

Olerup SSP[®] HLA-B low resolution

Product number:	101.501-48/12 – including <i>Taq</i> pol.
Lot number:	63G
Expiry date:	2011-November-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. 63G.

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. 90F**) was made.

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

Well	5'-primer	3'-primer	rationale
5	-	Modified	Exchanged positive control primer pair, modified 3'-primer for improved specificity.
6	-	Modified	Modified 3'-primer for improved specificity.
9	-	-	Exchanged positive control primer pair.
10	Moved	Moved	Primer pair moved to well 14 for increased specificity.
14	Added	Added	Primer pair from well 10.
17	-	-	Exchanged positive control primer pair.
20	Exchanged	Exchanged	Exchanged primer pair for improved specificity.
26	-	Added	Primer added for the B*400205 allele.
27	Exchanged	Exchanged	Exchanged primer pair to decrease primer dimer formation.
40	Modified	-	Modified 5'-primer for improved specificity.

Change in revision R01 compared to R00:

1. The serological classification of the B*1518 allele has been corrected in the Specificity and Interpretation Tables.

Change in revision R02 compared to R01:

1. The HLA-B*5150 allele is amplified in primer mixes 30 and 36.

Change in revision R03 compared to R02:

1. The HLA-Cw*0312 and 0319 alleles are amplified in primer mix 41.

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

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

Length of PCR product	105	200	105	80	75	80
5'-primer¹	164	340	440	45	45	43
	5'-CAC ³	5'-Agg ³	5'-TTA ³	5'-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' in silver/gray ink.

Well No. 1 is marked with the Lot No. '63G'.

A faint row of numbers is seen between wells 1 and 2 or wells 7 and 8 of the PCR trays. These stem from the manufacture of the trays, and should be disregarded.

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

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

INTERPRETATION

Only HLA-B alleles will be amplified by the HLA-B low resolution typing kit, except that primer mix 1 will amplify the Cw*0223 allele, primer mix 3 will amplify the HLA-Cw*0305, Cw*0325 and Cw*0327 alleles, primer mix 4 will amplify the Cw*0130 allele, the Cw*0746 allele will be amplified by primer mix 8, primer mix 40 will amplify the Cw*150204 allele, primer mix 41 will amplify the Cw*0312 and Cw*0319 alleles, primer mix 43 will weakly amplify the Cw*0206 allele and primer mix 45 will amplify the Cw*0620 allele. Thus, the interpretation of HLA-B low resolution typings is only influenced by the Cw*0130, Cw*0206, Cw*0223, Cw*0305, Cw*0312, Cw*0319, Cw*0325, Cw*0327, Cw*0620, 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 October 2009¹ 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.

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¹HLA-B alleles listed on the IMGT/HLA web page 2009-October-19, release 2.27.0, www.ebi.ac.uk/imgt/hla.

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

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

DNA-based HLA-B typing resolution required:

B*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, 3930, 3932-3934, 3947 and 3950 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*180702 and 1829 and the B*3532, 3537, 3553N, 3564, 3566, 356801-356802 and 3599 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*180702 and 1829 and the B*3532, 3537, 3553N, 3564, 3566, 356801-356802 and 3599 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*4109 and the B* 4502 and 4503 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 5532 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 ^{4,5} alleles
1^{6,7}	110 bp	800 bp	7, 15, 37, 40, 41, 42, 48	*070201-071802, 0720-0732, 0734-0739, 0741-0747, 0749N, 0750, 0752, 0754-0759, 0761-0799, 9538, 3707, 4015, 4016, 4023, 4032, 4098, 4108, 420501, 420502, 4805, 4808, 4815, Cw*0223
2	215 bp	1070 bp	8, 15, 44	*080101-0825, 0827-0847, 9542, 4449, 5168
3	140 bp, 235 bp	1070 bp	7, 8, 13, 15, 35, 40, 4005, 44, 46, 53, 57	*0720, 0724, 0760, 0821, 0825, 130101-1304, 1306-1308Q, 1310-1323, 1325-1330, 1507, 1536 ^w , 1545, 1555, 1568, 1589 ^w , 9526, 3505, 3516, 3517, 3522, 3530, 3551, 3558, 3572, 3589, 3597, 4005, 4071, 4408 ^w , 4454, 4457 ^w , 4460, 4612, 4620, 5164, 5314, 5818, Cw*0305, 0325, 0327
4⁸	130 bp, 265 bp	1070 bp	13, 14, 15, 35, 40, 41, 44, 45, 47, 49, 50	*130101-1304, 1306-1313, 1315-1323, 1325-1330, 1401-1404, 1407N, 1409, 1411, 1412, 1414-1416, 1546, 1553, 9506, 1844, 3546, 3547, 3563, 400101-400108, 4007, 4010, 401401-4016, 4022N, 4023, 4025, 4030-4034, 4036, 4038, 4042, 4043, 4045, 4047-4049, 4051-4055, 4058-4063, 4065-4067, 4069, 407201-4073, 4076, 4077, 4079-4081, 4084, 4087, 4088, 4092, 4101-4112, 44020101-440306, 440308-4405, 4409-4439, 4441-4443, 4445-4456N, 4458N-4480, 4482, 4484-4488, 4501-4510, 47010101-4705, 490101-4902, 4904-4907, 500101-5002, 5004-5006, 5008, 5009, Cw*0130

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5⁹	185 bp, 235 bp	800 bp	14, 16, 27, 37, 38, 39, 47, 64, 67	*1401, 1407N, 1408, 1410, 1412, 1414, 2701-2706, 2708-2710, 2712, 2713, 2716-2718, 2720, 2723, 2726, 2727, 2729, 2731, 2735-2737, 2739- 2742, 2744-2746, 2748-2759N, 3702, 380101-3803, 3807-3820, 39010101, 39010102L, 390103- 390108, 390110, 390201, 3903, 3905-390602, 3907 [?] , 3908, 3909, 3911, 3914, 3915, 3918, 391902, 3922, 3924-3944, 3946-3948, 3950- 3954, 4704, 4705, 670101
6⁹	185 bp	800 bp	14, 35, 38, 39, 65	*140201, 140202, 1403-140602, 1409, 1411, 1413, 1415, 1416, 3526, 3805, 3904, 3907 [?]
7¹⁰	290 bp	1070 bp	15, 62, 63, 75, 76, 77, 46	*15010101-150103, 150106-150202, 150303-1508, 151101-151103, 1512-1515, 15170101-151702, 1519-1521, 1524-1528, 1530-1536, 153801-1540, 1542-1546, 1548, 1550, 1555-1558, 1560, 1563, 1565, 1566, 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, 9535-9550, 9552, 9554, 9555, 9557, 9559, 9560, 9562-9572, 9574, 9575, 9577, 9578, 460101-4622
8	165 bp, 220 bp, 330 bp	1070 bp	8, 15, 37, 40, 41, 42, 44, 45, 51, 56, 57, 62, 70, 71, 72	*080101-0805, 0808N-081203, 0815-0819N, 0821-0824, 0826, 0827, 0829-0836, 0838, 0839, 0841- 0847, 150301-150303, 1509, 1510, 151801-151803, 1523, 1529, 1537, 1546, 1547, 1549, 1551-1554, 1561, 1562, 1564, 1569, 1572, 1574, 1580, 1583, 1590, 1591, 1593, 1598, 1599, 9503, 9506, 9508, 9514, 9515, 9519, 9523, 9524, 9527, 9531-9534, 9543, 9551, 9553, 9556, 9558, 9561, 9573, 9576, 3587, 3712, 4012, 4101- 410302, 4105-4109, 4111, 4112, 420101-4202, 4204-4208, 4210- 4213, 4414, 4415, 4418, 4420, 4462, 4501-4510, 5108, 5120, 5136, 5144N, 5520, 5613, 5709, 8201, 8202, Cw*0746

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9¹⁰	165 bp, 390 bp	1070 bp	15, 35, 40, 51, 52, 56, 58, 62, 63, 70, 78	*150102, 1509, 1516-151702, 1567, 1595, 9562, 9568, 9577, 350110, 350402, 4026, 4028, 4462, 510101- 510103, 510105-510203, 5103- 510902, 5111N, 5112, 511302, 5114, 5117-5120, 5122, 5123, 5126- 5130, 5132, 5133, 5137-5141N, 5143, 5144N, 5146, 5148-5161, 5163-5180, 5183, 5184, 520101- 520104, 5202-5207, 5209-5213, 5215, 5216, 560501-5606, 5621, 5808, 7801-7806
10	180 bp	800 bp	13, 15, 40, 55, 62, 70, 71, 72, 75	*0778, 130101-130206, 1307N- 1309, 1311, 1314-1320, 132201- 1323, 1325, 1327-1330, 4048, 4510, 4907, 5509, 5522, 5524
11⁶	105 bp, 195 bp	1070 bp	7, 8, 15, 27, 38, 39, 40, 44, 45, 48, 55, 72	*0727, 0750, 0804, 0817, 150301- 150303, 1547, 1549, 1554, 1561, 1562, 1564, 1568, 1569, 1591, 1598, 9503, 9523, 9527, 9531, 9532, 9551, 9556, 9558, 9573, 1837, 2718, 2729, 3803, 390201, 390202, 3908, 391301, 391302, 3923, 3939, 3949, 4012, 4046, 4093, 4211, 4410, 4415, 4418, 4440, 4444, 4501, 4505-4507, 480101-4805, 4807-4820, 5002, 5216, 5518, 8201, 8202
12	280 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, 0837, 1304, 1310, 1326, 15010101- 150104, 150106-1508, 151101- 1516, 151801-1521, 1523-1529, 1531-1536, 153801-1540, 1543, 1544, 1546, 1547, 1549-1557, 1560- 1562, 1564-1572, 1574-1576, 157801-1582, 1584, 1585, 1587- 1589, 1591-1598, 9501-9529, 9531, 9532, 9534-9536, 9538-9549N, 9551-9561, 9563-9567, 9569-9576, 9578, 180101-1815, 1817N-1825, 1827-1840, 1842-1845, 2741, 350101-350113, 3505, 3507- 350804, 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, 3589-3594, 3597, 3599, 3907, 3943,

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				4003, 4020, 4038, 4052, 4059, 4060, 4209, 4417, 4443, 4509, 460101-4610, 4612-4617, 4619-4622, 4802, 4814, 4904, 4905, 5137, 5145, 5163, 530101-5303, 5305, 5306, 5308-5318, 5406, 5409, 5414, 5514, 5523, 5532, 5603, 5609, 5618, 570101-570105, 5706, 5708, 5710, 5711, 5713-5716, 5718-5726, 580101-5802, 5804-5807, 5809-5819, 5821-5824
13	195 bp	1070 bp	15, 35, 37, 38, 44, 58, 76	*1512, 1514, 1519, 1591, 9531, 9561, 3545, 3571, 370101-3709, 3712, 3713, 3715-3719, 3817, 4417, 4443, 4509, 4617, 5807
14⁶	105 bp, 395 bp, 435 bp	1070 bp	7, 15, 41, 42, 59, 62, 63, 70, 71, 77	*0704, 0725, 1509, 1510, 1513, 1516-151803, 1521, 1523, 1524, 1537, 1544, 1551, 1552, 1566, 1567, 1572, 1580, 1587, 1590, 1593, 1595, 1599, 9508, 9514, 9515, 9519, 9524, 9533, 9534, 9553, 9557, 9561, 9562, 9568, 9576, 9577, 4108, 420501, 420502
15⁶	115 bp	1070 bp	18	*180101-180701, 1808-1815, 1817N-1828, 1830-1836, 1838-1845
16⁶	80 bp	1070 bp	27, 40, 44	*0773, 2701-2721, 2723-2751, 2753-2759N, 4046, 4093, 4440, 4444
17	150 bp	800 bp	13, 15, 27, 35, 37, 39, 40, 44, 48, 51, 53, 55, 56, 57, 58, 62, 75, 77	*130101, 130102, 1306, 1307N, 1312, 1313, 1317, 1320, 132201-1323, 1325, 1326, 1328, 1329, 1410, 150201, 150202, 1513, 1520, 1521, 152501, 152502, 1536, 1544, 1562, 1577, 1580, 1585, 1588, 1589, 9506, 9512, 9521, 9539, 9544, 9554, 9570, 1822, 2719, 2730, 350101-350403, 3506-350804, 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, 3590-3596, 3598, 370101-370107, 3703N-3706, 3708, 3710, 3711, 3713-3719, 3820, 3942, 4028, 44020101-4414, 4416, 4417, 4419N, 4421-4430, 4432-4440, 4442-4446, 4448-4452N, 4455-446402, 4466-4488, 4802, 5104, 5142, 5146, 5156,

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				530101-5313, 5315-5319, 5514, 5609, 5611, 5612, 570101-570104, 5702-5710, 5712, 5714-5720, 5722-5726, 580101, 580102, 5804, 5805, 5809-5815, 5817N, 5819, 5821-5824, 8301
18	135 bp	1070 bp	8, 18, 35, 37, 39, 56, 78	*0765, 0832, 180101-1808, 1810-1815, 1817N-1836, 1838-1845, 350101-3518, 352001-3524, 3528-3545, 3548, 3550-3555, 3557-3562, 3564-3572, 3574-3599, 3711, 391901, 391902, 5606, 7801-7805
19⁷	245 bp, 400 bp	1070 bp	15, 62, 63, 70, 71, 72, 75, 76, 77, 40, 44	*15010101-150104, 150106-1521, 1523-1540, 1542-1558, 1560-1567, 1569-1575, 1576 ^w , 1577-1599, 9501-9529, 9531-9578, 4012, 4410, 8201, 8202
20	210 bp	800 bp	7, 8, 15, 18, 37, 38	*0727, 370101-3719, 3817
21	170 bp	800 bp	15, 35, 38, 39, 67	*1569, 3535, 380101-3809, 3811-3820, 39010101, 39010102L, 390103-3920, 3922-3924, 3926-3929, 3931, 3935, 3937-3942, 3944-3946, 3948, 3949, 3951-3954, 5820, 670101-6702
22⁶	110 bp	1070 bp	38	*380101-3803, 3805, 3808-3820
23	395 bp	1070 bp	14, 38, 39, 64, 65	*0769, 0785, 1401-1416, 380101-380202, 3804, 3805, 3808-3820, 39010101, 39010102L, 390103-390110, 3903-3907, 3909, 3911, 3912, 3914, 3915, 3918-391902, 3922, 3924-3938Q, 3940N-3948, 3950-3954
24	425 bp	1070 bp	7, 8, 14, 39, 40, 41, 42, 45, 48, 50, 60, 64, 65, 67, 73	*070201-0726, 0728-0735, 0737, 0739-0764, 0766-0780, 0782-0799, 080101-080109, 0804-0835, 0837-0847, 1401-1416, 39010101, 39010102L, 390103-3920, 3922-3954, 400101-400108, 4007, 4009 [?] , 4011 [?] , 401401 [?] -4015 [?] , 4016, 4018 [?] , 4021 [?] , 4022N [?] , 4023, 4024 [?] -4038 [?] , 4042 [?] -4046 [?] , 4048 [?] -4050 [?] , 4051, 4052 [?] -4058 [?] , 4059, 4060, 4061 [?] -4065 [?] , 4066, 4067 [?] -4069 [?] , 4071 [?] , 407201-4073, 4074 [?] , 4075 [?] , 4077, 4078 [?] , 4079, 4080 [?] -4088 [?] , 4090 [?] -4093 [?] , 4095 [?] , 4098 [?] , 4101-4112, 420101-4202, 4204-4213, 4501-

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				4510, 480101-4817, 4819, 4820, 500101-5002, 5004-5009, 670101- 6702, 7301, 8102
25⁷	175 bp	1070 bp	15, 40, 44, 46, 48, 60	*9516, 9524, 400101-400106, 400108, 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, 4092, 4431, 4606, 480301, 480302
26¹⁰	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, 4089-4091, 4094-4098
27⁶	105 bp	1070 bp	7, 8, 41, 42, 55	*0704, 0725, 080101-0805, 0807- 081203, 0814-0819N, 0821-0824, 0826-0839, 0841-0847, 3587, 4101- 4108, 4110-4112, 420101-4202, 4204-4207, 4209-4213, 5520
28	325 bp	1070 bp	7, 15, 27, 42, 45, 46, 54, 55, 56, 67, 73, 81	*070201-070218, 0704-0707, 0709- 0712, 0713 ^w , 0714, 0715 ^w , 0717- 0726, 0728-0731, 0733-0736, 0739- 0746, 0747 ^w , 0748, 0749N, 0751- 0768, 0770-0784, 0786-0799, 1576, 9501, 2701-2711, 2713-2715, 2717, 2719-2721, 2724-2728, 2730-2738, 2740-2758, 3576, 420101-4202, 4204-4206, 4208-4210, 4212, 4213, 4506, 460101, 460102, 4602 ^w , 4603- 4622, 5401-5419, 550101-5505, 5507-5517, 5519-5538, 560101- 5616, 5618-5622, 5624-5626, 670101, 670102, 6702 ^w , 7301, 8101- 8104N, 8201, 8202, 8301
29^{6,11}	115 bp, 195 bp, 225 bp, 260 bp	1070 bp	35, 37, 44, 47, 51, 57	*3538, 3545, 3571, 370101-370107, 3703N-3706, 3708, 3710-3719, 4213, 44020101-4414, 4416, 4417, 4419N-4436, 4438-4463, 4465- 4488, 5142, 5707, 5709, 5724, 8301
30	215 bp	800 bp	8, 12, 15, 41, 42, 44, 45, 51, 52, 53, 55, 56, 58	*0809, 1583, 4101, 4105-4107, 4109, 4112, 4204, 4406, 4415, 4418, 4420, 4501-4510, 510101, 510103- 510108, 510110-510201, 510203- 5104, 5106-510901, 5110-5114,

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				5116-512402, 5126-5146, 5148-5153, 5155-5177, 5179-5184, 520102, 520104, 5202, 5203, 520601, 520602, 5209, 5306, 5520, 5613, 5808
31	130 bp, 270 bp	1070 bp	18, 35, 37, 40, 46, 51, 53, 57, 58	*1410, 1557 ^w , 1822, 3521, 3524, 3581, 3596, 3704, 4028, 460101-4622, 5104, 5146, 5156, 5302, 5306, 5714, 5809
32⁶	90 bp , 410 bp	1070 bp	27, 35, 47, 54, 55, 56, 81	*0765, 2702-2711, 2713-2715, 2717, 2719-2721, 2724-2728, 2730-2738, 2740-2758, 3576, 47010101-4703, 5401-5419, 550101-5505, 5507-5517, 5519-5538, 560101-5616, 5618-5622, 5624-5626, 8101, 8201, 8202, 8301
33⁶	90 bp, 175 bp	1070 bp	15, 27, 35, 40, 48, 62, 75, 77, 81	*150201, 150202, 1508, 151101-151104, 1513, 1515, 1521, 1531, 1544, 1555, 1576 ^w , 1588, 1589, 9512, 9521, 9539, 9544, 9548, 9570, 2724, 3546, 4031, 4045, 4080, 480101, 480102, 4804, 4806, 4807, 4809, 4811, 4815, 4816, 4818-4820, 5535 ^w , 8101-8104N
34	145 bp, 430 bp	1070 bp	40, 44, 49	*4013, 4019, 4418, 4425, 4450, 490101, 490102, 4904-4907, 5412, 5621, 5901-5905
35⁶	120 bp, 210 bp	800 bp	13, 15, 45, 49, 50, 51, 52, 55, 56, 58, 62, 63, 78	*0778, 0784, 1316, 1504 ^w , 1516, 1542, 1567, 1595, 9537 ^w , 4095, 490101, 4902-4907, 500101-5002, 5004-5009, 510101-5103, 5105, 5107-510902, 5111N-5114, 5116-512402, 5126-5141N, 5143, 5144N, 5148-5155, 5157, 5158, 5160, 5161 ^w , 5163, 5165-5180, 5182-5184, 520101-5216, 550101-550106, 5503, 5505, 5509, 5511, 5515, 5517, 5521 ^w , 5524, 5525, 5528, 5529, 5531, 5533, 5536, 5538, 560501-5606, 5621, 5625, 5808, 7801-7806
36	430 bp	1070 bp	27, 40, 44, 45, 51, 52, 53, 57, 58, 59	*2702, 2730, 2753, 2757, 4013, 4019, 4406, 4425, 4450, 510101-512402, 5126-5146, 5148-5153, 5155-5177, 5179-5184, 520101-5216, 530101-5302, 5304-5308, 5310, 5314-5319, 570101-5711,

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				5713-5726, 580101-5802, 5804-5816, 5818-5824
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, 4077-4092, 4094, 4095, 4097, 4098, 4101-4104, 4105 [?] , 4106-4112, 4409, 4446, 4475, 4501-4510, 4702, 4703 ^w , 500101-5002, 5004, 5005, 5007-5009
38	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, 0838, 130101-1304, 1306, 1308Q-1323, 1325-1330, 15010101-150104, 150106-150112, 150301-1507, 1512, 1514, 1519, 1520, 1524-152703, 1530, 1532-1536, 153801-1540, 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, 9501-9507, 9509-9511N, 9513, 9516-9518, 9522, 9523, 9525-9529, 9531, 9532, 9535-9538, 9540-9542, 9545-9547, 9550-9552, 9554-9560, 9563-9567, 9569, 9571-9575, 9578, 1812, 2701-2721, 2724-2759N, 3510, 3513, 3516, 3528, 3563, 3569, 3580, 370101-3707, 3709-3719, 3803, 3804, 390201, 390202, 3908, 391301, 391302, 3922, 3923, 3949, 400101-4007, 4009-4016, 4018-4024, 4026-4040, 4042-4067, 4070-4098, 4101-4112, 4211, 44020101-4405, 4407-4411, 4413-4488, 4501-4510, 47010101-4705, 480101-4805, 4807-4815, 4817-4820, 490101-4907, 500101-5002, 5004-5009, 520101-5216, 5317, 5518, 5534, 7805, 7806
39	160 bp, 215 bp	1070 bp	15, 37, 44, 54	*150104, 370104, 4094, 44020101-440210, 4406, 4408, 4409, 4411, 4412, 4416, 4419N-4424, 4427, 4433, 4434, 4441, 4444, 4448, 4449, 4452N, 4453, 4455, 4459, 4463, 4466-4468, 4471-4474, 4480, 4483, 4484, 4486, 4487, 5401-5419, 8301
40⁹	180 bp,	1070 bp	13, 15, 18,	*0765, 1306, 1542, 1586, 1804,

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	210 bp		35, 39, 40, 54, 55, 56, 59, 78	3560, 3917, 4058, 4508, 4618, 5401, 5402, 5405N, 5407, 5408N, 5410, 5412, 5413, 5416-5419, 550101- 5503, 5505, 5507, 5510-5512, 5515, 5516, 5518, 5519, 5521, 5525, 5526, 5529-5531, 5533-5538, 560501, 5606, 5610, 5623, 5901, 5905, 7801, 780202, 7803, Cw*150204
41	180 bp	1070 bp	13, 15, 40, 44, 45, 46, 49, 50, 51, 54, 56	*1303, 1573, 4071, 4410, 4415, 4418, 4501, 4504-4507, 4611, 490101-4903, 4906, 500101-5002, 5004-5008, 5115, 5162, 5403, 560101-5602, 5604, 5607, 5608, 5613, 5614, 5616, 5617, 5620, 5624-5626, 5904, 8201, 8202, Cw*0312, Cw*0319
42^{6,7}	90 bp, 240 bp	800 bp	55, 57	*5514, 570101-5715, 5717-5719, 5721-5726
43⁶	90 bp	1070 bp	13, 15, 39, 40, 56, 58	*1311, 151803, 1573, 3917, 4048, 4071, 5162, 5602, 5604, 5610, 580101-5802, 5804-5824, Cw*0206^w
44⁶	95 bp	1070 bp	8, 18, 35, 37, 38, 39, 44, 51, 52, 53, 78	*0765 ^w , 0832, 180101-1811, 1813- 1815, 1817N-1836, 1838-1845, 350101-350902, 3511-351202, 351401-3515, 3517, 3518, 352001- 3524, 3527, 3529-3545, 3548, 3550- 3562, 3564-356802, 3570-3572, 3574, 3575, 3576 ^w , 3577-3579, 3581-3599, 3708, 3806, 3807, 391901, 391902, 4406, 510101- 512402, 5126-5146, 5148-5184, 530101-5316, 5318, 5319, 5606 ^w , 7801-7804
45^{6,7}	115 bp, 150 bp	1070 bp	15, 18, 27, 35, 39, 46, 54, 55, 56, 62, 73, 75, 76	*15010101-150104, 150106-150112, 1504, 1507, 1508, 151101-1512, 1514, 1515, 1519, 1524, 1526N- 1528, 1530, 1532, 1534, 1535, 153801, 153802, 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, 9542-9549N, 9552, 9554, 9557, 9559, 9560, 9563-9567, 9569, 9571, 9572, 9574, 9575, 9578, 1819, 2725, 351401, 351402, 3543, 3544, 3562, 3567, 3579, 3586, 3918, 3936, 460101- 4602, 4604, 4605, 4607N, 4609, 4610, 4612, 4614-4617, 4620, 4622, 5161, 5406, 5521, 5603, 7301, Cw*0620
46	360 bp	1070 bp	Bw4 ¹²	
47	350 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 lengths of the specific PCR product(s) of the alleles amplified by these primer mixes are given.

Nonspecific amplifications, i.e. a ladder or a smear of bands, may sometimes be seen. GC-rich primers have a higher tendency of giving rise to nonspecific amplifications than other primers, 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 5, 6, 10, 17, 20, 21, 30, 35 and 42 contain the primer pair giving rise to the shorter, 800 bp, internal positive control band in order to allow kit identification. In the presence of a specific amplification the intensity of the control band often decreases.

³The serological reactivity of all HLA-B alleles is not known. In this table we 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, 3930, 3932-3934, 3947 and 3950 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*180702 and 1829 and the B*3532, 3537, 3553N, 3564, 3566, 356801-356802 and 3599 alleles give rise to identical amplification patterns with the HLA-B low resolution primer set. These alleles can be separated by the respective high resolution primer sets.

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The B*4109 and the B* 4502 and 4503 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, 5508, 5513 and 5527 and the B* 5615, 5619N and 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 5532 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.

⁵Due to sharing of sequence motifs, non-HLA-B alleles will be amplified by a few primer mixes; primer mix 1 will amplify the Cw*0223 allele, primer mix 3 will amplify the HLA-Cw*0305, Cw*0325 and Cw*0327 alleles, primer mix 4 will amplify the Cw*0130 allele, the Cw*0746 allele will be amplified by primer mix 8, primer mix 40 will amplify the Cw*150204 allele, primer mix 41 will amplify the Cw*0312 and Cw*0319 alleles, primer mix 43 will weakly amplify the Cw*0206 allele and primer mix 45 will amplify the Cw*0620 allele. Furthermore, the Cw*1701 and Cw*1702 alleles might be faintly amplified by primer mix 25.

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

⁷Primer mixes 1, 19, 25, 42 and 45 may give rise to a primer oligomer artifact.

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 and 40 may yield less specific PCR product than the other HLA-B low resolution primer mixes.

¹⁰Primer mixes 7, 9 and 26 might give rise to non-specific amplification products, most pronounced in primer mix 9. Primer mix 9 may furthermore faintly amplify the B*57 and B*58 alleles.

¹²Primer mix 29 might generate a false band of about 500 base pairs. This band should be disregarded when interpreting HLA-B low resolution typings.

¹³The 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.

‘w’, might be weakly amplified.

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.	110	215	140	130	185	185	290	165	165	180	105	280	195	105	115	80	150	135	245	210	170	110	395	425
PCR product(s)			235	265	235			330	390		195			435					400					
Length of int. pos. control ¹	800	1070	1070	1070	800	800	1070	1070	1070	800	1070	1070	1070	1070	1070	1070	800	1070	1070	800	800	1070	1070	1070
5'-primer(s) ²	5'-TgA [*] 527	5'-TCg [*] 97	5'-ggC [*] 209	5'-CCg [*] 103	5'-CCT [*] 103	5'-CCg [*] 103	5'-ggA [*] 45	5'-ggA [*] 45	5'-ggA [*] 45	5'-TTA [*] 420	5'-AgA [*] 206	5'-gTC [*] 419	5'-TCT [*] 142	5'-ggA [*] 45	5'-Cgg [*] 161	5'-gCT [*] 167	5'-TCA [*] 355	5'-gAC [*] 206	5'-ggA [*] 45	5'-TCT [*] 142	5'-ggC [*] 409	5'-gAA [*] 246	5'-ggC [*] 44	5'-ggC [*] 44
3'-primer(s) ³	5'-gCT [*] 605	5'-Tgg [*] 272	5'-gTg [*] 309	5'-CgT [*] 193	5'-TAT [*] 246	5'-TAT [*] 246	5'-Tgg [*] 165	5'-CCT [*] 206	5'-TCC [*] 266	5'-CTC [*] 559	5'-Tgg [*] 272	5'-TAT [*] 3 nd I	5'-gTC [*] 301	5'-TgC [*] 272	5'-TCT [*] 234	5'-TCT [*] 204	5'-gCT [*] 463	5'-ggC [*] 302	5'-gTT [*] 259	5'-ggg [*] 311	5'-ggT [*] 544	5'-ggA [*] 317	5'-TgC [*] 272	5'-ggT [*] 302
	5'-TgA [*] 272	5'-CAg [*] 559	5'-CgT [*] 193	5'-gTg [*] 583	5'-TAT [*] 246			5'-gTC [*] 538	5'-CAg [*] 559		5'-gCg [*] 572		5'-gTC [*] 570	5'-ATC [*] 309					5'-TCC [*] 266	5'-ggg [*] 311				5'-ggC [*] 302
													5'-CCg [*] 572	5'-gCT [*] 605					5'-TgA [*] 272	5'-gTC [*] 538				
																			5'-gTA [*] 292					
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

[illegible]

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Well No.		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24
HLA-B allele ⁴	ser. ⁵																								
*070201-070218, 070501-0707, 0710, 0712, 0714, 071801, 071802, 0721-0723, 0726, 0728-0731, 0734, 0735, 0739, 0741-0746, 0749N, 0752, 0755-0759, 0761-0764, 0766- 0768, 0770-0772, 0774-0777, 0779, 0780, 0782, 0783, 0786-0799	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, 0747	-	1																							24
*0719, 0733, 0740, 0748, 0751, 0753	-																								24
*0720, 0724	-	1		3																					24
*0727	-	1									11								20						
*0736, 0781	-	1																							
*0738	-	1																							
*0750	-	1									11														24
*0754	-	1																							24
*0760	-			3																					24
*0765	-	1																18							
*0769, 0785		1																					23	24	
*0773		1													16										24
*0778		1								10															24
*0784		1																							24
*080101-080109, 0805, 0808N, 0810- 081203, 0815, 0816, 0818, 0819N, 0822- 0824, 0827, 0829- 0831, 0833, 0834, 0839, 0841-0847	B8, Null		2						8																24
*0802, 0803	B8		2						8																
*0804	-		2						8			11													24
*0806, 0813, 0820, 0840	B8		2																						24
*0807, 0814	-		2																						24

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25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47		Well No.			
																							ser. ⁵	HLA-B allele ⁴			
			28																			47	B7	*070201-070218, 070501-0707, 0710, 0712, 0714, 071801, 071802, 0721-0723, 0726, 0728-0731, 0734, 0735, 0739, 0741-0746, 0749N, 0752, 0755-0759, 0761-0764, 0766-0768, 0770-0772, 0774-0777, 0779, 0780, 0782, 0783, 0786-0799			
																					47	B7, B703	*0703, 0708, 0716, 0732, 0737				
		27	28																			47	B7	*0704, 0725			
			28																			47	B7	*0709, 0711, 0717			
			w																			47	-	*0713, 0715, 0747			
			28																			47	-	*0719, 0733, 0740, 0748, 0751, 0753			
			28																			47	-	*0720, 0724			
																						46	-	*0727			
			28																			46	-	*0736, 0781			
																						46	-	*0738			
																						47	-	*0750			
			28										38									47	-	*0754			
			28																			47	-	*0760			
			28				32								40				w			47	-	*0765			
																						47		*0769, 0785			
			28																			47		*0773			
			28							35												47		*0778			
			28							35												47		*0784			
		27																							47	B8, Null	*080101-080109, 0805, 0808N, 0810-081203, 0815, 0816, 0818, 0819N, 0822-0824, 0827, 0829-0831, 0833, 0834, 0839, 0841-0847
		27																				46	B8	*0802, 0803			
			27																			47	-	*0804			
																						47	B8	*0806, 0813, 0820, 0840			
			27																			47	-	*0807, 0814			

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*0809	-	2			8															24
*0817	-	2			8		11													24
*0821		2	3		8															24
*0825	-	2	3																	24
*0826, 4207	-				8															24
*0828, 0837	-	2					12													24
*0832	-	2			8							18								24
*0835	-	2			8		12													24
*0836	-	2			8															
*0838	-	2			8															24
*130101, 130102, 1317, 1320, 132201- 1323, 1325, 1328, 1329	B13		3	4			10					17								
*130201-130206, 1308Q, 1315, 1318, 1319, 1327, 1330	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			10													
*1321	-		3	4																
*1326			3	4				12				17								
*1401, 1407N, 1412, 1414	B64			4	5														23	24
*140201, 140202, 1403, 1404, 1409, 1411, 1415, 1416	B65			4		6													23	24
*140203	-			4															23	24
*1405-140602, 1413	-					6													23	24
*1408, 3925N, 3930, 3932-3934, 3947, 3950					5														23	24
*1410					5							17							23	24

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	27	30							47	-	*0809
	27					38			47	-	*0817
	27								47		*0821
									47	-	*0825
	27								47	-	*0826, 4207
	27								47	-	*0828, 0837
	27							44	47	-	*0832
	27								47	-	*0835
	27								47	-	*0836
	27					38			47	-	*0838
						38			46	B13	*130101, 130102, 1317, 1320, 132201- 1323, 1325, 1328, 1329
						38			46	B13	*130201-130206, 1308Q, 1315, 1318, 1319, 1327, 1330
						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
						38			46		*1326
									47	B64	*1401, 1407N, 1412, 1414
									47	B65	*140201, 140202, 1403, 1404, 1409, 1411, 1415, 1416
									47	-	*140203
									47	-	*1405-140602, 1413
									47		*1408, 3925N, 3930, 3932-3934, 3947, 3950
		31							47		*1410

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*15010101, 15010102N, 150103, 150106-150112, 1526N-152703, 1532, 1534, 1535, 153801, 153802, 1550, 1556, 1560, 1570, 1571, 1575, 1579N, 1581, 1582, 1592, 1594N, 1596, 1597, 9502, 9504, 9505, 9509- 9511N, 9513, 9517, 9518, 9522, 9525, 9528, 9529, 9535, 9540, 9545-9547, 9552, 9559, 9560, 9563-9567, 9569, 9571, 9572, 9574, 9575, 9578	B62, Null, B15					7				12							19				
*150102	B62					7		9		12							19				
*150104	B62									12							19				
*150201, 150202, 1588, 9512, 9521, 9539, 9570	B75					7				12						17	19				
*150301, 150302, 1547, 1549, 1561, 1598, 9503, 9523, 9527, 9532, 9551, 9556, 9558, 9573	B72						8			11	12						19				
*150303	B72					7	8			11	12						19				
*1504	B62					7				12							19				
*1505, 1506, 1533, 1539, 1540, 1565, 157801, 157802, 1584, 9507, 9536, 9541, 9555	B62, B15					7				12							19				
*1507, 9526	B62			3		7				12							19				
*1508, 151101- 151103, 1515, 9548	B75					7				12							19				
*1509	B70						8	9				14					19				
*1510, 1537, 1590, 1599, 9533	B71						8					14					19				
*151104	-									12							19				
*1512, 1514, 1519	B76					7				12	13						19				
*1513	B77					7				12		14			17		19				
*1516, 1567, 1595	B63							9		12		14					19				

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*15170101-151702, 9562, 9568, 9577	B63			7	9		14		19		
*151801, 151802, 1551, 1552, 1572, 1593, 9508, 9514, 9519, 9534, 9553, 9576	B62, B70, B71			8		12	14		19		
*151803	-			8		12	14		19		
*1520, 152501, 152502	B62			7		12		17	19		
*1521, 1544	B75			7		12	14	17	19		
*1523, 9515	-			8		12	14		19		
*1524, 1587, 9557	B62			7		12	14		19		
*1528, 9520, 9549N	B15			7		12			19		
*1529	B15			8		12			19		
*1530, 1558, 1563	B62, B15			7					19		
*1531	B75			7		12			19		
*1536	-	w		7		12		17	19		
*1542	-			7					19		
*1543	-			7		12			19		
*1545	B62	3		7					19		
*1546	B72		4	7	8	12			19		
*1548, 9550	B62			7					19		
*1553	-		4	8		12			19		
*1554	-			8		11 12			19		
*1555	-	3		7		12			19		
*1557	-			7		12			19		
*1562	-			8		11 12		17	19		
*1564	-			8		11 12			19		
*1566	-			7		12	14		19		
*1568	-	3				11 12					
*1569	-			8		11 12			19	21	
*1573	-			7					19		
*1574	-			8		12			19		
*1576	-			7		12			w		
*1577	-			7				17	19		
*1580	-			8		12	14	17	19		
*1583	-			7 8					19		
*1585, 9554	-			7		12		17	19		
*1586	-			7					19		
*1589	-	w		7		12		17	19		
*1591, 9531	-			8		11 12 13			19		
*9501	-			7		12			19		
*9506	-		4	7 8		12		17	19		
*9516	-			7		12			19		

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								46	B63	*15170101-151702, 9562, 9568, 9577		
									47 B62, B70, B71	*151801, 151802, 1551, 1552, 1572, 1593, 9508, 9514, 9519, 9534, 9553, 9576		
							43		47	-	*151803	
						38			47	B62	*1520, 152501, 152502	
				33					47	B75	*1521, 1544	
								46		-	*1523, 9515	
						38		45	46	B62	*1524, 1587, 9557	
								45	47	B15	*1528, 9520, 9549N	
									47	B15	*1529	
						38		45	47	B62, 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, 9550	
						37	38	45	47	-	*1553	
						38		45	47	-	*1554	
				33					47	-	*1555	
			w			38		45	47	-	*1557	
						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			w				45	47	-	*1576
						38			45	47	-	*1577
										47	-	*1580
			30			38				47	-	*1583
						38			45	47	-	*1585, 9554
						38	40			47	-	*1586
				33					46		-	*1589
						38				47	-	*1591, 9531
			28			38			45	47	-	*9501
						37	38			47	-	*9506
25						38				47	-	*9516

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*9524	-				8			12	14			19			
*9537	-				7							19			
*9538	-	1			7			12				19			
*9542	-		2		7			12				19			
*9543	-				7	8		12				19			
*9544	-				7			12			17	19			
*9561	-				8			12	13	14		19			
*180101-1803, 1805-180701, 1808, 1810, 1811, 1813-1815, 1817N, 1818, 1820, 1821, 1823N-1825, 1827, 1828, 1830-1836, 1838-1840, 1842, 1843, 1845	B18							12		15		18			
*1804	-							12		15		18			
*180702, 1829, 3532, 3537, 3553N, 3564, 3566, 356801, 356802, 3599	-							12				18			
*1809	-							12		15					
*1812	-							12		15		18			
*1819	-							12		15		18			
*1822	-							12		15	17	18			
*1826, 1841	-									15		18			
*1837								11	12						
*1844				4				12		15		18			
*2701	B27				5							16			
*2702, 2753, 2757	B27				5							16			
*2703-2706, 2709, 2710, 2713, 2717, 2720, 2727, 2731, 2735-2737, 2745, 2746, 2748-2751, 2754-2756, 2758	B27				5							16			
*2707, 2711, 2714, 2715, 2721, 2728, 2732, 2734, 2738, 2743, 2747	B27											16			
*2708, 2726, 2740, 2742, 2744	B2708				5							16			
*2712	-				5							16			
*2716, 2739, 2759N	-				5							16			
*2718	-				5			11				16			
*2719	-											16	17		
*2723	-				5							16			

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25														47	-	*9524	
							w		38					45	47	-	*9537
									38						47	-	*9538
									38					45	47	-	*9542
								37						45	47	-	*9543
						33								45	47	-	*9544
															47	-	*9561
													44		47	B18	*180101-1803, 1805 180701, 1808, 1810, 1811, 1813-1815, 1817N, 1818, 1820, 1821, 1823N-1825, 1827, 1828, 1830- 1836, 1838-1840, 1842, 1843, 1845
										40			44		47	-	*1804
													44		47	-	*180702, 1829, 3532, 3537, 3553N, 3564, 3566, 356801, 356802, 3599
													44	46		-	*1809
								38							47	-	*1812
													44	45	47	-	*1819
				31									44		47	-	*1822
													44		47	-	*1826, 1841
															47		*1837
													44		47		*1844
		28						38						46		B27	*2701
		28			32		36	38						46		B27	*2702, 2753, 2757
		28			32			38						46		B27	*2703-2706, 2709, 2710, 2713, 2717, 2720, 2727, 2731, 2735-2737, 2745, 2746, 2748-2751, 2754-2756, 2758
		28			32			38						46		B27	*2707, 2711, 2714, 2715, 2721, 2728, 2732, 2734, 2738, 2743, 2747
		28			32			38							47	B2708	*2708, 2726, 2740, 2742, 2744
								38							47	-	*2712
								38						46		-	*2716, 2739, 2759N
								38							47	-	*2718
		28			32			38						46		-	*2719
														46		-	*2723

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*2724	-						16				
*2725	-						16				
*2729	-		5			11	16				
*2730	-						16	17			
*2733	-						16				
*2741	-		5			12	16				
*2752	-		5								
*350101-350109, 350111-350113, 3507- 350804, 3511, 3515, 352001, 352002, 3523, 3529, 3540N- 3542, 3548, 3550, 3552, 3554, 3557, 3561, 3577, 3578, 3582, 3590-3594	B35					12		17 18			
*350110	-				9	12		17 18			
*350201-350401, 350403, 3506, 351201, 351202, 3533, 3534, 3536, 3539, 3555, 3559, 3565Q, 3570, 3574, 3583-3585, 3595, 3598	B35							17 18			
*350402	-				9			17 18			
*3505, 3551, 3558, 3572, 3589, 3597	B35	3				12		18			
*350901, 350902, 3518, 3531, 3575, 3588	B35							18			
*3510, 3528, 3569, 3580	B35					12		17 18			
*3513	B35							17 18			
*351401, 351402, 3562	B35					12		17 18			
*3516	B35	3				12		17 18			
*3517, 3530	B35	3				12		17 18			
*3519	-					12		17			
*3521, 3524	-					12		17 18			
*3522	-	3						18			
*3525, 3549	-					12		17			
*3526	-		6			12		17			
*3527	B35					12		17			
*3535	B35					12		17 18		21	
*3538	-							17 18			

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		28			32	33				38					46		-	*2724	
		28			32					38					45	46	-	*2725	
										38						46	-	*2729	
		28			32			36		38						46	-	*2730	
		28			32					38							47	-	*2733
		28			32					38						46	-	*2741	
		28			32					38						46	-	*2752	
														44			47	B35	*350101-350109, 350111-350113, 3507- 350804, 3511, 3515, 352001, 352002, 3523, 3529, 3540N- 3542, 3548, 3550, 3552, 3554, 3557, 3561, 3577, 3578, 3582, 3590-3594
														44			47	-	*350110
														44			47	B35	*350201-350401, 350403, 3506, 351201, 351202, 3533, 3534, 3536, 3539, 3555, 3559, 3565Q, 3570, 3574, 3583-3585, 3595, 3598
														44			47	-	*350402
														44			47	B35	*3505, 3551, 3558, 3572, 3589, 3597
														44			47	B35	*350901, 350902, 3518, 3531, 3575, 3588
									38								47	B35	*3510, 3528, 3569, 3580
									38								47	B35	*3513
														44	45		47	B35	*351401, 351402, 3562
									38								47	B35	*3516
														44			47	B35	*3517, 3530
								37									47	-	*3519
			31											44			47	-	*3521, 3524
														44			47	-	*3522
																	47	-	*3525, 3549
																	47	-	*3526
														44			47	B35	*3527
														44			47	B35	*3535
		29												44			47	-	*3538

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*3543, 3567, 3579, 3586	B35					12				18			
*3544	-									18			
*3545, 3571	-					12	13			17	18		
*3546	B35		4			12				17			
*3547	-		4			12				17			
*3556	-									17			
*3560	B35									18			
*3563	-		4			12				17			
*3576	-					12				17	18		
*3581, 3596	-									17	18		
*3587	-				8					18			
*370101-370103, 370105-370107, 3703N, 3706, 3713, 3715-3719	B37, Null						13			17		20	
*370104	-						13			17		20	
*3702	-			5			13					20	
*3704	-						13			17		20	
*3705	-						13			17		20	
*3707	-	1					13					20	
*3708	-						13			17		20	
*3709	-						13					20	
*3710	-									17		20	
*3711	-									17	18	20	
*3712	-				8		13					20	
*3714	-									17		20	
*380101-380202, 3808, 3809, 3811-3816, 3818, 3819	B38			5									21 22 23
*3803	B16			5		11							21 22
*3804	-												21 23
*3805	-			6									21 22 23
*3806	-												21
*3807	-			5									21
*3810	-			5									22 23
*3817	-			5			13					20	21 22 23
*3820	-			5						17			21 22 23

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									44	45	47	B35	*3543, 3567, 3579, 3586
									44	45	47	-	*3544
		29							44		47	-	*3545, 3571
				33							47	B35	*3546
						37					47	-	*3547
									44		47	-	*3556
								40	44		47	B35	*3560
						37	38				47	-	*3563
		28			32				w		47	-	*3576
				31					44		47	-	*3581, 3596
		27							44		47	-	*3587
		29					38				46	B37, Null	*370101-370103, 370105-370107, 3703N, 3706, 3713, 3715-3719
		29					38	39			46	-	*370104
							38				46	-	*3702
		29		31			38				46	-	*3704
		29					38				47	-	*3705
							38				46	-	*3707
		29							44		46	-	*3708
							38				46	-	*3709
		29					38				46	-	*3710
		29					38				47	-	*3711
		29					38				46	-	*3712
		29					38				46	w	*3714
											46	B38	*380101-380202, 3808, 3809, 3811-3816, 3818, 3819
							38				46	B16	*3803
							38				46	-	*3804
											46	-	*3805
									44		46	-	*3806
									44		46	-	*3807
											46	-	*3810
											46	-	*3817
											46	-	*3820

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26										37	38					47	B61, B40	*4009, 4011, 4018, 4024, 4027, 4029, 4035, 4037, 4044, 4050, 4056, 4057, 4064, 4075, 4078, 4082, 4085, 4086, 4090, 4091
25										37	38					47	Null, B40, B60	*4010, 4022N, 4033, 4036, 4042, 4043, 4049, 4054, 4055, 4061-4063, 4065, 4067, 4081, 4084, 4087, 4088, 4092
25										38						47	-	*4012
26						34	36			38						46	-	*4013, 4019
										37	38					47	-	*401401-401403, 4030, 4034, 4053
										37	38					47	B61	*4015, 4032
										37	38					47	B61	*4016
25										38						47	-	*4021
25										37	38					47	-	*4023
25										37						47	-	*4025, 4069
26										37	38					47	B21	*4026
26				31						37	38					47	-	*4028
						33				37	38					47	-	*4031, 4045, 4080
25										37	38					47	-	*4038, 4052
25										38						47	-	*4046
25										38						46	-	*4047
25										37	38			43		47	-	*4048
										37	38	40				47	-	*4058
										37	38					47	-	*4059
25										37	38					47	-	*4060
26										37						47	-	*4068
26										37	38		41	43		47	-	*4071
25 26										37	38					47	-	*4074
25										38							-	*4076
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										38						47	-	*4093
26										37	38	39				47	-	*4094
26						35				37	38					47	-	*4095
26										38						46	-	*4096
26										37	38					47	-	*4098
27			30							37	38					47	B41	*4101, 4106, 4107, 4112
27										37	38					47	B41	*410201-410302, 4111

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*4104, 4110	-		4							24
*4105	-		4	8						24
*4108	-	1	4	8		14				24
*4109, 4502, 4503	-		4	8						24
*420101-4202, 4206, 4210, 4212	B42			8						24
*4204	-			8						24
*420501, 420502	-	1		8		14				24
*4208	-			8						24
*4209	-				12					24
*4211	-			8	11					24
*4213	-			8						24
*44020101-440210, 4411, 4416, 4419N, 4421-4424, 4427, 4433, 4434, 4448, 4452N, 4455, 4459, 4463, 4466-4468, 4471-4474, 4480, 4484, 4486, 4487	B44, B47, Null		4				17			
*440301-440306, 440308-4405, 4413, 4426, 442801-4430, 4432, 4435, 4436, 4438, 4439, 4442, 4445, 4451, 4456N, 4458N, 4461N, 4469, 4470, 4476-4479, 4482, 4485, 4488	B44		4				17			
*440307, 4407, 4481	B44						17			
*4406	B44						17			
*4408	B44	w					17			
*4409	B12		4				17			
*4410	-		4		11		17	19		
*4412	-		4				17			
*4414	-		4	8			17			
*4415	-		4	8	11					
*4417, 4443	-		4		12	13	17			
*4418	-		4	8	11					
*4420	-		4	8						
*4425, 4450	-		4				17			
*4431	-		4							
*4437, 446401, 446402	-		4				17			
*4440	-				11		16	17		
*4441, 4453	-		4							

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	27					37 38			47	-	*4104, 4110
	27	30				? 38			47	-	*4105
	27					37 38			47	-	*4108
		30				37 38			47	-	*4109, 4502, 4503
	27 28								47	B42	*420101-4202, 4206, 4210, 4212
	27 28	30							47	-	*4204
	27 28								47	-	*420501, 420502
	28								47	-	*4208
	27 28								47	-	*4209
	27					38			47	-	*4211
	27 28 29								47	-	*4213
		29				38 39			46	B44, B47, Null	*44020101-440210, 4411, 4416, 4419N, 4421-4424, 4427, 4433, 4434, 4448, 4452N, 4455, 4459, 4463, 4466-4468, 4471-4474, 4480, 4484, 4486, 4487
		29				38			46	B44	*440301-440306, 440308-4405, 4413, 4426, 442801-4430, 4432, 4435, 4436, 4438, 4439, 4442, 4445, 4451, 4456N, 4458N, 4461N, 4469, 4470, 4476-4479, 4482, 4485, 4488
		29				38			46	B44	*440307, 4407, 4481
		29 30			36	39		44	46	B44	*4406
		29				38 39			46	B44	*4408
		29				37 38 39			47	B12	*4409
		29				38	41		46	-	*4410
		29				39			46	-	*4412
		29				38			46	-	*4414
		30				38	41		46	-	*4415
		29				38			46	-	*4417, 4443
		30		34		38	41		46	-	*4418
		29 30				38 39			46	-	*4420
		29		34	36	38			46	-	*4425, 4450
25		29				38			46	-	*4431
						38			46	-	*4437, 446401, 446402
		29				38			46	-	*4440
		29				38 39			46	-	*4441, 4453

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Lot-specific information

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*4444	-					11		16	17				
*4446, 4475	-		4						17				
*4447, 4465	-		4										
*4449	-	2	4						17				
*4454	-		3 4										
*4457	-		w						17				
*4460	-		3 4						17				
*4462	-		4		8 9				17				
*4483	-								17				
*4501, 4505, 4507	B45		4		8	11							24
*4504	-		4		8								24
*4506	-		4		8	11							24
*4508	-		4		8								24
*4509	-		4		8		12 13						24
*4510	-		4		8	10							24
*460101, 460102, 4604, 4605, 4607N, 4609, 4610, 4614- 4616, 4622	B46				7		12						
*4602	-				7		12						
*4603, 4608, 461301, 461302, 4619, 4621	-				7		12						
*4606	-				7		12						
*4611	-				7								
*4612, 4620	-		3		7		12						
*4617	-				7		12 13						
*4618	-				7								
*47010101, 47010102	B47		4										
*4702	-		4										
*4703	-		4										
*4704, 4705	-		4	5									
*480101, 480102, 4804, 4807, 4809, 4811, 4819, 4820	B48					11							24
*4802	-					11 12			17				24
*480301, 480302	B48					11							24
*4805, 4808	B48	1				11							24
*4806	-												24
*4810, 4812, 4813, 4817	-					11							24
*4814	-					11 12							24
*4815	-	1				11							24
*4816	-					11							24
*4818	-					11							

Lot No.: **63G**

Lot-specific information

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		29				38 39		46	-	*4444
		29			37	38		47	-	*4446, 4475
		29				38		46	-	*4447, 4465
		29				38 39		46	-	*4449
		29				38		46	-	*4454
		29				38		46	-	*4457
		29				38		46	-	*4460
		29				38		46	-	*4462
		29				38 39		46	-	*4483
		30			37	38	41	47	B45	*4501, 4505, 4507
		30			37	38	41	47	-	*4504
	28	30			37	38	41	47	-	*4506
		30			37	38	40	47	-	*4508
		30			37	38		47	-	*4509
		30			37	38		47	-	*4510
	28		31					45	47	B46
	w		31					45	47	-
	28		31					47	-	*4603, 4608, 461301, 461302, 4619, 4621
25	28		31					47	-	*4606
	28		31				41	47	-	*4611
	28		31					45	47	-
	28		31					45	47	-
	28		31					47	-	*4612, 4620
	28		31					45	47	-
	28		31			40		47	-	*4617
			32			38		46	B47	*47010101, 47010102
			32		37	38		47	-	*4702
			32		w	38		46 w	-	*4703
					38			46	-	*4704, 4705
			33			38		47	B48	*480101, 480102, 4804, 4807, 4809, 4811, 4819, 4820
						38		47	-	*4802
25						38		47	B48	*480301, 480302
						38		47	B48	*4805, 4808
			33					47	-	*4806
						38		47	-	*4810, 4812, 4813, 4817
						38		47	-	*4814
			33			38		47	-	*4815
			33					47	-	*4816
			33			38		46	-	*4818

Lot No.: **63G**

Lot-specific information

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					34	35		38		41			46	B49	*490101, 4906
					34			38		41			46	-	*490102
						35		38		41			46	-	*4902
						35		38		41			46	-	*4903
					34	35		38					46	-	*4904, 4905
					34	35		38					46	-	*4907
						35		37	38		41		47	B50	*500101, 500102, 5004, 5005, 5008
						35		37	38		41		47	B45	*5002
						35		38		41			47	-	*5006
						35		37	38		41		47	-	*5007
						35		37	38				47	-	*5009
			30			35	36				44		46	B51, B510 2, B510 3, Null	*510101, 510103, 510105-510108, 510110-510201, 510203, 5103, 5107, 510901, 5111N, 5112, 511302, 5114, 5117- 5119, 5122, 5123, 5126-5130, 5132, 5133, 5138-5141N, 5143, 5148-5153, 5155, 5157, 5158, 5160, 5165-5167, 5169-5177, 5179, 5180, 5183, 5184
						35	36					44	46	B51	*510102, 510109, 510202, 5105, 510902
			30			35	36				44		46	B51, B52	*510104, 510204, 511301, 5116, 5121, 512401, 512402, 5131, 5134, 5135, 5182
			30	31			36					44	46	B51	*5104, 5146, 5156
			30				36					44	46	B51	*5106, 5159
			30			35	36					44	46	B51	*5108, 5120, 5144N
			30				36					44	46	-	*5110, 5181
							36			41		44	46	-	*5115
			30			35	36					44	46	-	*5136
			30			35	36					44	46	-	*5137, 5163
		29	30				36					44	46	-	*5142
			30				36					44	46	-	*5145
						35						44	46	-	*5154, 5178
			30			w	36					44	45 46	-	*5161

Lot No.: **63G**

Lot-specific information

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			30			36			41	43	44	46	-	*5162
			30			36					44	46	-	*5164
			30			35 36					44	46	-	*5168
						35 36	38					46	B52	*520101, 520103, 5204, 5205, 5207, 5210-5213, 5215
			30			35 36	38					46	B52	*520102, 520104, 5202, 5203, 520601, 520602, 5209
						35 36	38					46	-	*520105, 5208, 5214
						35 36	38					46	-	*5216
						36					44	46	B53	*530101-530105, 5305, 5308, 5310, 5315, 5316, 5318
			31			36					44	46	B53	*5302
											44	46	-	*5303, 5309, 5311- 5313
						36					44	46	-	*5304, 5307, 5319
			30 31			36					44	46	B53	*5306
						36					44	46	-	*5314
						36	38					46	-	*5317
	28			32				39 40				47	B54	*5401, 5402, 5405N, 5407, 5408N, 5410, 5413, 5416-5419
	28			32				39	41			47	-	*5403
	28			32				39				47	-	*5404, 5411, 5415
	28			32				39				45	47	*5406
	28			32				39				47	-	*5409, 5414
	28			32	34			39 40				46	-	*5412
	28			32		35		40				47	B55	*550101-550106, 5503, 5505, 5511, 5515, 5525, 5529, 5531, 5533, 5536, 5538
	28			32				40				47	B54, B55	*550201-550205, 5507, 5510, 5512, 5516, 5519, 5526, 5530, 5537
	28			32								47	B55	*5504, 5508, 5513, 5527, 5615, 5619N, 5622
	28			32		35						47	-	*5509, 5524
	28			32						42		47	-	*5514
	28			32		35						47	-	*5517, 5528
							38	40				47	-	*5518
27 28		30	32									47	-	*5520

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Lot-specific information

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	28		32	w		40		45	47	-	*5521
	28		32						47	-	*5522
	28		32						47	-	*5523, 5532, 5618
	28		32		38	40			47	-	*5534
	28		32	w		40			47	-	*5535
	28		32			41			47	B56	*560101, 560102, 5608, 5614, 5616, 5620, 5624, 5626
	28		32			41	43		47	B56	*5602, 5604
	28		32					45	47	B22	*5603
	28		32	35		40			47	-	*560501
	28		32	35					47	-	*560502
	28		32	35		40		w	47	B78	*5606
	28		32			41		46		-	*5607
	28		32						47	-	*5609
	28		32			40	43		47	-	*5610
	28		32						47	-	*5611, 5612
	28	30	32			41			47	-	*5613
						41			47	-	*5617
	28		32	34 35				46		-	*5621
						40			47	-	*5623
	28		32	35		41			47	-	*5625
				36		42		46		B57	*570101-570104, 5706, 5708, 5710, 5715, 5718, 5719, 5722, 5723, 5725, 5726
				36		42		46		B57	*570105, 5711, 5713, 5721
				36		42		46		-	*5702-5705, 5717
	29			36		42		46		-	*5707
	29			36		42		46		-	*5709
						42		47		-	*5712
		31		36		42		46		-	*5714
				36				46		-	*5716, 5720
	29			36		42		46		-	*5724
				36		43		46		B58	*580101, 580102, 5804, 5805, 5810N- 5815, 5819, 5821- 5824
				36		43		46		B58	*580103, 5802, 5806, 5816
				36		43		46		-	*5807
	30		35 36			43		46		-	*5808
	31		36			43		46		-	*5809
						43		46		-	*5817N

Lot No.: **63G**

Lot-specific information

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The sequence of the B*4401 allele has been shown to be identical to B*4402.

The sequence of the B*5003 allele has been shown to be identical to B*5002.

The sequence of the B*5125 allele has been shown to be identical to B*5122.

The B*5147 allele has been renamed B*510902.

The sequence of the B*5506 allele has been shown to be identical to B*5504.

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

The B*7901 allele has been renamed B*1518.

The B*9530 allele has been renamed B*152702.

⁵The 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.

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, 3930, 3932-3934, 3947 and 3950 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*180702 and 1829 and the B*3532, 3537, 3553N, 3564, 3566, 356801-356802 and 3599 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*4109 and the B* 4502 and 4503 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, 5508, 5513 and 5527 and the B* 5615, 5619N and 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 5532 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																					
					Well																
						1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
				Prod. No.:		200959401	200959402	200966303	200963304	200963305	200963306	200959407	200959408	200967009	200967010	200959411	200959412	200963313	200967014	200959415	200959416
	IHCW 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	9025	DEU	*3501			-	-	-	-	-	-	-	-	-	-	-	+	-	-	-	-
9	9026	YAR	*3801			-	-	-	-	+	-	-	-	-	-	-	-	-	-	-	-
10	9107	LKT3	*5401			-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
11	9051	PITOUT	*4403			-	-	-	+	-	-	-	-	-	-	-	-	-	-	-	-
12	9052	DBB	*5701			-	-	-	-	-	-	-	-	-	-	-	+	-	-	-	-
13	9004	JESTHOM	*2705			-	-	-	-	+	-	-	-	-	-	-	-	-	-	-	+
14	9071	OLGA	*1501		*1520	-	-	-	-	-	-	+	-	-	-	-	+	-	-	-	-
15	9075	DKB	*4001			-	-	-	+	-	-	-	-	-	-	-	-	-	-	-	-
16	9037	SWEIG007	*4002			-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
17	9282	CTM3953540	*0801		*5501	-	+	-	-	-	-	-	+	-	-	-	-	-	-	-	-
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																
					Prod. No.:	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32
						200963317	200959418	200959419	200963320	200959421	200959422	200959423	200959424	200959425	200963326	200963327	200959428	200963329	200959430	200959431	200963332
	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	9025	DEU	*3501			+	+	-	-	-	-	-	-	-	-	-	-	-	-	-	-
9	9026	YAR	*3801			-	-	-	-	-	+	+	-	-	-	-	-	-	-	-	-
10	9107	LKT3	*5401			-	-	-	-	-	-	-	-	-	-	-	+	-	-	-	+
11	9051	PITOUT	*4403			+	-	-	-	-	-	-	-	-	-	-	-	+	-	-	-
12	9052	DBB	*5701			+	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
13	9004	JESTHOM	*2705			-	-	-	-	-	-	-	-	-	-	-	+	-	-	-	+
14	9071	OLGA	*1501		*1520	+	-	+	-	-	-	-	-	-	-	-	-	-	-	-	-
15	9075	DKB	*4001			-	-	-	-	-	-	-	+	+	-	-	-	-	-	-	-
16	9037	SWEIG007	*4002			-	-	-	-	-	-	-	-	-	+	-	-	-	-	-	-
17	9282	CTM3953540	*0801		*5501	-	-	-	-	-	-	-	+	-	-	+	+	-	-	-	+
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																	
					Prod. No.:	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47		
						200959433	200959434	200959435	200959436	200959437	200959438	200967039	200967040	200959441	200959442	200963343	200959444	200959445	200959446	200959447		
	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	9025	DEU	*3501			-	-	-	-	-	-	-	-	-	+	-	-	-	+	-		
9	9026	YAR	*3801			-	-	-	-	-	-	-	-	-	-	-	-	-	+	-		
10	9107	LKT3	*5401			-	-	-	-	-	-	+	+	-	-	-	-	-	-	+		
11	9051	PITOUT	*4403			-	-	-	-	-	+	-	-	-	-	-	-	-	+	-		
12	9052	DBB	*5701			-	-	-	+	-	-	-	-	-	+	-	-	-	+	-		
13	9004	JESTHOM	*2705			-	-	-	-	-	+	-	-	-	-	-	-	-	+	-		
14	9071	OLGA	*1501	*1520		-	-	-	-	-	+	-	-	-	-	-	-	+	-	+		
15	9075	DKB	*4001			-	-	-	-	+	+	-	-	-	-	-	-	-	-	+		
16	9037	SWEIG007	*4002			-	-	-	-	+	+	-	-	-	-	-	-	-	-	+		
17	9282	CTM3953540	*0801	*5501		-	-	+	-	-	-	-	+	-	-	-	-	-	-	+		
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.
Lot number: 63G
Expiry date: 2011-November-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	2009-594-01	17	2009-633-17	33	2009-594-33
2	2009-594-02	18	2009-594-18	34	2009-594-34
3	2009-633-03	19	2009-594-19	35	2009-594-35
4	2009-633-04	20	2009-633-20	36	2009-594-36
5	2009-633-05	21	2009-594-21	37	2009-594-37
6	2009-633-06	22	2009-594-22	38	2009-594-38
7	2009-594-07	23	2009-594-23	39	2009-670-39
8	2009-594-08	24	2009-594-24	40	2009-670-40
9	2009-670-09	25	2009-594-25	41	2009-594-41
10	2009-670-10	26	2009-633-26	42	2009-594-42
11	2009-594-11	27	2009-633-27	43	2009-633-43
12	2009-594-12	28	2009-594-28	44	2009-594-44
13	2009-633-13	29	2009-633-29	45	2009-594-45
14	2009-670-14	30	2009-594-30	46	2009-594-46
15	2009-594-15	31	2009-594-31	47	2009-594-47
16	2009-594-16	32	2009-633-32		

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

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

The negative control primer pairs, **Production No. 2009-614-01**, can detect contamination with PCR products diluted 10^{-7} .

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

Date of approval: 2010-August-31

Approved by:

Quality Control, Supervisor

Lot No.: **63G**

Lot-specific information

www.olerup-ssp.com

Declaration of Conformity

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

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 9001:2008 and ISO 13485:2003, following the provisions of the 98/79/EC Directive on *in vitro* diagnostic medical devices, Annex II List B, conformity assessed using Annex IV, as transposed into the national laws of the Member States of the European Union.

The Technical Documentation File is maintained at *Olerup* SSP AB, 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
2010-August-31

Olle Olerup
Managing Director

Lot No.: **63G**

Lot-specific information

www.olerup-ssp.com

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