

Olerup SSP[®] DRB1*04

Product number:	101.114-24/03 – including <i>Taq</i> pol. 101.114-24u/03u – without <i>Taq</i> pol.
Lot number:	57E
Expiry date:	2010-May-01
Number of tests:	24 tests – Product No. 101.114-24 3 tests – Product No. 101.114-03
Number of wells per test:	40
Storage - pre-aliquoted primers:	dark at -20°C
- PCR Master Mix:	-20°C

This Product Description is only valid for Lot No. 57E.

**CHANGES COMPARED TO THE PREVIOUS *OLERUP SSP[®]*
DRB1*04 LOT**

The DRB1*04 specificity and interpretation tables have been updated for the DRB1 alleles reported since the previous *Olerup SSP[®]* DRB1*04 lot (**Lot No. Y08**) was made.

Eight wells have been added to the DRB1*04 kit,
wells **33 to 40**.

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

Well	5'-primer	3'-primer	rationale
2	-	Removed	Primer moved to vial 40.
12	-	Modified	Increased yield of specific PCR product.
14	-	Modified	Decreased primer dimer formation tendency.
16	Modified	-	Increased yield of specific PCR product.
19	-	Removed	Primer moved to vial 39.
21	-	Modified	Increased specificity of specific primer pair.
22	-	Removed	Primer moved to vial 40.
23	-	Removed	Primer moved to vial 35.
24	Modified	-	Increased yield of specific PCR product.
33	New	New	New primer pair for the DRB1*0465 allele.
34	New	New	New primer pair for the DRB1*0466 allele.
35	New	New	New primer pair for the DRB1*0470 allele.
36	New	New	New primer pair for the DRB1*0471 allele.
37	New	New	New primer pair for the DRB1*0472 allele.
38	New	New	New primer pair for the DRB1*0473 allele.
39	New	New	Primer pair from vial 19.
40	New	New	Primer pair from vials 2 and 22.

PRODUCT DESCRIPTION

DRB1*04 SSP subtyping

CONTENT

The primer set contains 5'- and 3'-primers for identifying the DRB1*0401 to DRB1*0473 alleles.

PLATE LAYOUT

Each test consists of 40 PCR reactions in a 48 well cut PCR plate. Wells 41 to 48 are empty.

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

The 48 well cut PCR plate is marked with 'DRB1*04'.

Well No. 1 is marked with the Lot No. '57E'.

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

Four DRB1*01, several DRB1*03, five DRB1*08, most DRB1*09, ten DRB1*11, many DRB1*13, several DRB1*14 and one DRB1*15 allele will be amplified by the DRB1*04 subtyping kit besides the DRB1*04 group of alleles. In addition, many DRB3 alleles will be amplified by primer mix 24 and the DRB5*0112 allele weakly by primer mix 29. Thus, the interpretation of DRB1*04 subtypings will be influenced by these DRB alleles.

UNIQUELY IDENTIFIED ALLELES

All the phenotypically different DRB1*04 alleles, i.e. **DRB1*0401 to DRB1*0473**, recognized by the HLA Nomenclature Committee in April 2008¹ will give rise to unique amplification patterns by the primers in the DRB1*04 subtyping kit.

The DRB1*04 subtyping kit cannot distinguish the DRB1*040101 and *040103 alleles, the DRB1*040301 to DRB1*040304 alleles, the DRB1*040501 to DRB1*040505 alleles, the DRB1*040601 and DRB1*040602 alleles and the DRB1*040701 to DRB1*040703 alleles.

¹DRB1 alleles listed on the IMGT/HLA web page 2008-April-08, release 2.21.0, www.ebi.ac.uk/imgt/hla.

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RESOLUTION IN HOMO- AND HETEROZYGOTES

The 73 DRB1*04 alleles can be combined in 2 701 homozygous and heterozygous combinations. 385 of these genotypes do not give rise to unique amplification patterns. (The different lengths of the specific PCR products generated by the primers in vials 11, 12, 13, 14, 17, 19, 20, 21, 23, 25, 27, 29 and 31 were not considered in these calculations.)

++-+--++ -+---+-- ----+--+ ------+ ------	0402, 0438 = 0437, 0438
+-----+ ++----- ------ -++---+ ------	0406, 0467 = 0449, 0467
+-----+ ++----- ------ -++---+ ------	0403, 0467 = 0460, 0467
+---+---+ ++-+---+ -+-----+ -+-----+ ------	0416, 0459 = 0435, 0452
+---+---+ ++-+---+ -+-----+ -+-----+ ------	0416, 0427 = 0452, 0463
+---+---+ ++-+---+ -+-----+ -+-----+ ------	0401, 0452 = 0403, 0416
	= 0416, 0452
+---+---+ ++-----+ -+---+---+ -+-----+ ------	0427, 0435 = 0459, 0463
+---+---+ ++-----+ -+---+---+ -+-----+ ------	0401, 0459 = 0403, 0435
	= 0435, 0459
+---+---+ ++-----+ ---+---+ -+-----+ ------	0401, 0427 = 0403, 0463
	= 0427, 0463
+---+---+ ++-----+ ----+--+ -+-----+ ------	0405, 0438 = 0429, 0438
	= 0438, 0448
+---+---+ ++-----+ -+-----+ ++-----+ ------	0426, 0428 = 0435, 0445
+---+---+ ++-----+ -+-----+ -+-----+ ------	0401, 0428 = 0405, 0435
	= 0428, 0435
+---+---+ ++-----+ ----+--+ ++-----+ ------	0401, 0445 = 0405, 0426
	= 0426, 0445
+---+---+ ++-+----- ------+ -+-----+ ------	0416, 0468 = 0421, 0423
+---+---+ ++-+----- -+---+---+ -+-----+ ------	0421, 0456 = 0438, 0468
+---+---+ ++-----+ -+-----+ -+-----+ ------	0421, 0442 = 0435, 0468
+---+---+ ++-----+ ---+---+ -+-----+ ------	0421, 0440 = 0463, 0468
+---+---+ ++-----+ -+-----+ -+-----+ ------	0421, 0444 = 0433, 0468
+---+---+ ++-----+ -+-----+ -+-----+ ------	0401, 0468 = 0404, 0421
+---+---+ ++-----+ -+-----+ -+-----+ ------	0419, 0435 = 0421, 0443
+---+---+ ++-----+ -+-----+ -+-----+ ------	0401, 0419 = 0408, 0421
+---+---+ ++-+---+--- -+---+---+ -+-----+ ------	0416, 0456 = 0423, 0438
+---+---+ ++-+---+--- -+---+---+ -+-----+ ------	0416, 0442 = 0423, 0435
+---+---+ ++-+---+--- -+---+---+ -+-----+ ------	0416, 0440 = 0423, 0463
+---+---+ ++-+---+--- -+---+---+ -+-----+ ------	0416, 0444 = 0423, 0433
+---+---+ ++-+---+--- -+---+---+ -+-----+ ------	0401, 0423 = 0404, 0416
	= 0416, 0423
+---+---+ ++-+---+--- -+---+---+ -+-----+ ------	0418, 0438 = 0438, 0458
+---+---+ ++-+---+--- -+---+---+ -+-----+ ------	0435, 0456 = 0438, 0442
+---+---+ ++-+---+--- -+---+---+ -+-----+ ------	0438, 0440 = 0456, 0463
+---+---+ ++-+---+--- -+---+---+ -+-----+ ------	0433, 0456 = 0438, 0444
+---+---+ ++-+---+--- -+---+---+ -+-----+ ------	0401, 0456 = 0404, 0438
+---+---+ ++-+---+--- -+---+---+ -+-----+ ------	0438, 0453 = 0438, 0456
+---+---+ ++-----+ -+---+---+ -+-----+ ------	0435, 0440 = 0442, 0463
+---+---+ ++-----+ -+---+---+ -+-----+ ------	0433, 0442 = 0435, 0444
+---+---+ ++-----+ -+---+---+ -+-----+ ------	0401, 0442 = 0404, 0435
	= 0435, 0442
+---+---+ ++-----+ ---+---+ -+-----+ ------	0433, 0440 = 0444, 0463
+---+---+ ++-----+ ---+---+ -+-----+ ------	0401, 0440 = 0404, 0463
	= 0440, 0463
+---+---+ ++-----+ -+---+---+ -+-----+ ------	0401, 0444 = 0404, 0433
	= 0433, 0444
+---+---+ -++----- ------+ -+-----+ -+-----+ ------	0401, 0422 = 0422, 0472
+---+---+ ++-----+ -+---+---+ -+-----+ ------	0401, 0443 = 0408, 0435
	= 0435, 0443
+---+---+ -+---+---+ -+---+---+ -+-----+ ------	0401, 0416 = 0416, 0416

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+--+--++	-+-----	+-----+	+-----+	-----	0401,0435 = 0435,0435
+--+--+	-+-----	---+---+	+-----+	-----	0401,0463 = 0463,0463
+--+--+	-+-----	-----++	+-----+	-----	0401,0433 = 0433,0433
+--+--+	-+-----	-----+	++--+++	-----	0401,0464 = 0426,0464
+--+--+	-+-----	-----+	++-----	-----	0401,0426 = 0426,0426
+--+--+	-+-----	-----+	+-----+	----+---	0401,0472 = 0472,0472
-+--+++	++---+-	----+---	+-----+	-----	0402,0429 = 0437,0448
-+--+++	++---+-	-----	+-----+	-----	0402,0405 = 0402,0448
-+--+++	++-----	----+---	+-----+	-----	0405,0437 = 0429,0437
-+--++-	++---+-	-----	+-----++	-----	0405,0414 = 0414,0448
-+--+--	++--++-	---+---	+-----+	-----	0402,0458 = 0418,0437
-+--+--	++---+-	---+---	+-----+	-----	0402,0456 = 0437,0453
					= 0437,0456
-+--+--	-+---+-	----+---	-----+	-----+--	0402,0473 = 0437,0473
++++++	++-----	-----	-++-----	-----	0406,0410 = 0410,0449
++++++	++-----	-++-----	+-----+	-----	0424,0459 = 0428,0439
++++++	++-----	+-----	+-----+	-----	0403,0428 = 0405,0459
					= 0428,0459
++++++	++-----	-+-----	+-----+	-----	0403,0424 = 0405,0439
					= 0424,0439
++++++	++-----	+-----	+-----+	-----	0405,0441 = 0441,0457
+++++-	+-----+	-+-----	+--+--+	-----+-	0405,0469 = 0424,0469
+++++-	++-----	-----	-++-----	-----	0403,0410 = 0410,0460
++-+++	++-----	+-----	+-----+	-----	0406,0447 = 0419,0441
++-+-+	++-----	+-----	+-----+	-----	0406,0436 = 0441,0468
++-+-+	++-----	+-----	+-----+	-----	0403,0443 = 0408,0459
					= 0443,0459
++-+-+	++-----	+-----	+-----+	-----	0408,0441 = 0441,0447
++-+-+	++-+---+	+-----	+-----+	-----	0423,0459 = 0442,0452
++-+-+	++-+---+	---+---	+-----+	-----	0423,0427 = 0440,0452
++-+-+	++-+---+	---+---	+-----+	-----	0423,0450 = 0432,0452
++-+-+	++-+---+	-----	+-----+	---+-----	0423,0451 = 0452,0470
++-+-+	++-+---+	-----	+-----+	-----	0403,0423 = 0404,0452
					= 0423,0452
++-+-+	++-----	-+-+---	+-----+	-----	0427,0442 = 0440,0459
++-+-+	++-----	-+---+-	+-----+	-----	0432,0459 = 0442,0450
++-+-+	++-----	+-----	+-----+	---+-----	0442,0451 = 0459,0470
++-+-+	++-----	+-----	+-----+	-----	0403,0442 = 0404,0459
					= 0442,0459
++-+-+	++-----	---+--+	+-----+	-----	0427,0432 = 0440,0450
++-+-+	++-----	---+---	+-----+	---+-----	0427,0470 = 0440,0451
++-+-+	++-----	---+---	+-----+	-----	0403,0440 = 0404,0427
					= 0427,0440
++-+-+	++-----	---+---	+-----+	---+-----	0432,0451 = 0450,0470
++-+-+	++-----	---+---	+-----+	-----	0403,0432 = 0404,0450
					= 0432,0450
++-+-+	++-----	-----	+-----+	---+-----	0403,0470 = 0404,0451
					= 0451,0470
++-+-+	++-----	+-----	+-----+	-----	0404,0441 = 0436,0441
-+-++++	++-----	-----	-++++-+	-----	0411,0420 = 0417,0449
-+-++-	++--+--	-----	-++-----	-----	0406,0412 = 0412,0446
					= 0412,0449
-+-++-	++-----	-----	-+++-----	-----	0406,0411 = 0411,0449
-+-++-	++-----	-----	-++++-+	-----	0407,0411 = 0417,0460
-+-++-	++--+--	-----	-++-----	-----	0403,0412 = 0412,0460
-+-++-	++-----	-----	-+++-----	-----	0403,0411 = 0411,0460
-+-++++	++-+---	+-----	+-----+	-----	0406,0454 = 0446,0454
-+-++++	++-+---	-----	+-----+	-----	0406,0431 = 0431,0446
-+-++++	++-----	-----	-++-+-+	-----	0407,0449 = 0420,0460
-+-++++	++-----	-----	+--+--+	-----	0403,0420 = 0406,0407
-+-++-	++--+--	-----	+-----+	-----	0406,0418 = 0418,0446

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--+-+--+	++-+---	+-----	-+-----+	-----	0406,0425 = 0425,0446 = 0441,0446
--+-+--+	++-+---	----+---	-+-----+	-----	0406,0458 = 0446,0458
--+-+--+	++-+---	-----	-+-----+	-----	0406,0455 = 0446,0455
--+-+--+	++-+---	-----	-+-----+	-----	0406,0446 = 0446,0446
--+-+--+	++-+---	-----	-++-----+	-----	0403,0449 = 0406,0460 = 0449,0460
--+-+--+	++-+---	-----	-++-----	-----	0406,0449 = 0449,0449
--+-+--+	++-+---	+-----	-+-----+	-----	0431,0441 = 0441,0454
--+-+--+	++-+---	-+-----	-+--+---	-----+	0403,0469 = 0439,0469
--+-+--+	++-+---	-----	-+-----+	-----	0403,0452 = 0452,0452
--+-+--+	++-+---	+-----	-+-----+	-----	0425,0441 = 0441,0455
--+-+--+	++-+---	-+-----	-+-----+	-----	0403,0459 = 0459,0459
--+-+--+	++-+---	-+-----	-+-----+	-----	0403,0439 = 0439,0439
--+-+--+	++-+---	-+-----	-+-----+	-----	0403,0427 = 0427,0427
--+-+--+	++-+---	----+---	-+-----+	-----	0403,0450 = 0450,0450
--+-+--+	++-+---	-----	-++-----+	-----	0403,0460 = 0460,0460
--+-+--+	++-+---	-----	-+-----+	--+-----	0403,0451 = 0451,0451
--+-+--+	++-+---	-----	-+-----+	---+-----	0403,0471 = 0471,0471
---++-++	++-++-+	+-----	-+-----+	-----	0418,0457 = 0425,0448
---++-++	++-++-+	----+---	-+-----+	-----	0418,0429 = 0448,0458
---++-++	++-++-+	-----	-+-----+	-----	0405,0418 = 0418,0448 = 0448,0455
---++-++	++-+---	+---+---	-+-----+	-----	0425,0429 = 0457,0458
---++-++	++-+---	+-----	-+-----+	-----	0405,0425 = 0425,0457 = 0455,0457
---++-++	++-+---	----+---	-+-----+	-----	0405,0458 = 0429,0455 = 0429,0458
---++-++	++-+---	+-----	-+-----+	-----	0436,0448 = 0453,0457
---++-++	++-+---	-+-----	-+-----+	-----	0428,0453 = 0442,0448
---++-++	++-+---	----+---	-+-----+	-----	0405,0456 = 0429,0453 = 0429,0456 = 0448,0456
---++-++	++-+---	-----	-+-----+	-----	0404,0448 = 0405,0453 = 0448,0453
---++-++	++-+---	++-+---	-+-----+	-----	0428,0436 = 0442,0457
---++-++	++-+---	+-----	-+-----+	-----	0404,0457 = 0405,0436 = 0436,0457
---++-++	++-+---	-+-----	-+-----+	-----	0404,0428 = 0405,0442 = 0428,0442
---++-++	+--+-----	+-----	-+-----+	-----	0405,0415 = 0415,0457
---++-++	+--+-----	-----	-++-----+	-----	0405,0412 = 0412,0448
---++-++	+--+-----	----+---	-+-----+	-----+	0405,0473 = 0429,0473 = 0448,0473
---++-+-	++-+---	+-----	-+-----+	-----	0405,0454 = 0431,0457 = 0454,0457
---++-+-	++-+---	++-+---	-+-----+	-----	0428,0447 = 0443,0457
---++-+-	++-+---	+-----	-+-----+	-----	0405,0447 = 0408,0457 = 0447,0457
---++-+-	++-+---	-+-----	-+-----+	-----	0405,0443 = 0408,0428 = 0428,0443
---++-+-	+-----+	-----	-+-----+	-----	0405,0448 = 0448,0448
---++-+-	+-----	+-----	-+-----+	-----	0405,0457 = 0457,0457
---++-+-	+-----	-+-----	-+-----+	-----	0405,0428 = 0428,0428
---++-+-	+-----	-+-----	-+-----+	-----	0405,0424 = 0424,0424
---++-+-	+-----	----+---	-+-----+	-----	0405,0429 = 0429,0429
---++-+-	+-----	-----+	++-+--+	-----	0405,0464 = 0445,0464
---++-+-	+-----	-----	++-+---	-----	0405,0445 = 0445,0445
---++-+-	+-----	-----	-+-----+	-----+	0405,0430 = 0430,0430
---++-+-	++-++-+	-----	-++-----+	-----	0404,0412 = 0410,0418
---+-+---	++-+---	+-----	-+-----+	-----	0419,0425 = 0454,0468

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---+---++	++---+---	-----	-+-----+	-----	0419, 0455 = 0431, 0468
---+---++	++-----	+-----	-+-----+	-----	0419, 0436 = 0447, 0468
---+---++	++-----	-+-----	-+-----+	-----	0419, 0442 = 0443, 0468
---+---++	++-----	-----	-+-----+	-----	0404, 0419 = 0408, 0468
---+---++	+++---+	+-----	-+-----+	-----	0415, 0431 = 0425, 0461
---+---++	+++-----	+-----	-+-----+	-----	0408, 0415 = 0436, 0461
---+---++	+++-----	-----	-+-----+	----+---	0408, 0422 = 0422, 0461
---+---++	++---++-	+-----	-----+	-----	0418, 0447 = 0453, 0454
---+---++	++---++-	-----	-+-----+	-----	0408, 0418 = 0431, 0453
---+---++	++---+---	++-----	-+-----+	-----	0425, 0443 = 0442, 0454
---+---++	++---+---	+-----	-+-----+	-----	0404, 0454 = 0408, 0425
					= 0431, 0436 =
					0447, 0455
---+---++	++---+---	+-----	-----+	-----	0425, 0447 = 0436, 0454
---+---++	++---+---	-+-----	-+-----+	-----	0431, 0442 = 0443, 0455
---+---++	++---+---	-----	-+-----+	-----	0404, 0431 = 0408, 0455
---+---++	++-----	++-----	-+-----+	-----	0436, 0443 = 0442, 0447
---+---++	++-----	+-----	-+-----+	-----	0404, 0447 = 0408, 0436
---+---++	++-----	-+-----	-+-----+	-----	0404, 0443 = 0408, 0442
					= 0442, 0443
---+---+	++---+---	+-----	-+-----+	-----	0408, 0454 = 0431, 0447
---+---+	++-----	+-----	-+-----+	-----	0408, 0443 = 0443, 0443
---+---+	+++-----	+-----	-+-----+	----+---	0415, 0422 = 0422, 0436
---+---+	++---+---	-----	-+-----+	-----	0404, 0423 = 0423, 0423
---+---+	++---++-	+-----	-----+	-----	0418, 0436 = 0425, 0453
---+---+	++---++-	-----+---	-----+	----+---	0418, 0473 = 0458, 0473
---+---+	++---++-	-----+---	-----+	-----	0418, 0456 = 0453, 0458
					= 0456, 0458
---+---+	++---++-	-----	-+-----+	-----	0404, 0418 = 0453, 0455
---+---+	++---+---	+-----	-+-----+	-----	0404, 0425 = 0436, 0455
---+---+	++---+---	-----+---	-----+	----+---	0453, 0473 = 0456, 0473
---+---+	++---+---	-----+---	-----+	-----	0453, 0456 = 0456, 0456
---+---+	++-----	-+-----	-+-----+	-----	0404, 0442 = 0442, 0442
---+---+	++-----	-----+---	-+-----+	-----	0404, 0440 = 0440, 0440
---+---+	++-----	-----+---	-+-----+	-----	0404, 0432 = 0432, 0432
---+---+	++-----	-----+---	-+-----+	-----	0404, 0444 = 0444, 0444
---+---+	++-----	-----	-+-----+	--+-----	0404, 0470 = 0470, 0470
-----++	++---+---	+-----	-+-----+	-----	0425, 0431 = 0454, 0455

SPECIFICITY TABLE**DRB1*04 SSP subtyping**

Specificities and sizes of the PCR products of the 40 primer mixes used for DRB1*04 SSP subtyping

Primer Mix	Size of spec. PCR product ¹	Size of control band ²	Amplified DRB1*04 alleles ³	Other amplified DRB alleles ⁴
1	215 bp	515 bp	040101-040103, 0409, 0413, 0416, 0421, 0426, 0433, 0435, 0438, 0462, 0463, 0467, 0472	
2	215 bp	430 bp	0402, 0414, 0437	1457
3	225 bp	430 bp	040301-040304, 040601-040703, 0411, 0417, 0420, 0427, 0439, 0441, 0446, 0449-0452, 0459, 0460, 0465, 0469, 0471	1410
4	225 bp	515 bp	040101-0402, 0404-040505, 0408-0410, 0413-0416, 0419, 0421, 0423, 0424, 0426, 0428-0430, 0432, 0433, 0435-0438, 0440, 0442-0445, 0447, 0448, 0453, 0456, 0457, 0461-0463, 0467, 0468, 0470, 0472, 0473	1122, 1457
5	170 bp	430 bp	040501-040505, 0409-0412, 0417, 0424, 0428-0430, 0445, 0448, 0457, 0467	
6⁵	115 bp	430 bp	040601-040602, 0419-0421, 0446, 0449, 0465, 0468	
7	260 bp	430 bp	040101-040103, 040501-040505, 040701-0409, 0414, 0416, 0417, 0419-0421, 0424, 0426, 0428-0431, 0433, 0435, 0438, 0443, 0445, 0447, 0448, 0454, 0457, 0461-0463, 0469, 0472	1122
8	260 bp	430 bp	0402-0404, 040601-040602, 0410-0413, 0415, 0418, 0422, 0423, 0425, 0427, 0432, 0436, 0437, 0439-0442, 0444, 0446,	1410, 1457

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			0449-0453, 0455, 0456, 0458-0460, 0465, 0467, 0468, 0470, 0471, 0473	
9⁶	215 bp	430 bp	040301-0408, 0410, 0411, 0412 ^{weakly} , 0415, 0417, 0418 ^{weakly} , 0419, 0420, 0423, 0424, 0425 ^{weakly} , 0427-0430, 0431 ^{weakly} , 0432, 0436, 0439-0461, 0468-0471	1122, 1410
10	170 bp	515 bp	040101-0404, 040601- 0408, 0413, 0414, 0416, 0418-0423, 0425, 0426 ^{weakly} , 0427, 0431- 0433, 0435-0444, 0446, 0447, 0449-0456, 0458- 0460, 0463, 0465, 0468, 0470-0472	
11⁸	175, 220 bp	430 bp	0415, 0422, 0461	1122
12⁹	180, 265 bp	515 bp	0416, 0423, 0452	
13¹⁰	170, 225 bp	430 bp	0412, 0418, 0425, 0431, 0446, 0454, 0455, 0458	
14^{7,11}	200, 220 bp	430 bp	0402, 0412, 0414, 0418, 0438, 0448, 0453, 0456, 0473	1457
15⁶	215 bp	430 bp	0434	
16^{6,7,12}	150 bp	515 bp	040301-040304, 040701- 040703, 0411, 0417, 0427, 0439, 0450 ^{weakly} , 0451, 0452, 0459, 0460, 0469, 0471	0829 ^{weakly} , 1153 ^{weakly} , 115401- 115402 ^{weakly} , 1442 ^{weakly} , 1458 ^{weakly}
17^{5,13}	110, 190 bp	430 bp	0415, 0425, 0436, 0441, 0447, 0454, 0457	1122
18^{5,6}	145 bp	430 bp	0428, 0435, 0442, 0443, 0459	1122
19^{5,6,14}	140, 210 bp	515 bp	0424, 0439, 0469	1410
20^{5,15}	100, 175, 255 bp	430 bp	0427, 0440, 0463	
21¹⁶	155, 200 bp	515 bp	0429, 0437, 0438, 0456, 0458, 0473	
22	230 bp	430 bp	0432, 0450	
23^{5,17}	120, 235 bp	430 bp	0433, 0444	
24⁵	85 bp	430 bp	040101-040103, 0409, 0416, 0421, 0426, 0433- 0435, 0438, 0462-0464, 0466, 0472	0110, 0116, 030201-030202, 030501-030502, 0309, 0314, 0317, 0327,

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				0329, 0335, 0338, 1153, 1419, DRB3*01010201 -0111, DRB3*020201- 0203, 0205- 0213, 0215- 0223, DRB3*0303
25 ^{5,18}	125, 230, 260 bp	430 bp	0426, 0445, 0464	
26	200 bp	515 bp	040101-040103, 040301- 0411, 0413, 0416, 0417, 0419-0424, 0426-0433, 0435, 0439-0446, 0448- 0452, 0455, 0457, 0459- 0463, 0465, 0467-0472	1410
27 ^{5,6, 19}	120, 265 bp	515 bp	0410-0412, 0449, 0460, 0467	0312, 0806, 0810, 0812, 0822, 1304, 1332, 1348, 1358, 1375, 1381, 1465, 1512
28 ⁵	90 bp	430 bp	0411, 0417	0829
29 ^{5,20}	75, 260 bp	430 bp	040701-040703, 0417, 0420, 0464, 0469	0117, 090102- 0902 ^{weakly} , 0904 ^{weakly} , 0905 ^{weakly} , 140701- 140702 ^{weakly} , 1414 ^{weakly} , 1436 ^{weakly} , 1442 ^{weakly} , 144401- 144402 ^{weakly} , 1451, 1468 ^{weakly} , DRB5*0112 ^{weakly}
30 ⁵	80 bp	430 bp	0409, 0467	130301-1304, 1332, 1333, 1338, 1348, 1365, 1366, 1375, 1381
31 ^{5,21}	85, 260 bp	430 bp	0414, 0464	0103, 111101- 111102, 111401- 111402, 1120, 1168, 130201-

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				130302, 1323, 1329, 1331, 1333, 1334, 1336-1339, 1341, 1345, 1363, 1365- 1367, 1373, 1374
32⁵	115 bp	430 bp	040101-040505, 040701- 0418, 0422-0433, 0435- 0445, 0447, 0448, 0450- 0463, 0467, 0469-0473	1122
33	215 bp	430 bp	0465	
34	260 bp	515 bp	0466	
35	245 bp	430 bp	0451, 0470	
36	240 bp	515 bp	0471	
37	235 bp	430 bp	0422, 0472	
38	215 bp	515 bp	0473	
39	175 bp	430 bp	0462, 0469	1410, 1457
40	150 bp	430 bp	0430	

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 DRB*04 SSP subtypings.

When the primers in a primer mix can give rise to specific PCR products of more than one length this is indicated if the size difference is 20 base pairs or more. Size differences shorter than 20 base pairs are not given. For high resolution SSP kits the respective length of the specific PCR product(s) of the alleles amplified by these primer mixes are given.

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

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

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

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

²The internal positive control primer pairs amplify segments of the human growth hormone gene. The two different control primer pairs give rise to either an internal positive control band of 430 base pairs, for most wells, or a band of 515 base pairs, for some wells.

Well number 1 contains the primer pair giving rise to the longer, 515 bp, internal positive control band in order to help in the correct orientation of the DRB1*04 subtyping.

In addition, wells number 4, 10, 12, 16, 19, 21, 26, 27, 34, 36 and 38 contain the primer pair giving rise to the longer, 515 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.

³For several DRB alleles only partial second exon nucleotide sequences are available. In these instances it is not known whether some of the primers of the SSP sets are completely matched with the target sequences or not. We assume that unknown sequences in the first hyperpolymorphic region of the second exon of DRB alleles are conserved within allelic groups and that unknown sequences of codons 87 to 92 are identical with the DRB1*0101 consensus sequence.

⁴The DRB1*1122, DRB1*1410 and DRB1*1457 alleles carry the DRB1*04 sequence motif in the 1st hyperpolymorphic region of the 2nd exon and will, thus, be amplified by several of the DRB1*04

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primer mixes. In addition, four DRB1*01, several DRB1*03, five DRB1*08, most DRB1*09, ten DRB1*11, many DRB1*13, several DRB1*14 and one DRB1*15 allele will be amplified by the DRB1*04 subtyping kit. Furthermore, many DRB3 alleles will be amplified by primer mix 24. However, the purpose of primer mix 24 is to be able to distinguish the DRB1*0401,0404 and DRB1*0408,0413 genotypes. Non-DRB1*04 alleles will be amplified by primer mixes 2 to 4, 7 to 9, 11, 14, 16 to 19, 24, 26 to 32 and 39, but the purpose of these primer mixes is to increase the resolution in DRB1*04 homozygotes.

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

⁶Primer mixes 9, 15, 16, 18, 19 and 27 may give rise to nonspecific amplifications.

⁷Primer mixes 14 and 16 have a tendency of giving rise to primer dimer formation.

⁸Primer mix 11: Specific PCR fragment of 175 bp in the DRB1*0415, 0461 and the DRB1*1122 alleles. Specific PCR fragment of 220 bp in the DRB1*0422 allele.

⁹Primer mix 12: Specific PCR fragment of 180 bp in the DRB1*0416 allele. Specific PCR fragment of 265 bp in the DRB1*0423 and 0452 alleles.

¹⁰Primer mix 13: Specific PCR fragment of 170 bp in the DRB1*0446 allele. Specific PCR fragments of 225 bp in the DRB1*0412, 0418, 0425, 0431, 0454, 0455 and 0458 alleles.

¹¹Primer mix 14: Specific PCR fragment of 200 bp in the DRB1*0402, 0412, 0414, 0418, 0438, 0453, 0456, 0473 and the DRB1*1457 alleles. Specific PCR fragment of 220 bp in the DRB1*0448 allele.

¹²Primer mix 16 may yield somewhat less specific PCR fragment than the other DRB1*04 primer mixes.

¹³Primer mix 17: Specific PCR fragment of 110 bp in the DRB1*0441 allele. Specific PCR fragment of 190 bp in the DRB1*0415, 0425, 0436, 0447, 0454, 0457 and DRB1*1122 alleles.

¹⁴Primer mix 19: Specific PCR fragment of 140 bp in the DRB1*0439 allele. Specific PCR fragment of 175 bp in the DRB1*0462 allele. Specific PCR fragment of 210 bp in the DRB1*0424, 0469 and 1410 alleles.

¹⁵Primer mix 20: Specific PCR fragment of 100 bp in the DRB1*0463 allele. Specific PCR fragment of 175 bp in the DRB1*0440 allele. Specific PCR fragment of 255 bp in the DRB1*0427 allele.

¹⁶Primer mix 21: Specific PCR fragment of 155 bp in the DRB1*0429 allele. Specific PCR fragment of 200 bp in the DRB1*0437, 0438, 0456, 0458 and 0473 alleles.

¹⁷Primer mix 23: Specific PCR fragment of 120 bp in the DRB1*0433 allele. Specific PCR fragment of 235 bp in the DRB1*0444 allele.

¹⁸Primer mix 25: Specific PCR fragment of 125 bp in the DRB1*0426 allele. Specific PCR fragment of 230 bp in the DRB1*0445 allele. Specific PCR fragment of 260 bp in the DRB1*0464 allele.

¹⁹Primer mix 27: Specific PCR fragment of 120 bp in the DRB1*0410, 0411, 0412, 0460, 0467 and the DRB1*0312, 0806, 0810, 0812, 0822, 1304, 1332, 1348, 1358, 1375, 1381, 1465 and 1512 alleles. Specific PCR fragment of 265 bp in the DRB1*0449 allele.

²⁰Primer mix 29: Specific PCR fragment of 75 bp in the DRB1*040701-040703, 0417, 0420, 0469 and the DRB1*0117, 090102-0902^{weakly}, 0904^{weakly}, 0905^{weakly}, 140701-140702^{weakly}, 1414^{weakly}, 1436^{weakly}, 1442^{weakly}, 144401-144402^{weakly}, 1451, 1468^{weakly} and the DRB5*0112^{weakly} alleles. Specific PCR fragment of 260 bp in the DRB1*0464 allele.

²¹Primer mix 31: Specific PCR fragment of 85 bp in the DRB1*0414 and the DRB1*0103, 111101-111102, 111401-111402, 1120, 1168, 130201-130302, 1323, 1329, 1331, 1333, 1334, 1336-1339, 1341, 1345, 1363, 1365-1367, 1373 and 1374 alleles. Specific PCR fragment of 260 bp in the DRB1*0464 allele.

INTERPRETATION TABLE**DRB1*04 SSP subtyping**

Allele-specific amplification patterns of the DRB1*0401 to *0473 alleles

	Well ⁴																			
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
Length of spec.	215	215	225	225	170	115	260	260	215	170	175	180	170	200	215	150	110	145	140	100
PCR product											220	265	225	220			190		210	175
																				255
Length of int.	515	430	430	515	430	430	430	430	430	515	430	515	430	430	430	515	430	430	515	430
pos. control ¹																				
5'-primer(s) ²	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	37	13	13	13	13
	5'-A CA ^{3'}	5'-A CA ^{3'}	5'-A CA ^{3'}	5'-A CA ^{3'}	5'-A CA ^{3'}	5'-A CA ^{3'}	5'-A CA ^{3'}	5'-A CA ^{3'}	5'-A CA ^{3'}	5'-A CA ^{3'}	5'-A CA ^{3'}	5'-A CA ^{3'}	5'-A CA ^{3'}	5'-A CA ^{3'}	5'-A CA ^{3'}	5'-A CC ^{3'}	5'-g TA ^{3'}	5'-A CA ^{3'}	5'-A CA ^{3'}	5'-A CA ^{3'}
3'-primer(s) ³	71	71	74	74	57	37	86	86	71	57	58	59	56	67	71	74	37	47	46	33
	5'-CTT ^{3'}	5'-CTC ^{3'}	5'-C CT ^{3'}	5'-C Cg ^{3'}	5'-gCT ^{3'}	5'-C gg ^{3'}	5'-C AC ^{3'}	5'-C CA ^{3'}	5'-CCT ^{3'}	5'-ATC ^{3'}	5'-C CT ^{3'}	5'-CTg ^{3'}	5'-AgC ^{3'}	5'-gAT ^{3'}	5'-CTT ^{3'}	5'-C CT ^{3'}	5'-gTT ^{3'}	5'-g gA ^{3'}	5'-TA g ^{3'}	5'-CgC ^{3'}
									71	57	73	88	74	73			60		70	58
									5'-CCT ^{3'}	5'-ATC ^{3'}	5'-g gC ^{3'}	5'-AA T ^{3'}	5'-CA g ^{3'}	5'-ggA ^{3'}			5'-gTT ^{3'}		5'-T CC ^{3'}	5'-C gC ^{3'}
																	67			85
																	5'-gAA ^{3'}			5'-C Ag ^{3'}
Well No.	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
DRB1 allele																				
*040101-040103	1			4			7				10									
*0402		2		4				8		10				14						
*040301-040304			3					8	9	10						16				
*0404				4				8	9	10										
*040501-040505				4	5		7		9											
*040601-040602			3			6		8	9	10										
*040701-040703			3				7		9	10						16				
*0408				4			7		9	10										
*0409	1			4	5		7													
*0410				4	5			8	9											
*0411			3		5			8	9							16				
Well No.	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20

INTERPRETATION TABLE**DRB1*04 SSP subtyping**

Allele-specific amplification patterns of the DRB1*0401 to *0473 alleles

Well ⁴																				
21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	
155	230	120	85	125	200	120	90	75	80	85	115	215	260	245	240	235	215	175	150	Length of spec.
200		235		230		265		260		260										PCR product
				260																
515	430	430	430	430	515	515	430	430	430	430	430	430	515	430	515	430	515	430	430	Length of int.
																				pos. control ¹
13	13	13	71	13	13	11	57	13	57	13	13	13	13	13	13	13	13	13	13	5'-primer(s) ²
5'-A CA ^{3'}	5'-A CA ^{3'}	5'-A CA ^{3'}	5'-g AA ^{3'}	5'-A TA ^{3'}	5'-A CA ^{3'}	5'-Ag A ^{3'}	5'-AgC ^{3'}	5'-A TA ^{3'}	5'-AgC ^{3'}	5'-A TA ^{3'}	5'-A CA ^{3'}	5'-A CA ^{3'}	5'-g TC ^{3'}	5'-A CA ^{3'}	5'-A CC ^{3'}	5'-A CA ^{3'}	5'-A CA ^{3'}	5'-A CA ^{3'}	5'-A CA ^{3'}	
				23		57		74		71										
				5'-g CC ^{3'}		5'-AgC ^{3'}		5'-C gA ^{3'}		5'-C gA ^{3'}										
				58		63				71										
				5'-AT A ^{3'}		5'-CC A ^{3'}				5'-C AA ^{3'}										
51	72	39	86	86	67	86	74	86	71	86	37	71	86	81	86	77	71	57	49	3'-primer(s) ³
5'-C CA ^{3'}	5'-C CT ^{3'}	5'-A gT ^{3'}	5'-C AC ^{3'}	5'-C AC ^{3'}	5'-gAg ^{3'}	5'-C CA ^{3'}	5'-C CT ^{3'}	5'-C AC ^{3'}	5'-g CT ^{3'}	5'-C AC ^{3'}	5'-C gT ^{3'}	5'-CCA ^{3'}	5'-C AC ^{3'}	5'-gTA ^{3'}	5'-C CA ^{3'}	5'-Ag T ^{3'}	5'-CgC ^{3'}	5'-C Ag ^{3'}	5'-C CA ^{3'}	
67	78	77																		
5'-gAT ^{3'}	5'-gTg ^{3'}	5'-TA A ^{3'}																		
67																				
5'-gAg ^{3'}																				
21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	Well No.
																				DRB1 allele
			24		26						32									*040101-040103
											32									*0402
					26						32									*040301-040304
					26						32									*0404
					26						32									*040501-040505
					26						32									*040601-040602
					26			29			32									*040701-040703
					26						32									*0408
			24		26				30		32									*0409
					26	27					32									*0410
					26	27	28				32									*0411
21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	Well No.

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Length of spec.	215	215	225	225	170	115	260	260	215	170	175	180	170	200	215	150	110	145	140	100
PCR product											220	265	225	220			190		210	175
																				255
Well No.	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
*0412					5			8	w				13	14						
*0413	1			4				8		10										
*0414		2		4			7			10				14						
*0415				4				8	9		11						17			
*0416	1			4			7			10		12								
*0417			3		5		7		9							16				
*0418								8	w	10			13	14						
*0419				4		6	7		9	10										
*0420			3			6	7		9	10										
*0421	1			4		6	7			10										
*0422								8		10	11									
*0423				4				8	9	10		12								
*0424				4	5		7		9									19		
*0425								8	w	10			13				17			
*0426	1			4			7			w										
*0427			3					8	9	10						16				20
*0428				4	5		7		9									18		
*0429				4	5		7		9											
*0430				4	5		7		9											
*0431							7		w	10			13							
*0432				4				8	9	10										
*0433	1			4			7			10										
*0434														15						
*0435	1			4			7			10								18		
*0436				4				8	9	10							17			
*0437		2		4				8		10										
*0438	1			4			7			10				14						
*0439			3					8	9	10						16			19	
*0440				4				8	9	10										20
*0441			3					8	9	10							17			
*0442				4				8	9	10								18		
*0443				4			7		9	10								18		
*0444				4				8	9	10										
*0445				4	5		7		9											
*0446			3			6		8	9	10			13							
*0447				4			7		9	10							17			
*0448				4	5		7		9					14						
*0449			3			6		8	9	10										
Well No.	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20

155	230	120	85	125	200	120	90	75	80	85	115	215	260	245	240	235	215	175	150	Length of spec. PCR product
200		235		230		265		260		260										
				260																
21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	Well No.
					27					32										*0412
					26					32										*0413
										31	32									*0414
										32										*0415
			24		26					32										*0416
					26		28	29		32										*0417
										32										*0418
					26															*0419
					26			29												*0420
			24		26															*0421
					26					32						37				*0422
					26					32										*0423
					26					32										*0424
										32										*0425
			24	25	26					32										*0426
					26					32										*0427
					26					32										*0428
21					26					32										*0429
					26					32								40		*0430
					26					32										*0431
	22				26					32										*0432
		23	24		26					32										*0433
			24							32										*0434
			24		26					32										*0435
										32										*0436
21										32										*0437
21			24							32										*0438
					26					32										*0439
					26					32										*0440
					26					32										*0441
					26					32										*0442
					26					32										*0443
	23				26					32										*0444
				25	26					32										*0445
					26					32										*0446
										32										*0447
					26					32										*0448
					26	27														*0449
21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	Well No.

Length of spec.	215	215	225	225	170	115	260	260	215	170	175	180	170	200	215	150	110	145	140	100
PCR product											220	265	225	220			190		210	175
																				255
Well No.	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
*0450			3					8	9	10						w				
*0451			3					8	9	10						16				
*0452			3					8	9	10		12				16				
*0453				4				8	9	10				14						
*0454							7		9	10			13				17			
*0455								8	9	10			13							
*0456				4				8	9	10				14						
*0457				4	5		7		9								17			
*0458								8	9	10			13							
*0459			3					8	9	10						16		18		
*0460			3					8	9	10						16				
*0461				4			7		9		11									
*0462	1			4			7													
*0463	1			4			7			10										20
*0464																				
*0465			3			6		8		10										
*0466																				
*0467	1			4	5			8												
*0468				4		6		8	9	10										
*0469			3				7		9							16		19		
*0470				4				8	9	10										
*0471			3					8	9	10						16				
*0472	1			4			7			10										
*0473				4				8						14						
*0103, 111101- 111102, 111401- 111402, 1120, 1168, 130201-130203, 1323, 1329, 1331, 1334, 1336, 1337, 1339, 1341, 1345, 1363, 1367, 1373, 1374																				
*0110, 0116, 030201- 030202, 030501- 030502, 0309, 0314, 0317, 0327, 0329, 0335, 0338, 1419																				
Well No.	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20

101.114-24/03 – including *Taq* polymerase101.114-24u/03u – without *Taq* polymeraseLot No.: **57E**

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155	230	120	85	125	200	120	90	75	80	85	115	215	260	245	240	235	215	175	150	Length of spec.	
200		235		230		265		260		260										PCR product	
				260																	
21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	Well No.	
	22				26						32									*0450	
					26						32			35						*0451	
					26						32									*0452	
											32									*0453	
											32									*0454	
					26						32									*0455	
21											32									*0456	
					26						32									*0457	
21											32									*0458	
					26						32									*0459	
					26	27					32									*0460	
					26						32									*0461	
			24		26						32							39		*0462	
			24		26						32									*0463	
			24	25				29		31										*0464	
					26							33								*0465	
			24										34							*0466	
					26	27			30		32									*0467	
					26															*0468	
					26			29			32							39		*0469	
					26						32			35						*0470	
					26						32				36					*0471	
			24		26						32						37			*0472	
21											32						38			*0473	
																				*0103, 111101- 111102, 111401- 111402, 1120, 1168, 130201-130203, 1323, 1329, 1331, 1334, 1336, 1337, 1339, 1341, 1345, 1363, 1367, 1373, 1374 *0110, 0116, 030201- 030202, 030501- 030502, 0309, 0314, 0317, 0327, 0329, 0335, 0338, 1419	
			24																		
21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	Well No.	

Length of spec.	215	215	225	225	170	115	260	260	215	170	175	180	170	200	215	150	110	145	140	100
PCR product											220	265	225	220			190		210	175
																				255
Well No.	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
*0117, 1451																				
*0312, 0806, 0810, 0812, 0822, 1358, 1465, 1512																				
*0829																W				
*090102-0902, 0904, 0905, 140701-140702, 1414, 1436, 144401-144402, 1468																				
*1122				4			7		9		11						17	18		
*1153																W				
*115401-115402, 1458																W				
*130301-130302, 1333, 1338, 1365, 1366																				
*1304, 1332, 1348, 1375, 1381																				
*1410			3					8	9										19	
*1442																W				
*1457		2		4				8						14						
DRB1 allele																				
Well No.	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
DRB3*01010201-0111, 020201-0203, 0205-0213, 0215-0223, 0303																				
DRB5*0112																				
Well No.	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20

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 430 base pairs, for most wells, or a band of 515 base pairs, for some wells.

Well number 1 contains the primer pair giving rise to the longer, 515 bp, internal positive control band in order to help in the correct orientation of the DRB1*04 subtyping.

In addition, wells number 4, 10, 12, 16, 19, 21, 26, 27, 34, 36 and 38 contain the primer pair giving rise to the longer, 515 bp, internal positive control band in order to allow kit identification.

101.114-24/03 – including *Taq* polymerase
 101.114-24u/03u – without *Taq* polymerase

Lot No.: **57E**

Lot-specific information

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155	230	120	85	125	200	120	90	75	80	85	115	215	260	245	240	235	215	175	150	Length of spec.
200		235		230		265		260		260										PCR product
				260																
21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	Well No.
								29												*0117, 1451
						27														*0312, 0806, 0810, 0812, 0822, 1358, 1465, 1512
							28													*0829
								w												*090102-0902, 0904, 0905, 140701- 140702, 1414, 1436, 144401-144402, 1468
			24								32									*1122
																				*1153
																				*115401-115402, 1458
									30	31										*130301-130302, 1333, 1338, 1365, 1366
						27			30											*1304, 1332, 1348, 1375, 1381
					26													39		*1410
								w												*1442
																		39		*1457
																				DRB1 allele
21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	Well No.
			24																	DRB3*01010201- 0111, 020201-0203, 0205-0213, 0215- 0223, 0303
								w												DRB5*0112
21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	Well No.

²The codon, in the 2nd exon, matching the specificity-determining 3'-end of the primer is given. 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. Empty spaces indicate codon boundaries.

³The codon, in the 2nd exon, matching the specificity-determining 3'-end of the primer is given in the anti-sense direction. 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. Empty spaces indicate codon boundaries.

101.114-24/03 – including *Taq* polymerase101.114-24u/03u – without *Taq* polymeraseLot No.: **57E**

Lot-specific information

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⁴Primer mix 11: Specific PCR fragment of 175 bp in the DRB1*0415, 0461 and the DRB1*1122 alleles. Specific PCR fragment of 220 bp in the DRB1*0422 allele.

Primer mix 12: Specific PCR fragment of 180 bp in the DRB1*0416 allele. Specific PCR fragment of 265 bp in the DRB1*0423 and 0452 alleles.

Primer mix 13: Specific PCR fragment of 170 bp in the DRB1*0446 allele. Specific PCR fragments of 225 bp in the DRB1*0412, 0418, 0425, 0431, 0454, 0455 and 0458 alleles.

Primer mix 14: Specific PCR fragment of 200 bp in the DRB1*0402, 0412, 0414, 0418, 0438, 0453, 0456, 0473 and the DRB1*1457 alleles. Specific PCR fragment of 220 bp in the DRB1*0448 allele.

Primer mix 17: Specific PCR fragment of 110 bp in the DRB1*0441 allele. Specific PCR fragment of 190 bp in the DRB1*0415, 0425, 0436, 0447, 0454, 0457 and DRB1*1122 alleles.

Primer mix 19: Specific PCR fragment of 140 bp in the DRB1*0439 allele. Specific PCR fragment of 175 bp in the DRB1*0462 allele. Specific PCR fragment of 210 bp in the DRB1*0424, 0469 and 1410 alleles.

Primer mix 20: Specific PCR fragment of 100 bp in the DRB1*0463 allele. Specific PCR fragment of 175 bp in the DRB1*0440 allele. Specific PCR fragment of 255 bp in the DRB1*0427 allele.

Primer mix 21: Specific PCR fragment of 155 bp in the DRB1*0429 allele. Specific PCR fragment of 200 bp in the DRB1*0437, 0438, 0456, 0458 and 0473 alleles.

Primer mix 23: Specific PCR fragment of 120 bp in the DRB1*0433 allele. Specific PCR fragment of 235 bp in the DRB1*0444 allele.

Primer mix 25: Specific PCR fragment of 125 bp in the DRB1*0426 allele. Specific PCR fragment of 230 bp in the DRB1*0445 allele. Specific PCR fragment of 260 bp in the DRB1*0464 allele.

Primer mix 27: Specific PCR fragment of 120 bp in the DRB1*0410, 0411, 0412, 0460, 0467 and the DRB1*0312, 0806, 0810, 0812, 0822, 1304, 1332, 1348, 1358, 1375, 1381, 1465 and 1512 alleles. Specific PCR fragment of 265 bp in the DRB1*0449 allele.

Primer mix 29: Specific PCR fragment of 75 bp in the DRB1*040701-040703, 0417, 0420, 0469 and the DRB1*0117, 090102-0902^{weakly}, 0904^{weakly}, 0905^{weakly}, 140701-140702^{weakly}, 1414^{weakly}, 1436^{weakly}, 1442^{weakly}, 144401-144402^{weakly}, 1451, 1468^{weakly} and the DRB5*0112^{weakly} alleles. Specific PCR fragment of 260 bp in the DRB1*0464 allele.

Primer mix 31: Specific PCR fragment of 85 bp in the DRB1*0414 and the DRB1*0103, 111101-111102, 111401-111402, 1120, 1168, 130201-130302, 1323, 1329, 1331, 1333, 1334, 1336-1339, 1341, 1345, 1363, 1365-1367, 1373 and 1374 alleles. Specific PCR fragment of 260 bp in the DRB1*0464 allele.

'w', might be weakly amplified.

101.114-24/03 – including *Taq* polymerase101.114-24u/03u – without *Taq* polymeraseLot No.: **57E**

Lot-specific information

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CELL LINE VALIDATION SHEET																					
DRB1*04 SSP subtyping kit																					
						Well															
						1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
					Prod. No.	200736201	200846102	200736203	200736204	200736205	200736206	200736207	200736208	200736209	200736210	200736211	200846112	200736213	200846114	200736215	200846116
	IHWC cell line		DRB1																		
1	9001	SA	*0101			-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
2	9280	LK707	*1502	*0405		-	-	-	+	+	-	+	-	+	-	-	-	-	-	-	-
3	9011	E4181324	*1502			-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
4	9275	GU373	*0301			-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
5	9009	KAS011	*1601			-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
6	9353	SM	*0407	*0803		-	-	+	-	-	-	+	-	+	+	-	-	-	-	-	+
7	9020	QBL	*0301			-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
8	9007	DEM	*0401	*1602		+	-	-	+	-	-	+	-	-	+	-	-	-	-	-	-
9	9026	YAR	*0402			-	+	-	+	-	-	-	+	-	+	-	-	-	+	-	-
10	9107	LKT3	*0405			-	-	-	+	+	-	+	-	+	-	-	-	-	-	-	-
11	9051	PITOUT	*0701			-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
12	9052	DBB	*0701			-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
13	9067	BTB	*0801			-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
14	9071	OLGA	*0802			-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
15	9075	DKB	*0901			-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
16	9037	SWEIG007	*1101			-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
17	9008	WILJON	*1501			-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
18	9257	32367	*0901	*1101		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
19	9038	BM16	*1201			-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
20	9059	SLE005	*1302			-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
21	9064	AMALA	*1402			-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
22	9056	KOSE	*1302	*1401		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
23	9124	IHL	*0803	*1414		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
24	9035	JBUSH	*1101			-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
25	9049	IBW9	*0701			-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
26	9285	WT49	*0301			-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
27	9191	CH1007	*0405	*1001		-	-	-	+	+	-	+	-	+	-	-	-	-	-	-	-
28	9320	BEL5GB	*0416	*0701		+	-	-	+	-	-	+	-	-	+	-	+	-	-	-	-
29	9050	MOU	*0701			-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
30	9021	RSH	*0302			-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
31	9019	DUCAF	*0301			-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
32	9297	HAG	*1303			-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
33	9098	MT14B	*0404			-	-	-	+	-	-	-	+	+	+	-	-	-	-	-	-
34	9104	DHIF	*1101			-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
35	9302	SSTO	*0403			-	-	+	-	-	-	-	+	+	+	-	-	-	-	-	+
36	9024	KT17	*0403	*0406		-	-	+	-	-	+	-	+	+	+	-	-	-	-	-	+
37	9065	HHKB	*1301			-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
38	9099	LZL	*1402			-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
39	9315	CML	*0301	*0401		+	-	-	+	-	-	+	-	-	+	-	-	-	-	-	-
40	9134	WHONP199	*0701	*0901		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
41	9055	H0301	*1302			-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
42	9066	TAB089	*0803			-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
43	9076	T7526	*0901			-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
44	9057	TEM	*1401			-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
45	9239	SHJO	*0701			-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
46	9013	SCHU	*1501			-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
47	9045	TUBO	*1104	*1201		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
48	9303	TER-ND	*0103			-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

101.114-24u/03u – without *Taq* polymerase

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CELL LINE VALIDATION SHEET																						
DRB1*04 SSP subtyping kit																						
					Well																	
					17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32		
				Prod. No.	200736217	200736218	200846119	200736220	200846121	200846122	200846123	200846124	200736225	20036226	200736227	200736228	200736229	200736230	200736231	200736232		
	IHWC cell line	DRB1																				
1	9001 SA	*0101			-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-		
2	9280 LK707	*1502	*0405		-	-	-	-	-	-	-	-	-	+	-	-	-	-	-	+		
3	9011 E4181324	*1502			-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-		
4	9275 GU373	*0301			-	-	-	-	-	-	-	+	-	-	-	-	-	-	-	-		
5	9009 KAS011	*1601			-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-		
6	9353 SM	*0407	*0803		-	-	-	-	-	-	-	-	-	+	-	-	+	-	-	+		
7	9020 QBL	*0301			-	-	-	-	-	-	-	+	-	-	-	-	-	-	-	-		
8	9007 DEM	*0401	*1602		-	-	-	-	-	-	-	+	-	+	-	-	-	-	-	+		
9	9026 YAR	*0402			-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	+		
10	9107 LKT3	*0405			-	-	-	-	-	-	-	-	-	+	-	-	-	-	-	+		
11	9051 PITOUT	*0701			-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-		
12	9052 DBB	*0701			-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-		
13	9067 BTB	*0801			-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-		
14	9071 OLGA	*0802			-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-		
15	9075 DKB	*0901			-	-	-	-	-	-	-	-	-	-	-	-	W	-	-	-		
16	9037 SWEIG007	*1101			-	-	-	-	-	-	-	+	-	-	-	-	-	-	-	-		
17	9008 WILJON	*1501			-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-		
18	9257 32367	*0901	*1101		-	-	-	-	-	-	-	+	-	-	-	-	W	-	-	-		
19	9038 BM16	*1201			-	-	-	-	-	-	-	+	-	-	-	-	-	-	-	-		
20	9059 SLE005	*1302			-	-	-	-	-	-	-	-	-	-	-	-	-	-	+	-		
21	9064 AMALA	*1402			-	-	-	-	-	-	-	+	-	-	-	-	-	-	-	-		
22	9056 KOSE	*1302	*1401		-	-	-	-	-	-	-	+	-	-	-	-	-	-	+	-		
23	9124 IHL	*0803	*1414		-	-	-	-	-	-	-	+	-	-	-	-	-	-	-	-		
24	9035 JBUSH	*1101			-	-	-	-	-	-	-	+	-	-	-	-	-	-	-	-		
25	9049 IBW9	*0701			-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-		
26	9285 WT49	*0301			-	-	-	-	-	-	-	+	-	-	-	-	-	-	-	-		
27	9191 CH1007	*0405	*1001		-	-	-	-	-	-	-	-	-	+	-	-	-	-	-	+		
28	9320 BEL5GB	*0416	*0701		-	-	-	-	-	-	-	+	-	+	-	-	-	-	-	+		
29	9050 MOU	*0701			-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-		
30	9021 RSH	*0302			-	-	-	-	-	-	-	+	-	-	-	-	-	-	-	-		
31	9019 DUCAF	*0301			-	-	-	-	-	-	-	+	-	-	-	-	-	-	-	-		
32	9297 HAG	*1303			-	-	-	-	-	-	-	+	-	-	-	-	-	+	+	-		
33	9098 MT14B	*0404			-	-	-	-	-	-	-	-	-	+	-	-	-	-	-	+		
34	9104 DHIF	*1101			-	-	-	-	-	-	-	+	-	-	-	-	-	-	-	-		
35	9302 SSTO	*0403			-	-	-	-	-	-	-	-	-	+	-	-	-	-	-	+		
36	9024 KT17	*0403	*0406		-	-	-	-	-	-	-	-	-	+	-	-	-	-	-	+		
37	9065 HHKB	*1301			-	-	-	-	-	-	-	+	-	-	-	-	-	-	-	-		
38	9099 LZL	*1402			-	-	-	-	-	-	-	+	-	-	-	-	-	-	-	-		
39	9315 CML	*0301	*0401		-	-	-	-	-	-	-	+	-	+	-	-	-	-	-	+		
40	9134 WHONP199	*0701	*0901		-	-	-	-	-	-	-	-	-	-	-	-	W	-	-	-		
41	9055 H0301	*1302			-	-	-	-	-	-	-	-	-	-	-	-	-	-	+	-		
42	9066 TAB089	*0803			-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-		
43	9076 T7526	*0901			-	-	-	-	-	-	-	-	-	-	-	-	W	-	-	-		
44	9057 TEM	*1401			-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-		
45	9239 SHJO	*0701			-	-	-	-	-	-	-	+	-	-	-	-	-	-	-	-		
46	9013 SCHU	*1501			-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-		
47	9045 TUBO	*1104	*1201		-	-	-	-	-	-	-	+	-	-	-	-	-	-	-	-		
48	9303 TER-ND	*0103			-	-	-	-	-	-	-	-	-	-	-	-	-	-	+	-		

CELL LINE VALIDATION SHEET												
DRB1*04 SSP subtyping kit												
					Well							
					33	34	35	36	37	38	39	40
				Prod. No.	200846133	200846134	200846135	200846136	200846137	200846138	200846139	200846140
	IHWC cell line		DRB1									
1	9001	SA	*0101		-	-	-	-	-	-	-	-
2	9280	LK707	*1502	*0405	-	-	-	-	-	-	-	-
3	9011	E4181324	*1502		-	-	-	-	-	-	-	-
4	9275	GU373	*0301		-	-	-	-	-	-	-	-
5	9009	KAS011	*1601		-	-	-	-	-	-	-	-
6	9353	SM	*0407	*0803	-	-	-	-	-	-	-	-
7	9020	QBL	*0301		-	-	-	-	-	-	-	-
8	9007	DEM	*0401	*1602	-	-	-	-	-	-	-	-
9	9026	YAR	*0402		-	-	-	-	-	-	-	-
10	9107	LKT3	*0405		-	-	-	-	-	-	-	-
11	9051	PITOUT	*0701		-	-	-	-	-	-	-	-
12	9052	DBB	*0701		-	-	-	-	-	-	-	-
13	9067	BTB	*0801		-	-	-	-	-	-	-	-
14	9071	OLGA	*0802		-	-	-	-	-	-	-	-
15	9075	DKB	*0901		-	-	-	-	-	-	-	-
16	9037	SWEIG007	*1101		-	-	-	-	-	-	-	-
17	9008	WILJON	*1501		-	-	-	-	-	-	-	-
18	9257	32367	*0901	*1101	-	-	-	-	-	-	-	-
19	9038	BM16	*1201		-	-	-	-	-	-	-	-
20	9059	SLE005	*1302		-	-	-	-	-	-	-	-
21	9064	AMALA	*1402		-	-	-	-	-	-	-	-
22	9056	KOSE	*1302	*1401	-	-	-	-	-	-	-	-
23	9124	IHL	*0803	*1414	-	-	-	-	-	-	-	-
24	9035	JBUSH	*1101		-	-	-	-	-	-	-	-
25	9049	IBW9	*0701		-	-	-	-	-	-	-	-
26	9285	WT49	*0301		-	-	-	-	-	-	-	-
27	9191	CH1007	*0405	*1001	-	-	-	-	-	-	-	-
28	9320	BEL5GB	*0416	*0701	-	-	-	-	-	-	-	-
29	9050	MOU	*0701		-	-	-	-	-	-	-	-
30	9021	RSH	*0302		-	-	-	-	-	-	-	-
31	9019	DUCAF	*0301		-	-	-	-	-	-	-	-
32	9297	HAG	*1303		-	-	-	-	-	-	-	-
33	9098	MT14B	*0404		-	-	-	-	-	-	-	-
34	9104	DHIF	*1101		-	-	-	-	-	-	-	-
35	9302	SSTO	*0403		-	-	-	-	-	-	-	-
36	9024	KT17	*0403	*0406	-	-	-	-	-	-	-	-
37	9065	HHKB	*1301		-	-	-	-	-	-	-	-
38	9099	LZL	*1402		-	-	-	-	-	-	-	-
39	9315	CML	*0301	*0401	-	-	-	-	-	-	-	-
40	9134	WHONP199	*0701	*0901	-	-	-	-	-	-	-	-
41	9055	H0301	*1302		-	-	-	-	-	-	-	-
42	9066	TAB089	*0803		-	-	-	-	-	-	-	-
43	9076	T7526	*0901		-	-	-	-	-	-	-	-
44	9057	TEM	*1401		-	-	-	-	-	-	-	-
45	9239	SHJO	*0701		-	-	-	-	-	-	-	-
46	9013	SCHU	*1501		-	-	-	-	-	-	-	-
47	9045	TUBO	*1104	*1201	-	-	-	-	-	-	-	-
48	9303	TER-ND	*0103		-	-	-	-	-	-	-	-

CERTIFICATE OF ANALYSIS

Olerup SSP® DRB1*04 SSP

Product number:

101.114-24/03 – including *Taq* pol.101.114-24u/03u – without *Taq* pol.

Lot number:

57E

Expiry date:

2010-May-01

Number of tests:

24 tests – Product No. 101.114-24

3 tests – Product No. 101.114-03

Number of wells per test:

40

Well specifications:

Well No.	Production No.	Well No.	Production No.	Well No.	Production No.
1	2007-362-01	17	2007-362-17	33	2008-461-33
2	2008-461-02	18	2007-362-18	34	2008-461-34
3	2007-362-03	19	2008-461-19	35	2008-461-35
4	2007-362-04	20	2007-362-20	36	2008-461-36
5	2007-362-05	21	2008-461-21	37	2008-461-37
6	2007-362-06	22	2008-461-22	38	2008-461-38
7	2007-362-07	23	2008-461-23	39	2008-461-39
8	2007-362-08	24	2008-461-24	40	2008-461-40
9	2007-362-09	25	2007-362-25		
10	2007-362-10	26	2007-362-26		
11	2007-362-11	27	2007-362-27		
12	2008-461-12	28	2007-362-28		
13	2007-362-13	29	2007-362-29		
14	2008-461-14	30	2007-362-30		
15	2007-362-15	31	2007-362-31		
16	2008-461-16	32	2007-362-32		

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

No DNAs carrying the alleles to be amplified by primer solutions 11, 13, 15, 17 to 23, 25, 27, 28 and 33 to 40 were available. The specificities of the primers in primer solutions 11, 13, 17, 18, 19, 20, 27, 28, 35, 37, 38 and 39 were tested by separately adding one additional 5'-primer, respectively, one additional 3'-primer. One of the 3'-primers in primer solutions 13, 14, 18, 19 and 20 was not possible to test. In primer solutions 15, 25, 34 and 36 it was only possible to test the 3'-primers, the 5'-primers were not possible to test. In primer solutions 21, 22, 23, 33 and 40 it was only possible to test the 5'-primers, the 3'-primers were not possible to test. Additional 3'-primers in primer solution 9 and 12 were not possible to test.

101.114-24/03 – including *Taq* polymerase101.114-24u/03u – without *Taq* polymeraseLot No.: **57E**

Lot-specific information

www.olerup.com

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

Date of approval: 2008-May-23

Approved by:

Quality Control, Supervisor

Declaration of Conformity

Product name: Olerup SSP® DRB1*04
Product number: 101.114-24/03, 101-114-24u/03u
Lot number: 57E

Intended use: DRB1*04 high resolution histocompatibility testing

Manufacturer: Olerup SSP AB
Hasselstigen 1
SE-133 33 Saltsjöbaden, Sweden
Phone: +46-8-717 88 27
Fax: +46-8-717 88 18

We, Olerup SSP AB, hereby declare that this product, to which this Declaration of Conformity relates is in conformity with the following Standard(s) and other normative document(s) ISO 9001:2000 and ISO 13485:2003, following the provisions of the 98/79/EC Directive on *in vitro* diagnostic medical devices, Annex II List B, as transposed into the national laws of the Member States of the European Union.

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

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

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

Saltsjöbaden, Sweden
2008-May-23

Olle Olerup
Managing Director

101.114-24/03 – including *Taq* polymerase

101.114-24u/03u – without *Taq* polymerase

Lot No.: **57E**

Lot-specific information

www.olerup.com

101.114-24/03 – including *Taq* polymerase101.114-24u/03u – without *Taq* polymeraseLot No.: **57E**

Lot-specific information

www.olerup.com**ADDRESSES:****Manufacturer:****Olerup SSP AB**, Hasselstigen 1, SE-133 33 Saltsjöbaden, Sweden.**Tel:** +46-8-717 88 27**Fax:** +46-8-717 88 18**E-mail:** info-ssp@olerup.com**Web page:** <http://www.olerup.com>**Distributed by:****Olerup GmbH**, Löwengasse 47 / 6, AT-1030 Vienna, Austria.**Tel:** +43-1-710 15 00**Fax:** +43-1-710 15 00 10**E-mail:** support-at@olerup.com**Web page:** <http://www.olerup.com>**Olerup Inc.**, 901 S. Bolmar St., Suite R, West Chester, PA 19382**Tel:** 1-877-OLERUP1**Fax:** 610-344-7989**E-mail:** info.us@olerup.com**Web page:** <http://www.olerup.com>For information on *Olerup* SSP distributors worldwide, contact **Olerup GmbH**.