, 8201, 8202, 8301
33⁶	90, 175 bp	1070 bp	15, 27, 35, 40, 48, 62, 75, 77, 81	1502, 1508, 151101-151103, 1513, 1515, 1521, 1531, 1544, 1555, 1588, 1589, 9512, 9521, 9539, 9544, 2724, 3546, 4031, 4045, 4080, 480101- 480102, 4804, 4806, 4807, 4809, 4811, 4815, 4816, 4818, 4819, 8101-8104N
34	145 bp	1070 bp	40, 44, 49	4013, 4019, 4418, 4425, 4450, 4901, 4904, 4905
35⁶	120, 210 bp	800 bp	13, 15, 45, 49, 50, 51, 52, 55, 56, 58, 62, 63, 78	1316, 1504 ^{weakly} , 1516, 1542, 1567, 1595, 9537, 4901-4905, 5001, 5002, 5004, 510101-5103, 5105, 5107- 510902, 5111N-5114, 5116-512402, 5126-5141N, 5143, 5144N, 5148- 5155, 520101-5212, 550101- 550104, 5503, 5505, 5509, 5511, 5515, 5517, 5521, 5524, 5525, 5528, 5529, 560501-5606, 5621, 5808, 7801-7805
36	430 bp	1070 bp	27, 40, 44, 45, 51, 52, 53, 57, 58, 59	2702, 2730, 4013, 4019, 4406, 4425, 4450, 510101-512402, 5126-5146, 5148, 5149, 5151-5153, 5155, 520101-5212, 530101-5302, 5304- 5308, 5310, 5314-5316, 570101- 5711, 5713-5716, 580101-5802, 5804-5816, 5902
37	145 bp	1070 bp	15, 35, 40, 41, 44, 45, 47, 50, 72	1546, 1553, 9506, 9543, 3519, 3547, 3563, 400101-4011, 401401-4016, 4018, 4020, 4022N-4040, 4042-

				4045, 4048-4075, 4077-4088, 4101-4104, 4105 [?] , 4106-4108, 4409, 4446, 4501-4507, 4702, 5001, 5002, 5004
38⁹	300 bp	1070 bp	7, 8, 13, 15, 18, 27, 35, 37, 38, 39, 40, 41, 44, 45, 46, 47, 48, 49, 50, 52, 55, 57, 58, 62, 72, 76, 78	0754, 0817, 1301-1304, 1306, 1308Q-1321, 15010101-150104, 150106-150108, 1503-1507, 1512, 1514, 1519, 1520, 1524-152702, 1530, 1532-1536, 1538-1540, 1542, 1543, 1545-1550, 1553, 1554, 1556-1558, 1560-1563, 1565, 1566, 1568-1571, 1573-1575, 1577-1579N, 1581-1587, 1591, 1592, 1594N, 1596-1598, 9502-9507, 9509-9511N, 9513, 9516-9518, 9522, 9523, 9525-9529, 9531, 9532, 9535-9538, 9540-9542, 9545, 9546, 1812, 2701-270402, 270502-2721, 2724-2742, 3510, 3513, 3516, 3528, 3563, 3569, 3580, 370101-3707, 3709-3713, 3803, 3804, 390201-390202, 3908, 391301-391302, 3922, 3923, 400101-4007, 4009-4016, 4018-4024, 4026-4040, 4042-4067, 4070-4088, 4101-4108, 44020101-4405, 4407-4411, 4413-4460, 4501-4505, 4507, 4508, 4610-4614, 47010101-4705, 480101-4805, 4807-4815, 4817-4819, 4901-4905, 5001, 5002, 5004, 520101-5212, 5518, 5712-5716, 580102, 5815-5817N, 7805
39	160, 215 bp	1070 bp	15, 37, 44, 54	150104, 370104, 44020101-440204, 4406, 4408, 4409, 4411, 4412, 4416, 4419N-4424, 4427, 4433, 4434, 4441, 4444, 4448, 4449, 4451-4453, 4455, 4459, 5401-5413, 8301
40⁹	180, 210 bp	1070 bp	13, 15, 18, 35, 39, 40, 54, 55, 56, 59, 78	1306, 1542, 1586, 1804, 3560, 3917, 4058, 4508, 5401, 5402, 5405N, 5407, 5408N, 5410, 5412, 5413, 550101-5503, 5505, 5507, 5510-5512, 5515, 5516, 5518, 5519, 5521, 5525, 5526, 5529, 5530, 560501, 5606, 5610, 5623, 5901, 7801, 780202, 7803, Cw*150204
41¹⁴	180 bp	1070 bp	13, 15, 40, 44, 45, 46, 49, 50, 51,	1303, 1573, 4071, 4410, 4415, 4418, 4501, 4504-4507, 4611, 4901-4903, 5001, 5002, 5004, 5115, 5403, 5601,

			54, 56	5602, 5604, 5607, 5608, 5613, 5614, 5616, 5617, 5620, 8201, 8202
42⁶	90, 240 bp	800 bp	55, 57	5514, 570101-5715
43^{6,15}	90 bp	1070 bp	13, 15, 39, 40, 56, 58	1311, 1573, 3917, 4048, 4071, 5602, 5604, 5610, 580101-5802, 5804-5817N, Cw*0206^{weakly}
44⁶	95 bp	1070 bp	8, 18, 35, 37, 38, 39, 44, 51, 52, 53, 78	0832, 180101-1811, 1813-1815, 1817N-1829, 350101-350902, 3511, 3512, 351401-3515, 3517, 3518, 352001-3524, 3527, 3529-3545, 3548, 3550-3562, 3564-356802, 3570-3572, 3574-3579, 3581-3588, 3708, 3806, 3807, 391901-391902, 4406, 510101-512402, 5126-5146, 5148-5155, 530101-5316, 7801-7804
45^{6,11}	115, 150 bp	1070 bp	15, 18, 27, 35, 39, 46, 54, 55, 56, 62, 73, 75, 76	15010101-150104, 150106-150108, 1504, 1507, 1508, 151101-1512, 1514, 1515, 1519, 1524, 1526N-1528, 1530, 1532, 1534, 1535, 1538, 1543, 1545, 1546, 1550, 1553, 1554, 1556-1558, 1560, 1563, 1566, 1568, 1570, 1571, 1573, 1575-1577, 1579N, 1581, 1582, 1585, 1587, 1592, 1594N, 1596, 1597, 9501, 9502, 9504, 9505, 9509-9511N, 9513, 9517, 9518, 9520, 9522, 9525, 9526, 9528, 9529, 9535, 9537, 9540, 9542-9546, 1819, 2725, 351401-351402, 3543, 3544, 3562, 3567, 3579, 3586, 3918, 3936, 460101-4602, 4604, 4605, 4607N, 4609, 4610, 4612, 4614, 5406, 5521, 5603, 7301
46	360 bp	1070 bp	Bw4 ¹⁶	
47	355 bp	1070 bp	Bw6	

¹Alleles are assigned by the presence of specific PCR product(s). However, the sizes of the specific PCR products may be helpful in the interpretation of HLA-B low resolution SSP typings. When the primers in a primer mix can give rise to specific PCR products of more than one length this is indicated if the size difference is 20 base pairs or more. Size differences shorter than 20 base pairs are not given. For high resolution SSP kits the respective 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, e.g. the primers in wells 5, 6, 38, 40.

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

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

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

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

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

In addition, wells number 6, 9, 10, 20, 21, 30, 35 and 42 contain the primer pair giving rise to the shorter, 800 bp, internal positive control band in order to allow kit identification. In the presence of a specific amplification the intensity of the control band often decreases.

³The serological reactivity of all HLA-B alleles is not known. In this table we used the information published in *Tissue Antigens* 1999: **54**: 409-437, also available at the www.worldmarrow.org web site and also inferred the serological grouping from the naming of the sequence-defined allele.

⁴For several HLA-B alleles only partial nucleotide sequences are available, especially for the 1st exon. In these instances it is not known whether some of the primers of the HLA-B low resolution SSP set are completely matched with the target sequences or not. We assume that unknown sequences are conserved within allelic groups.

The B*0826 and the B*4207 alleles give rise to identical amplification patterns with the HLA-B low resolution primer set. These alleles can be separated by the respective high resolution primer sets.

The B*1408 and the B*3925N, B*3930 and B*3932 to 3934 alleles give rise to identical amplification patterns with the HLA-B low resolution primer set. These alleles can be separated by the respective high resolution primer sets.

The B*1829 and the B*3523, B*3537, B*3553N, B*3564, B*3566 and B*356801-356802 alleles give rise to identical amplification patterns with the HLA-B low resolution primer set. These alleles can be separated by the respective high resolution primer sets.

The B*5504, B*5508, B*5513, B*5527 and the B*5615, B*5619N and B*5622 give rise to identical amplification patterns with the HLA-B low resolution primer set. These alleles can be separated by the respective high resolution primer sets.

The B*5523 and the B*5618 give rise to identical amplification patterns with the HLA-B low resolution primer set. These alleles can be separated by the respective high resolution primer sets.

⁵Primer mix 1 may give rise to a primer oligomer artifact.

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

⁷Primer mix 3 will amplify the Cw*0305, Cw*0325 and Cw*0327 alleles.

⁸Primer mix 4 may yield less specific PCR product than the other HLA-B low resolution primer mixes in B*40, B*41, B*45, B*49 and B*50 alleles.

⁹Primer mixes 5, 6, 38 and 40 have a higher tendency than other primer mixes to give rise to nonspecific amplifications.

¹⁰The B*57 and B*58 alleles might be faintly amplified by primer mix 9.

¹¹Primer mixes 9, 19, 20, 25, 27 and 45 might have a tendency of giving rise to a primer oligomer artifact.

¹²The Cw*1701 and Cw*1702 alleles might be faintly amplified by primer mix 25.

¹³Primer mix 29 might generate a false band of about 500 base pairs. This band should be disregarded when interpreting HLA-B low resolution typings.

¹⁴The Cw*0312 allele might be faintly amplified by primer mix 41.

¹⁵The Cw*0206 allele might be weakly amplified by primer mix 43.

¹⁶The Bw4-associated HLA-A specificities A23, A24, A2403, A25 and A32 are not amplified by the primer pair in primer mix 46.

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

INTERPRETATION TABLE																									
HLA-B low resolution SSP																									
Amplification patterns of the B*0702 to B*8301 alleles ⁶																									
		Well																							
		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24
Length of spec. PCR product(s)		110	215	140	130	185	185	290	165	165	180	105	275	195	105	115	80	150	135	245	205	170	110	400	430
				235	265	235			220	390	395	195			435					400					
									330																
Length of int. pos. control ¹		800	1070	1070	1070	1070	800	1070	1070	800	800	1070	1070	1070	1070	1070	1070	1070	1070	1070	800	800	1070	1070	1070
5'-primer(s) ²		527	97	209	103	103	103	45	45	45	45	206	419	142	45	161	167	355	206	45	142	409	246	44	44
		5'-TgA ³	5'-Tcg ³	5'-ggC ³	5'-CCg ³	5'-CCT ³	5'-CCg ³	5'-ggA ³	5'-ggA ³	5'-ggA ³	5'-ggA ³	5'-AgA ³	5'-gTC ³	5'-TCT ³	5'-ggA ³	5'-Cgg ³	5'-gCT ³	5'-TCA ³	5'-gAC ³	5'-ggA ³	5'-TCT ³	5'-ggC ³	5'-gAA ³	5'-ggC ³	5'-ggC ³
		540		363	361	363			357	435	420	420		419	540					368		420			
		5'-gAC ³		5'-AgC ³	5'-AgT ³	5'-AAT ³			5'-Tgg ³	5'-AAA ³	5'-TTA ³	5'-TTA ³		5'-gTC ³	5'-gAC ³					5'-gTT ³		5'-TTA ³			
									412																
									5'-ATA ³																
3'-primer(s) ³		605	272	309	193	246	246	165	206	266	272	272	3rd	301	309	234	204	463	302	259	301	544	317	272	301
		5'-gCT ³	5'-Tgg ³	5'-gtg ³	5'-Cgt ³	5'-TAT ³	5'-TAT ³	5'-Tgg ³	5'-CCT ³	5'-TCC ³	5'-Tgc ³	5'-Tgg ³	5'-TAT ³	5'-gTC ³	5'-ATC ³	5'-TCT ³	5'-TCT ³	5'-gCT ³	5'-ggC ³	5'-gTT ³	5'-gTC ³	5'-ggT ³	5'-ggA ³	5'-Tgc ³	5'-ggC ³
			272	559	583	559			538	559	559	572		570	605					266	309				302
			5'-TgA ³	5'-CAG ³	5'-gTg ³	5'-CTC ³			5'-gTC ³	5'-CAG ³	5'-CTC ³	5'-gCg ³		5'-CCg ³	5'-gCT ³					5'-TCC ³	5'-gtg ³				5'-ggT ³
														572						272					
														5'-gCg ³						5'-Tgg ³					
																				292					
																				5'-gTA ³					
																				572					
																				5'-gCg ³					
Well No.		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24
HLA-B allele ⁴	ser. ⁵																								
*070201-070207, 070501-0707, 0710, 0712, 0714, 071801- 071802, 0721-0723, 0726, 0728-0731, 0734, 0735, 0739, 0741- 0747, 0749N, 0752, 0755-0759, 0761-0764	B7	1																							24

*0703, 0708, 0716, 0732, 0737	B7, B703	1																24
*0704, 0725	B7	1										14						24
*0709, 0711, 0717	B7	1									12							24
*0713, 0715	-	1																24
*0719	-																	24
*0720, 0724	-	1		3														24
*0727	-	1									11						20	
*0733, 0740, 0748, 0751, 0753	-																	24
*0736	-	1																
*0738	-	1																
*0750	-	1									11							24
*0754	-	1																24
*0760	-			3														24
*080101-080105, 0805, 0808N, 0810-0812, 0815, 0816, 0818, 0819N, 0822-0824, 0827, 0829-0831, 0833, 0834	B8, Null			2														24
*0802	B8			2						8							20	
*0803	B8			2						8								
*0804	-			2						8		11						24
*0806, 0813, 0820	B8			2														24
*0807, 0814	-			2														24
*0809	-			2						8								24
*0817				2						8		11						24
*0821	-			2		3				8								24
*0825	-			2		3												24
*0826, 4207	-									8								24
*0828	-			2								12						24
*0832	-			2						8						18		24
*0835	-			2						8		12						24
*0836	-			2						8								
*1301, 1317, 1320	B13					3		4				10					17	
*130201-130204, 1308Q, 1315, 1318, 1319	B13							3		4			10					
*1303	-							3		4								
*1304, 1310	-							3		4				12				
*1306	-									3		4					17	
*1307N	Null							3		4			10				17	
*1309	-									4			10					
*1311	-									3		4		10				
*1312, 1313	-									3		4					17	
*1314	-									3				10				
*1316	-											3		4				
*1321	-									3		4						

					47	B7, B703	*0703, 0708, 0716, 0732, 0737
27	28				47	B7	*0704, 0725
28					47	B7	*0709, 0711, 0717
w					47	-	*0713, 0715
27	28				47	-	*0719
28					47	-	*0720, 0724
					46	-	*0727
28					47	-	*0733, 0740, 0748, 0751, 0753
28					46	-	*0736
					46	-	*0738
					47	-	*0750
28			38		47	-	*0754
28					47	-	*0760
27					47	B8, Null	*080101-080105, 0805, 0808N, 0810-0812, 0815, 0816, 0818, 0819N, 0822-0824, 0827, 0829-0831, 0833, 0834
27					46	B8	*0802
27					46	B8	*0803
27					47	-	*0804
27					47	B8	*0806, 0813, 0820
27					47	-	*0807, 0814
27	30				47	-	*0809
27			38		47	-	*0817
27					47	-	*0821
					47	-	*0825
27					47	-	*0826, 4207
27					47	-	*0828
27					44	-	*0832
27					47	-	*0835
27					47	-	*0836
			38		46	B13	*1301, 1317, 1320
			38		46	B13	*130201-130204, 1308Q, 1315, 1318, 1319
			38	41	46	-	*1303
			38		46	-	*1304, 1310
			38	40	46	-	*1306
					46	Null	*1307N
			38		47	-	*1309
			38	43	46	-	*1311
			38		46	-	*1312, 1313
			38		46	-	*1314
		35	38		46	-	*1316
			38		46	-	*1321

*1401, 1407N	B64			4	5												23	24
*140201-1404	B65			4	6												23	24
*1405-140602	-				6												23	24
*1408, 3925N, 3930, 3932-3934	-				5												23	24
*15010101- 15010102N, 150103, 1526N, 152701, 1532, 1534, 1535, 1538, 1550, 1556, 1557, 1560, 1570, 1571, 1575, 1579N, 1581, 1582, 1592, 1594N, 1596, 1597, 9502, 9504, 9505, 9509- 9511N, 9513, 9517, 9518, 9522, 9525, 9528, 9529	B62, Null, B15				7			12						19				
*150102	B62				7			9		12				19				
*150104	B62							12						19				
*150106-150107, 1507, 9526, 9535, 9540, 9545, 9546	B62			3	7			12						19				
*150108, 152702	B62			3				12						19				
*1502, 1588, 9512, 9521	B75				7			12					17	19				
*1503, 1547, 1549, 1561, 1598, 9503, 9523, 9527, 9532	B72				8			11	12					19				
*1504	B62, Null, B15				7			12						19				
*1505, 1506, 1533, 1539, 1540, 1565, 1578, 1584, 9507	B62, B15				7			12						19				
*1508, 151101-151103, 1515	B75				7			12						19				
*1509	B70				8			9	10					19				
*1510, 1537, 1590, 1599, 9533	B71				8			10						19				
*1512, 1514, 1519	B76				7			12	13					19				
*1513	B77				7			12		14			17	19				
*1516, 1567, 1595	B63							9	12		14			19				
*15170101-151702	B63				7			9			14			19				
*1518, 1551, 1552, 1572, 1593, 9508, 9514, 9519, 9534	B71				8			10	12					19				
*1520, 1525	B62				7			12					17	19				

					47	B64	*1401, 1407N
					47	B65	*140201-1404
					47	-	*1405-140602
					47	-	*1408, 3925N, 3930, 3932-3934
			38		45	47	*15010101- 15010102N, 150103, 1526N, 152701, 1532, 1534, 1535, 1538, 1550, 1556, 1557, 1560, 1570, 1571, 1575, 1579N, 1581, 1582, 1592, 1594N, 1596, 1597, 9502, 9504, 9505, 9509- 9511N, 9513, 9517, 9518, 9522, 9525, 9528, 9529
			38		45	47	B62
			38 39		45	47	B62
			38		45	47	B62
			38		45	47	B62
		33				47	B75
			38			47	B72
		w	38		45	47	B62, Null, B15
			38			47	B62, B15
		33			45	47	B75
					47		B70
			38		45	47	B76
		33			46		B77
		35			46		B63
					46		B63
					47		B71
			38			47	B62

*1521, 1544	B75				7	10	12		17	19			
*1523	-				8	10	12	14		19			
*1524, 1587	B62				7		12	14		19			
*1528, 9520	B15				7		12			19			
*1529	B15				8		12			19			
*1530, 1558, 1563	B02, B15				7					19			
*1531	B75				7		12			19			
*1536	-		3		7		12		17	19			
*1542	-				7					19			
*1543	-				7		12			19			
*1545	B62		3		7					19			
*1546	B72			4	7	8	12			19			
*1548	B62				7					19			
*1553	-			4	8		12			19			
*1554	-				8		11	12		19			
*1555	-		3		7		12			19			
*1562	-				8		11	12	17	19			
*1564	-				8		11	12		19			
*1566	-				7	10	12			19			
*1568	-		3		7	8	11	12		19			
*1569	-				8		11	12		19	21		
*1573	-				7					19			
*1574	-				8		12			19			
*1576, 9501	-				7		12			19			
*1577	-				7				17	19			
*1580	-				8	10	12		17	19			
*1583	-				7	8				19			
*1585	-				7		12		17	19			
*1586	-				7					19			
*1589	-		3		7		12		17	19			
*1591, 9531	-				8		11	12	13	19			
*9506	-			4	7	8	12		17	19			
*9515	-				8	10	12			19	20		
*9516	-				7		12			19			
*9524	-				8	10	12			19			
*9536	-		3		7		12			19	21		
*9537	-		3		7					19			
*9538	-	1			7		12			19			
*9539	-		3		7		12		17	19			
*9541	-		3		7		12			19			
*9542	-		2	3	7		12			19			
*9543	-				7	8	12			19			
*9544	-		3		7		12		17	19			
*180101-1803, 1805- 1808, 1810, 1811, 1813 1815, 1817N, 1818, 1820, 1821, 1823N- 1825, 1827, 1828	B18						12	15		18			
*1804	-						12	15		18			

		33			47	B75	*1521, 1544
					46	-	*1523
			38		45 46	B62	*1524, 1587
					45 47	B15	*1528, 9520
					47	B15	*1529
			38		45 47	B15 B15	*1530, 1558, 1563
		33			47	B75	*1531
			38		46	-	*1536
		35	38	40	47	-	*1542
			38		45 46	-	*1543
			38		45 47	B62	*1545
			37 38		45 47	B72	*1546
			38		47	B62	*1548
			37 38		45 47	-	*1553
			38		45 47	-	*1554
		33			47	-	*1555
			38		47	-	*1562
					47	-	*1564
			38		45 47	-	*1566
			38		45 47	-	*1568
			38		47	-	*1569
			38	41 43	45 47	-	*1573
			38		47	-	*1574
28					45 47	-	*1576, 9501
			38		45 47	-	*1577
					47	-	*1580
	30		38		47	-	*1583
			38		45 47	-	*1585
			38	40	47	-	*1586
		33			46	-	*1589
			38		47	-	*1591, 9531
			37 38		47	-	*9506
					46	-	*9515
25			38		47	-	*9516
25					47	-	*9524
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		36		42	46	B57	*5702-5705
29		36		42	46	-	*5707
29		36		42	46	-	*5709
		36		42	46	-	*5711
			38	42	47	-	*5712
		36	38	42	46	-	*5713
	31	36	38	42	46	-	*5714
		36	38	42	46	-	*5715
		36	38		46	-	*5716
		36		43	46	B58	*580101, 5804, 5805, 5810N-5814
		36	38	43	46		*580102, 5815
		36		43	46	B58	*5802, 5806
		36		43	46	-	*5807
	30	35 36		43	46	-	*5808
	31	36		43	46	-	*5809
		36	38	43	46	-	*5816
			38	43	46	-	*5817N

[illegible]

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

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

In addition, wells number 6, 9, 10, 20, 21, 30, 35 and 42 contain the primer pair giving rise to the shorter, 800 bp, internal positive control band in order to allow kit identification.

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

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

⁶The B*0826 and the B*4207 alleles give rise to identical amplification patterns with the HLA-B low resolution primer set. These alleles can be separated by the respective high resolution primer sets.

The B*1408 and the B*3925N, B*3930 and B*3932 to 3934 alleles give rise to identical amplification patterns with the HLA-B low resolution primer set. These alleles can be separated by the respective high resolution primer sets.

The B*1829 and the B*3523, B*3537, B*3553N, B*3564, B*3566 and B*356801-356802 alleles give rise to identical amplification patterns with the HLA-B low resolution primer set. These alleles can be separated by the respective high resolution primer sets.

The B*5504, B*5508, B*5513, B*5527 and the B*5615, B*5619N and B*5622 give rise to identical amplification patterns with the HLA-B low resolution primer set. These alleles can be separated by the respective high resolution primer sets.

The B*5523 and the B*5618 give rise to identical amplification patterns with the HLA-B low resolution primer set. These alleles can be separated by the respective high resolution primer sets.

‘ser’, serological HLA specificity.

‘w’, might be weakly amplified.

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

CELL LINE VALIDATION SHEET																					
HLA-B low resolution SSP kit																					
					Prod. No.:	Well															
						1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
						200848001	200848002	200848003	200848004	200848005	200848006	200848007	200848008	200848009	200848010	200848011	200848012	200848013	200848014	200848015	200848016
	IHC cell line		B*																		
1	9001	SA	*0702			+	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
2	9280	LK707	*5201		*7301	-	-	-	-	-	-	-	+	-	-	-	-	-	-	-	
3	9011	E4181324	*52011			-	-	-	-	-	-	-	+	-	-	-	-	-	-	-	
4	9275	GU373	*1510		*5301	-	-	-	-	-	-	-	+	-	+	-	+	-	-	-	
5	9009	KAS011	*3701			-	-	-	-	-	-	-	-	-	-	-	-	+	-	-	
6	9353	SM	*3901		*5101	-	-	-	-	+	-	-	-	+	-	-	-	-	-	-	
7	9020	QBL	*1801			-	-	-	-	-	-	-	-	-	-	-	+	-	+	-	
8	9007	DEM	*5701			-	-	-	-	-	-	-	-	-	-	-	+	-	-	-	
9	9026	YAR	*3801			-	-	-	-	+	-	-	-	-	-	-	-	-	-	-	
10	9107	LKT3	*5401			-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
11	9051	PITOUT	*4403			-	-	-	+	-	-	-	-	-	-	-	-	-	-	-	
12	9052	DBB	*5701			-	-	-	-	-	-	-	-	-	-	-	+	-	-	-	
13	9067	BTB	*2705			-	-	-	-	+	-	-	-	-	-	-	-	-	-	+	
14	9071	OLGA	*1501		*1520	-	-	-	-	-	-	+	-	-	-	-	+	-	-	-	
15	9075	DKB	*4001			-	-	-	+	-	-	-	-	-	-	-	-	-	-	-	
16	9037	SWEIG007	*4002			-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
17	9008	WILJON	*1801			-	-	-	-	-	-	-	-	-	-	-	+	-	+	-	
18	9257	32367	*1401		*5601	-	-	-	+	+	-	-	-	-	-	-	-	-	-	-	
19	9038	BM16	*1801			-	-	-	-	-	-	-	-	-	-	-	+	-	+	-	
20	9059	SLE005	*4001			-	-	-	+	-	-	-	-	-	-	-	-	-	-	-	
21	9064	AMALA	*1501			-	-	-	-	-	-	+	-	-	-	-	+	-	-	-	
22	9056	KOSE	*3503			-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
23	9124	IHL	*4002		*5602	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
24	9035	JBUSH	*3801			-	-	-	-	+	-	-	-	-	-	-	-	-	-	-	
25	9049	IBW9	*1402			-	-	-	+	-	+	-	-	-	-	-	-	-	-	-	
26	9285	WT49	*5801			-	-	-	-	-	-	-	-	-	-	-	+	-	-	-	
27	9191	CH1007	*0705		*5101	+	-	-	-	-	-	-	-	+	-	-	-	-	-	-	
28	9320	BEL5GB	*4402		*4403	-	-	-	+	-	-	-	-	-	-	-	-	-	-	-	
29	9050	MOU	*4403			-	-	-	+	-	-	-	-	-	-	-	-	-	-	-	
30	9021	RSH	*4201			-	-	-	-	-	-	-	+	-	-	-	-	-	-	-	
31	9019	DUCAF	*1801			-	-	-	-	-	-	-	-	-	-	-	+	-	+	-	
32	9297	HAG	*4102			-	-	-	+	-	-	-	+	-	-	-	-	-	-	-	
33	9098	MT14B	*4001			-	-	-	+	-	-	-	-	-	-	-	-	-	-	-	
34	9104	DHIF	*3801			-	-	-	-	+	-	-	-	-	-	-	-	-	-	-	
35	9302	SSTO	*4402			-	-	-	+	-	-	-	-	-	-	-	-	-	-	-	
36	9024	KT17	*1501		*3501	-	-	-	-	-	-	+	-	-	-	-	+	-	-	-	
37	9065	HHKB	*0702			+	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
38	9099	LZL	*1501			-	-	-	-	-	-	+	-	-	-	-	+	-	-	-	
39	9315	CML	*0801		*2705	-	+	-	-	+	-	-	+	-	-	-	-	-	-	+	
40	9134	WHONP199	*1302		*4601	-	-	+	+	-	-	+	-	-	+	-	+	-	-	-	
41	9055	H0301	*1402			-	-	-	+	-	+	-	-	-	-	-	-	-	-	-	
42	9066	TAB089	*4601			-	-	-	-	-	-	+	-	-	-	-	+	-	-	-	
43	9076	T7526	*4601			-	-	-	-	-	-	+	-	-	-	-	+	-	-	-	
44	9057	TEM	*3801			-	-	-	-	+	-	-	-	-	-	-	-	-	-	-	
45	9239	SHJO	*4201		*5001	-	-	-	+	-	-	-	+	-	-	-	-	-	-	-	
46	9013	SCHU	*0702			+	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
47	9045	TUBO	*5101			-	-	-	-	-	-	-	-	+	-	-	-	-	-	-	
48	9303	TER-ND	*3501		*4403	-	-	-	+	-	-	-	-	-	-	-	+	-	-	-	

CELL LINE VALIDATION SHEET																															
HLA-B low resolution SSP kit																															
					Well																										
						17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32										
				Prod. No.:		200848017	200848017	200848017	200848017	200848017	200848017	200848017	200848017	200848017	200848017	200848017	200848017	200848017	200848017	200848017	200848017										
	IHC cell line		B*																												
1	9001	SA	*0702			-	-	-	+	-	-	-	+	-	-	-	+	-	-	-	-										
2	9280	LK707	*5201		*7301	-	-	-	-	-	-	-	+	-	-	-	+	-	-	-	-										
3	9011	E4181324	*52011			-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-										
4	9275	GU373	*1510		*5301	+	-	+	-	-	-	-	-	-	-	-	-	-	-	-	-										
5	9009	KAS011	*3701			+	-	-	+	-	-	-	-	-	-	-	-	+	-	-	-										
6	9353	SM	*3901		*5101	-	-	-	-	+	-	+	+	-	-	-	-	-	+	-	-										
7	9020	QBL	*1801			-	+	-	-	-	-	-	-	-	-	-	-	-	-	-	-										
8	9007	DEM	*5701			+	+	-	-	-	-	-	-	-	-	-	-	-	-	-	-										
9	9026	YAR	*3801			-	-	-	-	-	+	+	-	-	-	-	-	-	-	-	-										
10	9107	LKT3	*5401			-	-	-	-	-	-	-	-	-	-	-	-	+	-	-	+										
11	9051	PITOUT	*4403			+	-	-	-	-	-	-	-	-	-	-	-	+	-	-	-										
12	9052	DBB	*5701			+	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-										
13	9067	BTB	*2705			-	-	-	-	-	-	-	-	-	-	-	-	+	-	-	+										
14	9071	OLGA	*1501		*1520	+	-	+	-	-	-	-	-	-	-	-	-	-	-	-	-										
15	9075	DKB	*4001			-	-	-	-	-	-	-	+	+	-	-	-	-	-	-	-										
16	9037	SWEIG007	*4002			-	-	-	-	-	-	-	-	-	+	-	-	-	-	-	-										
17	9008	WILJON	*1801			-	+	-	-	-	-	-	-	-	-	-	-	-	-	-	-										
18	9257	32367	*1401		*5601	-	-	-	-	-	-	+	+	-	-	-	+	-	-	-	+										
19	9038	BM16	*1801			-	+	-	-	-	-	-	-	-	-	-	-	-	-	-	-										
20	9059	SLE005	*4001			-	-	-	-	-	-	-	+	+	-	-	-	-	-	-	-										
21	9064	AMALA	*1501			-	-	+	-	-	-	-	-	-	-	-	-	-	-	-	-										
22	9056	KOSE	*3503			+	+	-	-	-	-	-	-	-	-	-	-	-	-	-	-										
23	9124	IHL	*4002		*5602	-	-	-	-	-	-	-	-	-	+	-	+	-	-	-	+										
24	9035	JBUSH	*3801			-	-	-	-	+	+	+	-	-	-	-	-	-	-	-	-										
25	9049	IBW9	*1402			-	-	-	-	-	-	+	+	-	-	-	-	-	-	-	-										
26	9285	WT49	*5801			+	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-										
27	9191	CH1007	*0705		*5101	-	-	-	-	-	-	-	+	-	-	-	+	-	+	-	-										
28	9320	BEL5GB	*4402		*4403	+	-	-	-	-	-	-	-	-	-	-	-	+	-	-	-										
29	9050	MOU	*4403			+	-	-	-	-	-	-	-	-	-	-	-	+	-	-	-										
30	9021	RSH	*4201			-	-	-	-	-	-	-	+	-	-	+	+	-	-	-	-										
31	9019	DUCAF	*1801			-	+	-	-	-	-	-	-	-	-	-	-	-	-	-	-										
32	9297	HAG	*4102			-	-	-	-	-	-	-	+	-	-	+	-	-	-	-	-										
33	9098	MT14B	*4001			-	-	-	-	-	-	-	+	+	-	-	-	-	-	-	-										
34	9104	DHIF	*3801			-	-	-	-	+	+	+	-	-	-	-	-	-	-	-	-										
35	9302	SSTO	*4402			+	-	-	-	-	-	-	-	-	-	-	-	+	-	-	-										
36	9024	KT17	*1501		*3501	+	+	+	-	-	-	-	-	-	-	-	-	-	-	-	-										
37	9065	HHKB	*0702			-	-	-	-	-	-	-	+	-	-	-	+	-	-	-	-										
38	9099	LZL	*1501			-	-	+	-	-	-	-	-	-	-	-	-	-	-	-	-										
39	9315	CML	*0801		*2705	-	-	-	-	-	-	-	+	-	-	+	+	-	-	-	+										
40	9134	WHONP199	*1302		*4601	-	-	-	-	-	-	-	-	-	-	-	+	-	-	+	-										
41	9055	H0301	*1402			-	-	-	-	-	-	+	+	-	-	-	-	-	-	-	-										
42	9066	TAB089	*4601			-	-	-	-	-	-	-	-	-	-	-	+	-	-	+	-										
43	9076	T7526	*4601			-	-	-	-	-	-	-	-	-	-	-	+	-	-	+	-										
44	9057	TEM	*3801			-	-	-	-	+	+	+	-	-	-	-	-	-	-	-	-										
45	9239	SHJO	*4201		*5001	-	-	-	-	-	-	-	+	-	-	+	+	-	-	-	-										
46	9013	SCHU	*0702			-	-	-	-	-	-	-	+	-	-	-	+	-	-	-	-										
47	9045	TUBO	*5101			-	-	-	-	-	-	-	-	-	-	-	-	-	+	-	-										
48	9303	TER-ND	*3501		*4403	+	+	-	-	-	-	-	-	-	-	-	-	+	-	-	-										

CELL LINE VALIDATION SHEET																				
HLA-B low resolution SSP kit																				
					Well															
						33	34	35	36	37	38	39	40	41	42	43	44	45	46	47
				Prod. No.:		200848033	200848034	200848035	200848036	200848037	200848038	200848039	200848040	200848041	200848042	200848043	200848044	200848045	200848046	200848047
	IHC cell line		B*																	
1	9001	SA	*0702		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	+
2	9280	LK707	*5201	*7301	-	-	+	+	-	+	-	-	-	-	-	-	-	-	+	-
3	9011	E4181324	*52011		-	-	+	+	-	+	-	-	-	-	-	-	-	+	+	+
4	9275	GU373	*1510	*5301	-	-	-	+	-	-	-	-	-	-	-	-	+	-	+	+
5	9009	KAS011	*3701		-	-	-	-	-	+	-	-	-	-	-	-	-	-	+	-
6	9353	SM	*3901	*5101	-	-	+	+	-	-	-	-	-	-	-	-	+	-	+	+
7	9020	QBL	*1801		-	-	-	-	-	-	-	-	-	-	-	-	+	-	-	+
8	9007	DEM	*5701		-	-	-	+	-	-	-	-	-	-	+	-	-	-	+	-
9	9026	YAR	*3801		-	-	-	-	-	-	-	-	-	-	-	-	-	-	+	-
10	9107	LKT3	*5401		-	-	-	-	-	-	-	+	+	-	-	-	-	-	-	+
11	9051	PITOUT	*4403		-	-	-	-	-	+	-	-	-	-	-	-	-	-	+	-
12	9052	DBB	*5701		-	-	-	+	-	-	-	-	-	-	+	-	-	-	+	-
13	9067	BTB	*2705		-	-	-	-	-	+	-	-	-	-	-	-	-	-	+	-
14	9071	OLGA	*1501	*1520	-	-	-	-	-	+	-	-	-	-	-	-	-	+	-	+
15	9075	DKB	*4001		-	-	-	-	+	+	-	-	-	-	-	-	-	-	-	+
16	9037	SWEIG007	*4002		-	-	-	-	+	+	-	-	-	-	-	-	-	-	-	+
17	9008	WILJON	*1801		-	-	-	-	-	-	-	-	-	-	-	-	+	-	-	+
18	9257	32367	*1401	*5601	-	-	-	-	-	-	-	-	-	+	-	-	-	-	-	+
19	9038	BM16	*1801		-	-	-	-	-	-	-	-	-	-	-	-	+	-	-	+
20	9059	SLE005	*4001		-	-	-	-	+	+	-	-	-	-	-	-	-	-	-	+
21	9064	AMALA	*1501		-	-	-	-	-	+	-	-	-	-	-	-	-	+	-	+
22	9056	KOSE	*3503		-	-	-	-	-	-	-	-	-	-	-	-	+	-	-	+
23	9124	IHL	*4002	*5602	-	-	-	-	+	+	-	-	+	-	+	-	-	-	-	+
24	9035	JBUSH	*3801		-	-	-	-	-	-	-	-	-	-	-	-	-	-	+	-
25	9049	IBW9	*1402		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	+
26	9285	WT49	*5801		-	-	-	+	-	-	-	-	-	-	-	+	-	-	+	-
27	9191	CH1007	*0705	*5101	-	-	+	+	-	-	-	-	-	-	-	-	+	-	+	+
28	9320	BEL5GB	*4402	*4403	-	-	-	-	-	+	+	-	-	-	-	-	-	-	+	-
29	9050	MOU	*4403		-	-	-	-	-	+	-	-	-	-	-	-	-	-	+	-
30	9021	RSH	*4201		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	+
31	9019	DUCAF	*1801		-	-	-	-	-	-	-	-	-	-	-	-	+	-	-	+
32	9297	HAG	*4102		-	-	-	-	+	+	-	-	-	-	-	-	-	-	-	+
33	9098	MT14B	*4001		-	-	-	-	+	+	-	-	-	-	-	-	-	-	-	+
34	9104	DHIF	*3801		-	-	-	-	-	-	-	-	-	-	-	-	-	-	+	-
35	9302	SSTO	*4402		-	-	-	-	-	+	+	-	-	-	-	-	-	-	+	-
36	9024	KT17	*1501	*3501	-	-	-	-	-	+	-	-	-	-	-	-	+	+	-	+
37	9065	HHKB	*0702		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	+
38	9099	LZL	*1501		-	-	-	-	-	+	-	-	-	-	-	-	-	+	-	+
39	9315	CML	*0801	*2705	-	-	-	-	-	+	-	-	-	-	-	-	-	-	+	+
40	9134	WHONP199	*1302	*4601	-	-	-	-	-	+	-	-	-	-	-	-	-	+	+	+
41	9055	H0301	*1402		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	+
42	9066	TAB089	*4601		-	-	-	-	-	-	-	-	-	-	-	-	-	+	-	+
43	9076	T7526	*4601		-	-	-	-	-	-	-	-	-	-	-	-	-	+	-	+
44	9057	TEM	*3801		-	-	-	-	-	-	-	-	-	-	-	-	-	-	+	-
45	9239	SHJO	*4201	*5001	-	-	+	-	+	+	-	-	+	-	-	-	-	-	-	+
46	9013	SCHU	*0702		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	+
47	9045	TUBO	*5101		-	-	+	+	-	-	-	-	-	-	+	-	+	-	+	-
48	9303	TER-ND	*3501	*4403	-	-	-	-	-	+	-	-	-	-	-	-	+	-	+	+

CERTIFICATE OF ANALYSIS

Olerup SSP® HLA-B low resolution SSP

Product number: 101.501-48/12 – including *Taq* pol.
 101.501-48u/12u – without *Taq* pol.
Lot number: 49F
Expiry date: 2010-December-01
Number of tests: 48 tests – Product No. 101.501-48
 12 tests – Product No. 101.501-12
Number of wells per test: 47 + 1

Well specifications:

Well No.	Production No.	Well No.	Production No.	Well No.	Production No.
1	2008-480-01	17	2008-480-17	33	2008-480-33
2	2008-480-02	18	2008-480-18	34	2008-480-34
3	2008-480-03	19	2008-480-19	35	2008-480-35
4	2008-480-04	20	2008-480-20	36	2008-480-36
5	2008-480-05	21	2008-480-21	37	2008-480-37
6	2008-480-06	22	2008-480-22	38	2008-480-38
7	2008-480-07	23	2008-480-23	39	2008-480-39
8	2008-480-08	24	2008-480-24	40	2008-480-40
9	2008-480-09	25	2008-480-25	41	2008-480-41
10	2008-480-10	26	2008-480-26	42	2008-480-42
11	2008-480-11	27	2008-480-27	43	2008-480-43
12	2008-480-12	28	2008-480-28	44	2008-480-44
13	2008-480-13	29	2008-480-29	45	2008-480-45
14	2008-480-14	30	2008-480-30	46	2008-480-46
15	2008-480-15	31	2008-480-31	47	2008-480-47
16	2008-480-16	32	2008-480-32		

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

Additional 5'-primers and 3'-primers in primer solutions 2, 3, 8, 10, 11, 14, 19, 20, 31, 40, 42, 43 and 45 were tested by separately adding one additional 3'-primer, respectively one additional 5'-primer. Additional 3'-primers in primer solutions 13, 24, 29 and 35 were tested by separately adding one additional 5'-primer. Additional 5'-primers in primer solutions 21 and 29 were tested by separately adding one additional 3'-primer.

The negative control primer pairs, **Production No. 2008-417-01**, can detect contamination with PCR products diluted 10^{-7} .

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

Date of approval: 2008-December-02

Approved by:

Quality Control, Supervisor

Declaration of Conformity

Product name: *Olerup* SSP® HLA-B low resolution

Product number: 101.501-48/12, 101.501-48u/12u

Lot number: 49F

Intended use: HLA-B low 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, 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, 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
2008-December-02

Olle Olerup
Managing Director

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