

101.708-24– including *Taq* polymerase, IFU-01
 101.708-24u – without *Taq* polymerase, IFU-02

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 “Instructions for Use” (IFU)

Lot No.: **46N**

Lot-specific information

Olerup SSP® HLA-A-B-DR-DQ SSP Combi Tray

Product number:	101.708-24 – including <i>Taq</i> pol. 101.708-24u – without <i>Taq</i> pol.
Lot number:	46N
Expiry date:	2014-August-01
Number of tests:	24 tests
Number of wells per test:	95 +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. 46N.

CHANGES COMPARED TO THE PREVIOUS OLERUP SSP® HLA-A-B-DR-DQ SSP COMBI TRAY LOT

The Lot-specific information for HLA-A-B-DR-DQ Combi Tray including and without *Taq* polymerase is now described in one common Product Insert.

The **HLA-A low resolution** specificity and interpretation tables have been updated for the HLA-A alleles described since the previous *Olerup SSP®* HLA-A-B-DR-DQ SSP Combi Tray lot was made (**Lot No. 24M**).

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

Well	5'-primer	3'-primer	rationale
7	-	Added	Primer added for the A*25:15 allele.
8	Added	-	Primer added for the A*25:15 allele.
11	Added	Added	Improved resolution of HLA-A*68 alleles.
14	Added	-	Primers added for the A*30:47 and 30:52 alleles.

The **HLA-B low resolution** specificity and interpretation tables have been updated for the HLA-B alleles described since the previous *Olerup SSP®* HLA-A-B-DR-DQ SSP Combi Tray lot was made (**Lot No. 24M**).

The **HLA-B low resolution** primer set is unchanged compared to the previous lot.

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The **HLA-DR low resolution** specificity and interpretation tables have been updated for the HLA-DRB alleles described since the previous *Olerup* SSP® HLA-A-B-DR-DQ SSP Combi Tray lot was made (**Lot No. 24M**).

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

Well	5'-primer	3'-primer	rationale
73	Added	-	Primer added for the DRB1*07:22 allele.
76	Added	Exchanged	Improved allelic resolution.
79	-	Modified	Improved allelic resolution.

The **DQ low resolution** specificity and interpretation tables have been updated for the HLA-DQB1 alleles described since the previous *Olerup* SSP® HLA-A-B-DR-DQ SSP Combi Tray lot was made (**Lot No. 24M**).

The **DQ low resolution** primer set is unchanged compared to the previous lot.

Change in revision R01 compared to R00:

1. The HLA-A*68:13 allele is amplified by primer mix 4. This has been corrected in the specificity and interpretation tables.

Change in revision R02 compared to R01:

1. Primer mix 8 may weakly amplify A*34 alleles. A footnote on this has been added to the HLA-A low Specificity Table.

Change in revision R03 compared to R02:

1. Primer mix 39 does not amplify the B*15:101 allele. This has been corrected in the Specificity and Interpretation tables.

Change in revision R04 compared to R03:

1. The HLA-A*03:01:03, 03:09, 03:23:01, 03:89, 03:108, 11:06, 11:18, 24:28, 24:89, 26:03:01-26:03:02, 26:06, 26:07:02, 26:21, 26:30, 30:13, 30:16, 30:44, 30:46, 68:05, 68:15, 68:20 and 68:30 alleles are weakly amplified by primer mix 2. This has been corrected in the Specificity and Interpretation Tables.

2. The DR serology has been corrected in the Specificity Table.

Change in revision R05 compared to R04:

1. Primer mix 16 does not amplify the A*36:02 allele. This has been corrected in the Specificity and Interpretation tables.

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Well 96 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'-Tgg ^{3'}	5'-Tgg ^{3'}	5'-Tgg ^{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*	+	+	+			
C*	+	+	+			
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.

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PRODUCT DESCRIPTION

HLA-A-B-DR-DQ SSP Combi Tray

CONTENT

The primer set contains 5'- and 3'-primers for grouping the HLA-A*01:01 to A*80:02 alleles into the corresponding serological groups A1 to A80.

The primer set contains 5'- and 3'-primers for grouping the B*07:02 to B*83:01 alleles into the corresponding serological groups B7 to B81 as well as primer pairs for recognizing the Bw4 and Bw6 sequence motifs.

The primer set contains 5'- and 3'-primers for grouping the DRB1*01:01 to DRB1*10:04 alleles into the corresponding serological groups DR1 to DR18 as well as primer pairs for recognizing the DRB3, DRB4 and DRB5 groups of alleles.

The primer set contains 5'- and 3'-primers for grouping the DQB1 alleles into the serological groups DQ2 to DQ9.

Please note that DQB1 amplifications usually are somewhat less pronounced than e.g. DRB and DQA1 amplifications even when using the same DNA preparation and exactly the same experimental procedures.

PLATE LAYOUT

Each test consists of 96 PCR reactions in a 96 well 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
49	50	51	52	53	54	55	56
57	58	59	60	61	62	63	64
65	66	67	68	69	70	71	72
73	74	75	76	77	78	79	80
81	82	83	84	85	86	87	88
89	90	91	92	93	94	95	ctrl

Wells 1 to 21 – HLA-A low resolution primers.

Wells 22 to 64 – HLA-B low resolution primers.

Wells 65 to 87 – HLA-DR low resolution primers.

Wells 88 to 95 – HLA-DQ low resolution primers.

Well 96 – Negative Control.

The 96 well PCR plate is marked with 'A-B-DR-DQ' in silver/gray ink.

Well No. 1 is marked with the Lot No. '46N'.

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.

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INTERPRETATION

Only HLA-A alleles will be amplified by the 21 wells of the HLA-A low resolution primer set, **wells 1 to 21**, except that primer mix 5 will amplify the B*18:27 allele. Thus, the interpretation of HLA-A low resolution is only influenced by this HLA-B allele and not by other HLA Class I genes.

Only HLA-B alleles will be amplified by the 43 wells of the HLA-B low resolution, primer set, **wells 22 to 64**, except that the HLA-C*03:05, 03:25 and 03:27 alleles will be amplified by primer mix 24, the C*01:30 allele will be amplified by primer mix 25, the A*23:31, A*24:106 and C*16:10 alleles will be amplified by primer mix 27, the C*07:46 allele will be amplified by primer mix 29, the A*24:174 allele will be amplified by primer mix 33, the C*03:102 allele will be amplified by primer mixes 37 and 58, the C*15:51 allele will be amplified by primer mix 41, the C*03:129 allele will be amplified by primer mix 45, the C*15:25 allele will be amplified by primer mix 48, the C*15:39 allele will be amplified by primer mix 49, the C*15:02:04 allele will be amplified by primer mix 58, the C*03:12, 03:19 and 03:102 alleles will be amplified by primer mix 59 and the A*26:68, A*68:56, C*06:20 and C*12:50 alleles will be amplified by primer mix 62. Thus, the interpretation of HLA-B low resolution typings is only influenced by these five HLA-A alleles and sixteen HLA-C alleles and not by other HLA class I genes.

Only HLA-DRB alleles will be amplified by the 23 wells the DR low resolution primer set, **wells 65 to 87**. Thus, the interpretation of DR low resolution typings is not influenced by other HLA class II genes.

Only the DQB1 alleles will be amplified by the 8 wells the DQ low resolution primer set, **wells 88 to 95**. Thus, the interpretation of DQ low resolution typings is not influenced the DQB2 and DQB3 genes.

UNIQUELY IDENTIFIED ALLELES

All the HLA-A alleles, i.e. **A*01:01 to A*80:02**, recognized by the HLA Nomenclature Committee in January 2012¹ will be amplified by the primers in the HLA-A low resolution primer set, **wells 1 to 21**. The HLA-A alleles will be grouped into their corresponding serological specificities².

All the HLA-B alleles, i.e. **B*07:02 to B*83:01**, recognized by the HLA Nomenclature Committee in January 2012¹ will be amplified by the primers in the HLA-B low resolution primer set, **wells 22 to 64**. The HLA-B alleles will be grouped into their corresponding serological specificities³.

All the HLA-DRB1, -DRB3, -DRB4⁴ and -DRB5 alleles, i.e. **DRB1*01:01:01 to 10:04, DRB3*01:02:01 to DRB3*03:03, DRB4*01:01:01:01 to DRB4*01:08, DRB5*01:01:01 to DRB5*02:05**, recognized by the HLA Nomenclature Committee in January 2012¹ will be amplified by the primers in the DR low resolution primer set, **wells 65 to 87**. The HLA-DRB alleles will be grouped into their corresponding serological specificities⁵.

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All the DQB1 alleles, i.e. **DQB1*05:01:01:01 to 05:14**, **DQB1*06:01:01 to 06:47**, **DQB1*02:01:01 to 02:06**, **DQB1*03:01:01:01 to 03:39** and **DQB1*04:01:01 to 04:08**, recognized by the HLA Nomenclature Committee in January 2012¹ will be amplified by the primers in the DQ low resolution primer set. The DQB1 alleles will be grouped into their corresponding serological specificities⁶, i.e.:

DQ5(1) =	DQB1*05:01:01-05:05
DQ6(1) =	DQB1*06:01:01-06:44
DQ2 =	DQB1*02:01:01-02:05
DQ3 =	DQB1*03:06, 03:10, 03:14
DQ7(3) =	DQB1*03:01:01-03:01:06, 03:04, 03:09, 03:13, 03:16, 03:19
DQ8(3) =	DQB1*03:02:01-03:02:05, 03:05:01-03:05:04, 03:07-03:08, 03:11, 03:18
DQ9(3) =	DQB1*03:03:02:01-03:03:04, 03:12, 03:15, 03:17, 03:20
DQ4 =	DQB1*04:01-04:02

¹HLA-A, HLA-B, HLA-DRB and HLA-DQB1 alleles listed on the IMGT/HLA web page 2012-January-12, release 3.7.0, www.ebi.ac.uk/imgt/hla.

²The A*36 alleles will give rise to identical amplification patterns as some A*01 alleles. These alleles can be separated by the A*01 and A*36 high resolution SSP primer sets.

The A*03:01:23, 03:08, 03:32, 03:36N, 03:57, 03:59, 03:72, 03:89, 03:107-03:108 and 03:111 and the A*24:92 alleles will give rise to identical amplification patterns. These alleles can be separated by the respective high resolution SSP primer sets.

The A*23:14 and the A*24:05, 24:13:02 and 24:24 alleles will give rise to identical amplification patterns. These four alleles can be separated by the respective high resolution SSP primer sets.

³The B*08:26, 08:50, 08:62 and the B*42:07 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*13:04, 13:10, 13:21 and 13:35 and the B*44:135 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*14:08 and the B*39:25N, 39:30, 39:32-39:34, 39:43, 39:47 and 39:50 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*18:29 and the B*35:09:01-35:09:03, 35:18, 35:31-35:32:02, 35:37, 35:53N, 35:64, 35:68:01-35:68:02, 35:75, 35:88, 35:99, 35:118-35:119, 35:127, 35:151 and 35:174 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*41:09 and the B*45:02-45:03 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*51:104 and 51:118N and the B*58:08:01-58:08:02 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*54:01:02 and the B*55:01:07, 55:02:01-55:02:06, 55:07, 55:10, 55:12, 55:16, 55:19, 55:26, 55:30, 55:35, 55:37, 55:39, 55:41-55:43, 55:47-55:48 and 55:50 and the B*56:10 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*55:04, 55:08, 55:13, 55:23, 55:27, 55:32, 55:46 and 55:49 and the B*56:15, 56:18-56:19N, 56:22 and 56:31-56:32 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 57:01:01-57:01:04, 57:01:06-57:03:02, 57:05-57:06, 57:08, 57:10, 57:15-57:20, 57:22-57:23, 57:25-57:30, 57:32-57:44, 57:46, 57:48-57:50, 57:52 and the B*58:36 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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⁴The DRB4*02:01N and DRB4*03:01N null alleles will not be amplified by the DR low resolution primer set.

⁵The DRB1*08:09 and the DRB1*14:15 alleles yield identical amplification patterns with the DR low resolution primer set. These alleles can be separated by the respective high resolution primer sets. The DRB1*08:20 and the DRB1*13:18, 13:47 and 13:55 alleles yield identical amplification patterns with the DR low resolution primer set. These alleles can be separated by the respective high resolution primer sets.

The DRB1*08:31, 08:41 and DRB1*11:67 alleles yield identical amplification patterns with the DR low resolution primer set. These alleles can be separated by the respective high resolution primer sets. The DRB1*13:13 and 13:119 and the DRB1*14:84 and 14:116 alleles yield identical amplification patterns with the DR low resolution primer set. These alleles can be separated by the respective high resolution primer sets.

⁶The serological split of the DQB1*05:05, DQB1*06:06 to 06:07 alleles, the DQB1*06:10, 06:13, 06:15-06:24 and 06:27 to 06:44, the DQB1*02:04-02:06, the DQB1*03:07-03:09 and 03:11- 03:38 alleles and the DQB1*04:0301-04:08 alleles is not known. In this table we have used the expert-assigned serological grouping in Tissue Antigens (2009) 73:95-170, and also inferred the serological grouping from the naming of the sequence-defined allele.

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SPECIFICITY TABLE

HLA-A low resolution primer set

Specificities and sizes of the PCR products of the 21 primer mixes used for
 HLA-A low resolution SSP typing

Primer Mix	Size of spec. PCR product ¹	Size of control band ²	HLA-A serology ³	Amplified HLA-A alleles ^{4,5,6}
1^{7,8}	120, 140, 225 bp	800 bp	A1, A36	*01:01:01:01-01:04N, 01:06-01:33, 01:35-01:104, 03:18, 03:135, 11:94, 11:112, 36:01-36:05
2⁸	210, 255, 365, 415 bp	800 bp	A2, A19, A28, A203, A210, A3, A11, A9, A26, A30, A68	*02:01:01:01-02:01:15, 02:01:17-02:01:19, 02:01:21-02:22:02, 02:24:01-02:35:01, 02:35:03-02:47, 02:49-02:77, 02:78 ^w , 02:79:01-02:97:02, 02:99, 02:101:01-02:128, 02:130-02:336, 03:01:03 ^w , 03:09 ^w , 03:23:01 ^w , 03:89 ^w , 03:108 ^w , 11:06 ^w , 11:18 ^w , 24:28 ^w , 24:89 ^w , 26:03:01-26:03:02 ^w , 26:06 ^w , 26:07:02 ^w , 26:21 ^w , 26:30 ^w , 30:13 ^w , 30:16 ^w , 30:44 ^w , 30:46 ^w , 68:05 ^w , 68:15 ^w , 68:20 ^w , 68:30 ^w
3¹⁰	205, 235 bp	1070 bp	A1, A3, A11, A32, A34, A36	*01:12, 01:19, 01:21, 03:01:01:01-03:17, 03:19-03:74, 03:76-03:94, 03:96-03:133, 11:25, 11:60, 24:92, 32:04, 33:49 ^w , 34:02:01, 34:02:02 ^w , 34:03-34:04, 34:07-34:09, 36:02
4	190 bp	800 bp	A1, A2, A3, A11, A26, A30, A36, A68	*01:01:01:01-01:01:22, 01:01:24-01:04N, 01:06-01:07, 01:09-01:11N, 01:13, 01:16N-01:18N, 01:20-01:29, 01:31N-01:33, 01:35-01:78, 01:80-01:98, 01:100-01:104, 02:78, 02:169, 03:12, 03:18, 03:88, 03:135 ^w , 11:01:01-11:27, 11:29-11:52Q, 11:54-11:112, 26:19, 26:72, 30:08, 36:04, 68:13, 68:66
5¹¹	135, 175, 210 bp	800 bp	A2, A23, A24, A29, A80	*23:01:01-23:50, 24:05, 24:13:02, 24:24, 29:07, 30:56, 31:29, 80:01-80:02, B*18:27
6⁹	175, 200 bp	1070 bp	A2, A23, A24, A26, A33	*02:17:01 ^w -02:17:02 ^w , 23:14, 24:02:01:01-24:11N, 24:13:01-24:13:02, 24:17-24:50, 24:54-24:56, 24:58-24:63, 24:66-24:91, 24:93, 24:95-24:113, 24:115-24:137, 24:139-24:187, 24:189-24:190, 26:16, 33:19, 68:45
7	165, 200 bp	800 bp	A2/A28, A3, A10, A11, A25, A26, A32, A34, A66, A68, A69	*01:51, 02:55, 03:24, 03:50, 11:10, 25:01:01-25:16, 26:01:01-26:06, 26:08-26:15, 26:17-26:18, 26:20-26:43:02, 26:45-26:63, 26:65-26:71N, 29:28, 32:15, 33:51, 34:01:01-34:09, 66:01-66:16, 68:01:01:01-68:85, 69:01
8^{7,13}	75 bp	800 bp	A25, A32	*25:01:01-25:16, 32:01:01-32:02, 32:04, 32:06-32:37

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9⁷	85 bp	1070 bp	A2, A26, A33	*01:51, 01:83, 02:146, 26:01:01-26:02, 26:04, 26:07:01-26:18, 26:20, 26:22-26:29, 26:31-26:43:02, 26:45-26:71N, 33:13, 33:48, 68:84
10^{7,8}	80, 175, 500 bp	1070 bp	A1, A11, A24, A26, A31, A34, A66	*01:13, 01:28, 03:63, 03:88, 11:01:01-11:27, 11:29-11:52Q, 11:54-11:112, 24:19, 24:44, 26:03:01-26:03:02, 26:06, 26:21, 31:03, 34:01:01-34:08, 66:01, 66:04-66:11, 66:13-66:15, 80:02
11⁷	125, 185 bp	800 bp	A3, A10, A25, A26, A31, A34, A43, A66	*02:309, 03:01:19, 11:11, 25:05-25:06, 26:09, 26:54, 31:03-31:04, 34:01:01-34:09, 43:01, 66:02-66:03, 66:16
12	175, 225 bp	1070 bp	A1, A2, A3, A25, A26, A34, A43, A66	*01:13, 02:34-02:35:03, 02:56:01-02:56:02, 02:62, 02:103, 02:135, 03:01:01:01-03:01:22, 03:01:24-03:07, 03:09-03:11N, 03:13-03:31, 03:33-03:35, 03:37-03:40, 03:42-03:56, 03:58, 03:60-03:71, 03:73-03:87, 03:90-03:106, 03:109-03:110, 03:112-03:133, 03:135, 25:01:01-25:05, 25:07-25:16, 26:01:01-26:01:20, 26:01:22, 26:02 ^w , 26:03:01-26:03:02, 26:05-26:08, 26:10-26:33, 26:35-26:43:02, 26:45-26:72, 30:55, 34:08, 43:01, 66:01, 66:04-66:15, 68:71, 74:13
13⁷	100, 200, 240 bp	1070 bp	A29, A33	*02:237, 02:309, 03:95, 26:19, 26:22, 29:01:01:01-29:32, 30:57, 31:03-31:04, 33:13, 33:48, 34:04, 66:09
14^{7,8,9,12}	90, 135, 205 bp	1070 bp	A1, A30	*01:13, 01:28, 03:43, 03:82, 30:01:01-30:04:02, 30:06-30:20, 30:22-30:58, 31:35
15	240, 370, 395 bp	1070 bp	A31, A32	*02:237, 03:95, 29:14, 31:01:02-31:56, 31:58-31:59, 32:05, 33:53
16	140, 180 bp	1070 bp	A29, A32	*01:95, 03:43, 03:82, 29:13, 31:35, 32:01:01-32:03, 32:05-32:37, 74:07
17	200 bp	1070 bp	A33, A68	*02:243, 33:01:01-33:01:06, 33:03:01-33:50, 33:52-33:54, 68:29
18	160, 200 bp	800 bp	A74	*29:19, 74:01-74:15
19¹¹	220, 245 bp	800 bp	A2, A210, A25, A30, A68	*02:34-02:35:03, 02:46, 02:48, 02:56:01-02:56:02, 02:62, 02:70, 02:78, 02:103, 02:129, 25:05, 26:54, 68:01:01:01-68:85
20	240, 375 bp	800 bp	A2, A24, A26, A68, A69	*02:55, 02:243, 24:82, 26:22, 33:22, 66:09, 68:29, 69:01
21^{7,11}	75, 160, 240, 495 bp	800 bp	A2, A26, A68, A80	*02:55, 03:41, 03:63, 03:75, 03:88, 24:18, 26:03:01-26:03:02, 26:05-26:06, 26:21, 26:30, 33:24, 36:02, 68:05, 68:15, 68:20, 80:01

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

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

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

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

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

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

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

In addition, wells number 2, 4, 5, 7, 8, 11 and 18 to 21 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-A alleles is not known. The grouping of not serologically defined alleles is taken from Tissue Antigens 73, 95-170, 2009.

⁴For several HLA-A alleles only partial 1st exon nucleotide sequences are available. We assume that unknown sequences are conserved within allelic groups.

Nucleotide sequence information is available for only exons 2 and 3 of many HLA Class I alleles and for only exon 2 of many HLA Class II alleles and not for other exons or for the introns of these alleles. We assume that unknown sequences in these exons and in the introns are conserved within loci and within allelic groups.

⁵The A*36 alleles will give rise to identical amplification patterns as a number of A*01 alleles. These alleles can be separated by the A*01 and A*36 high resolution SSP primer sets.

The A*03:01:23, 03:08, 03:32, 03:36N, 03:57, 03:59, 03:72, 03:89, 03:107-03:108 and 03:111 and the A*24:92 alleles will give rise to identical amplification patterns. These alleles can be separated by the respective high resolution SSP primer sets.

The A*23:14 and the A*24:05, 24:13:02 and 24:24 alleles will give rise to identical amplification patterns. These four alleles can be separated by the respective high resolution SSP primer sets.

⁶Primer mix 5 will amplify the B*18:27 allele.

⁷Specific PCR fragments shorter than 125 base pairs have a lower intensity and are less sharp than longer PCR bands.

⁸The primer pairs in vials 1, 2, 10 and 14 will in many samples give rise to two or three HLA-specific PCR fragments.

⁹Primer mixes 6 and 14 may yield less specific PCR product than the other HLA-A low primer mixes.

¹⁰Primer mix 3 may faintly amplify the A*30:04, 30:06, 30:17 and 30:29 alleles.

¹¹Primer mix 5, 19 and 21 may give rise to primer oligomer formation.

¹²Primer mix 14 may have tendencies of unspecific amplifications.

¹³Primer mix 8 may weakly amplify the A*34 alleles.

‘w’, might be weakly amplified.

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SPECIFICITY TABLE

HLA-B low resolution primer set

Specificities and sizes of the PCR products of the 43 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-B alleles ^{4,5}
22¹⁰	285 bp	800 bp	7, 15, 37, 40, 41, 42, 48	*07:02:01-07:06, 07:08-07:18:02, 07:20-07:32, 07:34-07:39, 07:41-07:52, 07:54-07:59, 07:61-07:76, 07:79-07:83, 07:85-07:99, 07:101-07:121, 07:123-07:138, 07:140-07:144, 08:01:01-08:05, 08:07-08:08N, 08:10-08:11, 08:13-08:15, 08:17-08:80, 35:66, 35:87, 37:07, 40:15-40:16, 40:30-40:32, 40:34, 40:45, 40:59, 40:80, 40:98, 40:137, 40:160, 41:02:01-41:02:04, 41:04, 41:10-41:11, 41:13, 41:18-41:19, 42:01:01-42:02, 42:05:01-42:07, 42:09-42:13, 42:15-42:16, 48:01:01-48:01:03, 48:05-48:12, 48:14-48:20, 48:22, 48:27, 53:15, 81:01-81:05
23	215 bp	1070 bp	8, 15, 44	*08:01:01-08:05, 08:07-08:25, 08:27-08:49, 08:51-08:61, 08:63-08:64, 08:66-08:80, 15:142, 15:180, 44:49, 51:68
24	140, 235 bp	1070 bp	7, 8, 13, 15, 35, 40, 4005, 44, 46, 53, 57, 58	*07:20, 07:24, 07:60, 07:100, 07:131, 08:21, 08:25, 13:01:01-13:04, 13:06-13:08Q, 13:10-13:23, 13:25-13:38, 13:40-13:52, 15:07:01-15:07:02, 15:36 ^w , 15:45, 15:55, 15:68, 15:89 ^w , 15:126, 15:205, 15:207, 35:05:01-35:05:02, 35:16-35:17, 35:22, 35:30, 35:51, 35:58, 35:72, 35:89, 35:97, 35:113-35:114, 35:125, 35:164, 40:05, 40:71, 40:174, 44:08 ^w , 44:54, 44:57 ^w , 44:60, 44:106, 44:110, 44:135, 46:12, 46:20, 51:64, 53:14, 55:51, 58:18, C*03:05, 03:25, 03:27
25^{7,8}	130, 265 bp	800 bp	13, 14, 15, 35, 40, 41, 44, 45, 47, 49, 50	*13:01:01-13:04, 13:06-13:13, 13:15-13:23, 13:25-13:52, 14:01:01-14:04, 14:07N, 14:09, 14:11-14:12, 14:14-14:28, 15:46, 15:53, 15:106, 15:212, 18:44, 35:46-35:47, 35:63, 35:154, 40:01:01-40:01:23, 40:07, 40:10:01-40:10:02, 40:14:01-40:16, 40:22N-40:23, 40:25, 40:30-40:34, 40:36, 40:38, 40:42-40:43, 40:45, 40:47-40:49, 40:51-40:55, 40:58-40:63, 40:65-40:67, 40:69, 40:72:01-40:73, 40:76-40:77, 40:79-40:81, 40:84, 40:87:01-40:88, 40:92, 40:100-40:102, 40:106, 40:108, 40:110, 40:112-40:114, 40:116-40:118N, 40:121, 40:123-40:126, 40:128-40:130, 40:132, 40:134-40:136, 40:139-40:141, 40:146-40:147, 40:150-40:156, 40:158, 40:160, 40:163-40:164, 40:166, 40:168, 40:171-40:172, 40:175, 40:178-40:179, 41:01-41:19, 44:02:01-44:03:06, 44:03:08-44:05:03, 44:09-44:39, 44:41:01-44:43:02, 44:45-44:56N, 44:58N-44:80, 44:82,

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26⁸	185, 235 bp	800 bp	14, 16, 27, 37, 38, 39, 47, 64, 67	*14:01:01-14:01:02, 14:07N-14:08, 14:10, 14:12, 14:14, 14:19, 14:26, 27:01-27:05:15, 27:05:17-27:06, 27:08-27:10, 27:12-27:13, 27:16-27:18, 27:20, 27:23, 27:26-27:27, 27:29, 27:31, 27:35-27:37, 27:39-27:42, 27:44-27:46, 27:48-27:61, 27:64N-27:69, 27:72-27:75, 27:77-27:80, 27:82-27:86, 37:02, 38:01:01-38:02:02, 38:03, 38:07-38:24, 38:26-38:32, 38:34N-38:37, 39:01:01:01-39:01:01:02L, 39:01:03-39:01:08, 39:01:10-39:02:01, 39:03, 39:05:01-39:09, 39:11, 39:14-39:15, 39:18, 39:19:02, 39:22, 39:24:01-39:44, 39:46-39:48, 39:50-39:62, 39:64-39:68, 47:04-47:05, 48:21, 48:26, 67:01:01, 67:03
27	190 bp	800 bp	14, 35, 38, 39, 65	*07:28, 14:02:01-14:02:02, 14:02:04-14:02:05, 14:03-14:06:02, 14:09, 14:11, 14:13, 14:15-14:18, 14:20, 14:22-14:23, 14:25, 14:27, 15:77, 15:189, 15:233, 35:26, 38:05, 38:33, 39:04, 44:16, 44:37, 44:64:01-44:64:02, 44:91, 44:132, 52:26, 57:04, A*23:31, A*24:106, C*16:10
28	290 bp	1070 bp	15, 62, 63, 75, 76, 77, 46	*15:01:01:01-15:01:03, 15:01:06-15:02:05, 15:03:03-15:08, 15:10:02-15:11:03, 15:11:05-15:15, 15:17:01:01-15:17:02, 15:19-15:21, 15:24-15:28, 15:30-15:36, 15:38:01-15:40, 15:42-15:46, 15:48, 15:50, 15:55-15:58, 15:60, 15:63, 15:65-15:66, 15:70-15:71, 15:73, 15:75-15:79N, 15:81-15:89, 15:92, 15:94N, 15:96-15:97, 15:101-15:102, 15:104-15:107, 15:109-15:113, 15:116-15:118, 15:120-15:122, 15:125-15:126, 15:128-15:129, 15:135-15:150, 15:152, 15:154-15:155, 15:157, 15:159-15:160, 15:162-15:172, 15:174-15:175, 15:177-15:179, 15:181N-15:185, 15:187-15:196, 15:199, 15:201-15:209N, 15:211, 15:213-15:219, 15:223-15:225, 15:227-15:228, 15:230-15:234, 15:236-15:237, 46:01:01-46:30
29	165, 220, 330 bp	1070 bp	8, 15, 35, 37, 40, 41, 42, 44, 45, 51, 56, 57, 70, 71, 72	*08:01:01-08:05, 08:08N-08:12:03, 08:15-08:19N, 08:21-08:24, 08:26-08:27, 08:29-08:36, 08:38-08:39, 08:41-08:48, 08:50-08:54, 08:56-08:69, 08:71-08:73, 08:75-08:76, 08:78, 08:80, 13:46, 15:03:01-15:03:03, 15:09-15:10:02, 15:18:01-15:18:04, 15:23, 15:29, 15:37, 15:46-15:47, 15:49, 15:51-15:54, 15:61-15:62, 15:64, 15:69, 15:72, 15:74, 15:80, 15:83, 15:90-15:91, 15:93, 15:98-15:99, 15:103, 15:106, 15:108, 15:114-15:115, 15:119, 15:123-15:124, 15:127, 15:131-15:134, 15:143, 15:151, 15:153, 15:156, 15:158, 15:161, 15:173, 15:176, 15:186, 15:197-15:198, 15:200, 15:210, 15:212, 15:220-15:221, 15:226N, 15:229, 15:235, 15:238, 35:87, 37:12,

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30^{8,9,11}	165, 190, 390 bp	1070 bp	15, 35, 40, 44, 51, 52, 56, 58, 62, 63, 70, 78	*15:01:02, 15:09, 15:16:01-15:17:02, 15:67, 15:95, 15:162, 15:168, 15:177, 15:196, 15:208, 15:216, 15:222, 15:230, 35:01:10, 35:04:02, 40:26, 40:28, 44:62, 49:18, 50:14, 51:01:01-51:01:03, 51:01:05-51:02:03, 51:02:05-51:09:02, 51:11N-51:12, 51:13:02-51:14, 51:16-51:23, 51:24:03-51:24:04, 51:26-51:33, 51:37-51:41N, 51:43-51:44N, 51:46, 51:48-51:61, 51:63-51:80, 51:82-51:91, 51:94-51:98N, 51:100-51:126, 52:01:01:01-52:01:04, 52:01:06-52:13, 52:15-52:24, 52:26-52:27, 56:05:01-56:06, 56:21, 58:08:01-58:08:02, 78:01:01-78:07
31	180 bp	800 bp	13, 15, 40, 55, 62, 70, 71, 72, 75	*07:78, 13:01:01-13:02:12, 13:07N-13:09, 13:11, 13:14-13:20, 13:22:01-13:23, 13:25, 13:27-13:34, 13:36-13:45, 13:47, 13:49N-13:50, 13:52, 40:48, 45:10, 49:07, 55:09, 55:22, 55:24
32⁶	105, 195 bp	1070 bp	7, 8, 15, 27, 38, 39, 40, 44, 45, 48, 55, 72	*07:27, 07:50, 08:04, 08:17, 08:54, 15:03:01-15:03:03, 15:47, 15:49, 15:54, 15:61-15:62, 15:64, 15:68-15:69, 15:91, 15:98, 15:103, 15:123, 15:127, 15:131-15:132, 15:151, 15:156, 15:158, 15:173, 15:210, 15:220, 15:235, 18:37, 27:18, 27:29, 37:28, 38:03, 39:02:01-39:02:02, 39:08, 39:13:01-39:13:02, 39:23, 39:39, 39:49, 40:12, 40:46, 40:93, 42:11, 44:10, 44:15, 44:18, 44:40, 44:44, 44:130, 45:01, 45:05-45:07, 45:11-45:13, 48:01:01-48:05, 48:07-48:27, 49:20, 50:02, 52:16, 55:18, 82:01-82:03
33	195 bp	1070 bp	15, 35, 37, 38, 44, 45, 58, 76	*15:12, 15:14, 15:19, 15:91, 15:131, 15:161, 18:54, 18:56, 35:45, 35:71, 37:01:01-37:09, 37:12-37:13, 37:15-37:21, 37:23-37:28, 37:30N-37:31, 38:17, 44:17, 44:43:01-44:43:02, 45:09, 46:17, 53:22, 58:07, A*24:174
34⁶	105, 395, 435 bp	1070 bp	7, 15, 41, 42, 59, 62, 63, 77	*07:04, 07:25, 15:09-15:10:02, 15:13:01-15:13:02, 15:16:01-15:18:04, 15:21, 15:23-15:24, 15:37, 15:44, 15:51-15:52, 15:66-15:67, 15:72, 15:80, 15:87, 15:90, 15:93, 15:95, 15:99, 15:108, 15:114-15:115, 15:119, 15:124, 15:133-15:134, 15:153, 15:157, 15:161-15:162, 15:168, 15:176-15:177, 15:186, 15:189, 15:196-15:198, 15:200, 15:208, 15:216, 15:221-15:222, 15:226N, 15:229-15:230, 15:238, 40:136, 41:08, 42:05:01-42:05:02
35^{6,10}	115, 150 bp	1070 bp	18	*18:01:01-18:15, 18:17N-18:28, 18:30-18:68
36⁶	80 bp	1070 bp	27, 40, 44	*07:73, 27:01-27:21, 27:23-27:51, 27:53-27:66N, 27:68-27:74, 27:76-27:86, 38:22, 40:46, 40:93, 44:40, 44:44, 44:130

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37	150 bp	800 bp	13, 15, 18, 27, 35, 37, 39, 40, 44, 48, 51, 53, 55, 56, 57, 58, 62, 75, 77	*08:49, 13:01:01-13:01:06, 13:06-13:07N, 13:12-13:13, 13:17, 13:20, 13:22:01-13:23, 13:25-13:26, 13:28-13:29, 13:36, 13:39, 13:43, 13:50-13:52, 14:10, 15:02:01-15:02:05, 15:13:01-15:13:02, 15:20-15:21, 15:25:01-15:25:03, 15:36, 15:44, 15:62, 15:77, 15:80, 15:85, 15:88-15:89, 15:106, 15:112, 15:121, 15:139, 15:144, 15:154, 15:165, 15:170, 15:194, 15:204, 15:213-15:214, 15:223, 18:22, 27:19, 27:30, 35:01:01:01-35:04:03, 35:06-35:08:05, 35:10-35:17, 35:19-35:21, 35:23-35:30, 35:33-35:36, 35:38-35:42:02, 35:45-35:50, 35:52, 35:54-35:57, 35:59, 35:61-35:63, 35:65Q, 35:69-35:71, 35:74, 35:76-35:78, 35:80-35:85, 35:90-35:96, 35:98, 35:100-35:101:02, 35:103-35:113, 35:115-35:116, 35:120-35:126, 35:128-35:134N, 35:136-35:150, 35:152-35:173N, 35:175-35:184, 35:186, 37:01:01-37:01:07, 37:03N-37:06, 37:08, 37:10-37:11, 37:13-37:31, 38:20, 39:42, 40:28, 44:02:01:01-44:14, 44:16-44:17, 44:19N, 44:21-44:30, 44:32-44:40, 44:42-44:46, 44:48-44:52N, 44:55-44:64:02, 44:66-44:98, 44:101-44:105, 44:107-44:134, 44:136-44:137, 44:139, 48:02:01-48:02:02, 48:25, 51:04, 51:42, 51:46, 51:56:01-51:56:02, 53:01:01-53:13, 53:15-53:27, 55:14, 56:09, 56:11-56:12, 57:01:01-57:01:04, 57:01:06-57:10, 57:12, 57:14-57:20, 57:22-57:30, 57:32-57:46, 57:48-57:52, 58:01:01-58:01:02, 58:01:04-58:01:09, 58:04-58:05, 58:09-58:15, 58:17N, 58:19, 58:21-58:24, 58:28-58:36, 83:01, C*03:102
38	135 bp	1070 bp	7, 8, 18, 35, 37, 39, 56, 78	*07:65, 07:134, 08:32, 15:202, 18:01:01-18:08, 18:10-18:15, 18:17N-18:36, 18:38-18:47, 18:50-18:53, 18:55-18:65, 18:68, 35:01:01:01-35:03:02, 35:03:04-35:08:04, 35:09:01-35:18, 35:20:01-35:24:02, 35:28-35:45, 35:48, 35:50-35:55, 35:57-35:62, 35:64-35:72, 35:74-35:153, 35:155-35:184, 35:185, 35:186, 37:11, 39:19:01-39:19:02, 56:06, 78:01:01-78:05, 78:07
39^{6,10}	60, 245, 400 bp	1070 bp	15, 62, 63, 70, 71, 72, 75, 76, 77, 40, 44	*15:01:01:01-15:01:04, 15:01:06-15:21, 15:23-15:40, 15:42-15:58, 15:60-15:67, 15:69-15:99, 15:102-15:129, 15:131-15:179, 15:181N-15:235, 15:237-15:238, 40:12, 44:10, 82:01-82:03
40^{9,10}	210 bp	800 bp	7, 8, 15, 18, 37, 38	*07:27, 08:49, 18:54, 37:01:01-37:31, 38:17
41⁸	170 bp	800 bp	15, 35, 38, 39, 67	*08:55, 15:69, 15:186, 35:35, 38:01:01-38:09, 38:11-38:21, 38:23-38:29, 38:31-38:35, 39:01:01:01-39:01:01:02L, 39:01:03-39:20, 39:22-39:24:02, 39:26-39:29, 39:31, 39:35, 39:37-39:42, 39:44-39:46, 39:48-39:49, 39:51-39:68, 51:101, 58:20, 67:01:01-67:03, C*15:51

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42^{6,10}	110 bp	1070 bp	38	*38:01:01-38:02:02, 38:03, 38:05, 38:08-38:24, 38:26-38:34N, 38:36-38:37, 52:01:10
43	395 bp	1070 bp	14, 38, 39, 64, 65	*07:69, 07:85, 08:65, 14:01:01-14:20, 14:22-14:28, 38:01:01-38:02:03, 38:04-38:05, 38:08-38:25, 38:27-38:37, 39:01:01:01-39:01:01:02L, 39:01:03-39:01:12, 39:03-39:07, 39:09, 39:11-39:12, 39:14-39:15, 39:18-39:19:02, 39:22, 39:24:01-39:38Q, 39:40N-39:48, 39:50-39:57, 39:59-39:62, 39:64-39:68
44	160, 425 bp	1070 bp	7, 8, 14, 39, 40, 41, 42, 45, 48, 50, 60, 64, 65, 67, 73	*07:02:01-07:26, 07:28-07:35, 07:37, 07:39-07:64, 07:66-07:80, 07:82-07:144, 08:01:01-08:01:16, 08:04-08:05, 08:07-08:35, 08:37-08:51, 08:53-08:77, 08:79-08:80, 14:01:01-14:02:04, 14:02:06-14:28, 27:14, 27:81, 39:01:01:01-39:01:01:02L, 39:01:03-39:20, 39:22-39:24:01, 39:25N-39:68, 40:01:01-40:01:23, 40:06:01:01-40:07, 40:09 [?] -40:11:02 [?] , 40:14:01 [?] -40:15 [?] , 40:16, 40:18 [?] , 40:21 [?] -40:22N [?] , 40:23, 40:24 [?] -40:38 [?] , 40:42 [?] -40:43 [?] , 40:44, 40:45 [?] -40:46 [?] , 40:48 [?] -40:50 [?] , 40:51, 40:52 [?] , 40:53, 40:54 [?] -40:58 [?] , 40:59-40:60, 40:61 [?] -40:65 [?] , 40:66, 40:67 [?] -40:69 [?] , 40:70, 40:71 [?] , 40:72:01-40:73, 40:74 [?] , 40:75, 40:77, 40:78 [?] , 40:79, 40:80 [?] -40:82 [?] , 40:83, 40:84 [?] -40:85 [?] , 40:86, 40:87:01 [?] -40:88 [?] , 40:90 [?] -40:92 [?] , 40:93, 40:95 [?] , 40:96, 40:98 [?] -40:102 [?] , 40:103, 40:104 [?] -40:108 [?] , 40:109-40:110, 40:111 [?] -40:116 [?] , 40:118N [?] -40:121 [?] , 40:123 [?] , 40:124:01, 40:124:02 [?] -40:126 [?] , 40:127, 40:128 [?] -40:130 [?] , 40:131, 40:132 [?] -40:134 [?] , 40:136 [?] -40:137 [?] , 40:138-40:140, 40:141 [?] , 40:145 [?] , 40:146-40:148, 40:149 [?] , 40:150, 40:151 [?] , 40:152-40:153, 40:154 [?] , 40:155N, 40:156 [?] , 40:158 [?] , 40:159, 40:160 [?] , 40:161-40:162, 40:163 [?] -40:164 [?] , 40:165, 40:166 [?] , 40:167, 40:168 [?] -40:176 [?] , 40:177, 40:178 [?] -40:180 [?] , 41:01-41:19, 42:01:01-42:02, 42:04-42:16, 45:01-45:13, 48:01:01-48:17, 48:19-48:27, 50:01:01-50:02, 50:04-50:15, 51:01:09, 51:01:21, 51:01:25, 51:10, 51:24:02-51:24:04, 54:11, 56:20:02, 67:01:01-67:03, 73:01-73:02, 81:02
45¹³	180 bp	1070 bp	15, 40, 44, 46, 48, 60	*15:116, 15:124, 40:01:01-40:01:06, 40:01:08-40:01:17, 40:01:19-40:01:23, 40:07, 40:10:01-40:10:02, 40:12, 40:21-40:23, 40:25, 40:30, 40:33-40:34, 40:36, 40:38, 40:42-40:43, 40:46-40:49, 40:51-40:52, 40:54-40:55, 40:59-40:63, 40:65-40:67, 40:69, 40:73-40:74, 40:76, 40:79, 40:81, 40:84, 40:87:01-40:88, 40:92, 40:100-40:102, 40:106, 40:108, 40:112-40:114, 40:116-40:118N, 40:123-40:126, 40:128, 40:130, 40:132, 40:134-40:135, 40:137-40:141, 40:146-40:147, 40:149-40:156, 40:160, 40:163, 40:166, 40:168, 40:170-40:172, 40:175, 40:178-40:179, 44:31, 46:06, 48:03:01-48:03:02, 48:17, 48:23, C*03:129

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46⁶	105 bp	1070 bp	7, 8, 35, 41, 42, 55	*07:04, 07:25, 08:01:01-08:05, 08:07-08:12:03, 08:14-08:19N, 08:21-08:24, 08:26-08:39, 08:41- 08:54, 08:56-08:69, 08:71-08:78, 08:80, 35:87, 40:136, 41:01-41:08, 41:10-41:19, 42:01:01-42:02, 42:04-42:07, 42:09-42:16, 55:20
47	325 bp	1070 bp	7, 15, 27, 35, 42, 45, 46, 54, 55, 56, 67, 73, 81	*07:02:01-07:02:29, 07:04-07:07, 07:09-07:15, 07:17-07:26, 07:28-07:31, 07:33-07:36, 07:39-07:46, 07:47 ^w , 07:48-07:49N, 07:51-07:68:03, 07:70-07:84, 07:86-07:144, 14:21, 15:76, 15:101, 27:01-27:11, 27:13-27:15, 27:17, 27:19-27:21, 27:24-27:28, 27:30- 27:38, 27:40-27:58, 27:60-27:76, 27:78-27:86, 35:76, 35:186, 38:26, 40:166, 42:01:01-42:02, 42:04-42:06, 42:08-42:10, 42:12-42:16, 44:90, 44:97, 45:06, 46:01:01-46:01:07, 46:02 ^w , 46:03-46:30, 54:01:01- 54:24, 55:01:01-55:05, 55:07-55:17, 55:19-55:54, 56:01:01-56:16, 56:18-56:22, 56:24-56:32, 67:01:01- 67:03, 73:01-73:02, 81:01-81:05, 82:01-82:03, 83:01
48⁶	115, 195, 225, 260 bp	1070 bp	35, 37, 44, 47, 51, 57	*08:49, 08:60, 08:76, 35:38, 35:45, 35:71, 35:115, 35:169, 37:01:01-37:01:07, 37:03N-37:06, 37:08, 37:10-37:31, 40:132, 40:178, 42:13, 44:02:01:01- 44:14, 44:16-44:17, 44:19N-44:36, 44:38-44:63, 44:65-44:134, 44:136-44:139, 51:42, 53:22, 57:07, 57:09, 57:24, 83:01, C*15:25
49	130, 270 bp	1070 bp	18, 35, 37, 40, 46, 51, 53, 57, 58	*14:10, 15:57 ^w , 18:22, 35:21, 35:24:01-35:24:02, 35:81, 35:96, 35:109, 35:157, 37:04:01-37:04:02, 40:28, 46:01:01-46:30, 51:04, 51:46, 51:56:01- 51:56:02, 53:02, 53:06, 57:14, 58:09, C*15:39
50^{6,14}	90, 410 bp	1070 bp	7, 27, 35, 47, 54, 55, 56, 81	*07:65, 27:01 ^w , 27:02:01-27:11, 27:13-27:15, 27:17, 27:19-27:21, 27:24-27:28, 27:30-27:38, 27:40-27:58, 27:60-27:76, 27:78-27:86, 35:76, 35:186, 44:90, 44:97, 47:01:01:01-47:03, 47:06-47:08, 54:01:01- 54:24, 55:01:01-55:05, 55:07-55:17, 55:19-55:54, 56:01:01-56:16, 56:18-56:22, 56:24-56:32, 81:01, 82:01-82:03, 83:01
51⁶	90, 175 bp	1070 bp	15, 27, 35, 40, 48, 62, 75, 77, 81	*13:36, 15:02:01-15:02:05, 15:08, 15:11:01-15:11:05, 15:13:01-15:13:02, 15:15, 15:21, 15:31, 15:44, 15:55, 15:76 ^w , 15:88-15:89, 15:112, 15:121, 15:139, 15:144, 15:148, 15:170, 15:189, 15:191, 15:194, 15:209N, 15:213-15:215, 15:223, 27:24, 35:46, 40:31, 40:45, 40:80, 48:01:01-48:01:03, 48:04, 48:06-48:07, 48:09, 48:11, 48:15-48:16, 48:18-48:20, 48:22, 48:24, 48:27, 81:01-81:05
52	145, 430 bp	1070 bp	40, 44, 49	*40:13, 40:19, 40:109, 40:117, 44:18, 44:25, 44:50, 44:95, 49:01:01-49:01:03, 49:04-49:20, 51:112, 54:12, 56:21, 57:45, 57:51, 59:01:01:01-59:05
53⁶	120, 210 bp	800 bp	13, 15, 45, 49, 50, 51, 52, 55, 56, 58, 62, 63,	*07:78, 07:84, 13:16, 13:31 ^w , 13:48, 15:04 ^w , 15:16:01-15:16:03, 15:42, 15:67, 15:95, 15:137 ^w , 40:95, 40:148, 40:161, 49:01:01, 49:01:03-49:10, 49:12-49:20, 50:01:01-50:02, 50:04-50:11,

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54	430 bp	1070 bp	27, 40, 44, 45, 51, 52, 53, 57, 58, 59	*18:67, 27:02:01-27:02:02, 27:30, 27:53, 27:57, 27:62, 27:65N, 27:75, 27:77, 27:83, 40:13, 40:19, 40:109, 40:117, 44:06, 44:25, 44:50, 44:95, 51:01:01-51:24:04, 51:26-51:46, 51:48-51:53, 51:55-51:77, 51:79-51:126, 52:01:01:01-52:19, 52:21-52:27, 53:01:01-53:02, 53:04-53:08:02, 53:10, 53:14-53:27, 57:01:01-57:11, 57:13-57:52, 58:01:01-58:02, 58:04-58:16, 58:18-58:36
55⁸	145 bp	1070 bp	15, 35, 40, 41, 44, 45, 47, 50, 72	*07:133, 15:46, 15:53, 15:106, 15:143, 15:212, 18:48, 35:19, 35:47, 35:63, 35:154, 40:01:01-40:11:02, 40:14:01-40:16, 40:18, 40:20, 40:22N-40:40, 40:42-40:45, 40:48-40:75, 40:77-40:92, 40:94-40:95, 40:97-40:108, 40:111-40:116, 40:118N-40:136, 40:138-40:156, 40:158-40:180, 41:01-41:04, 41:05 [?] , 41:06-41:19, 44:09, 44:46, 44:75, 44:90, 44:129, 44:131, 45:01-45:13, 47:02, 47:03 ^w , 50:01:01-50:02, 50:04-50:05, 50:07-50:15
56	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	*07:54, 07:123, 08:17, 08:38, 08:54, 13:01:01-13:04, 13:06, 13:08Q-13:23, 13:25-13:35, 13:37-13:52, 15:01:01:01-15:01:04, 15:01:06-15:01:18, 15:01:20-15:01:24, 15:03:01-15:07:02, 15:12, 15:14, 15:19-15:20, 15:24-15:27:03, 15:30, 15:32-15:36, 15:38:01-15:40, 15:42-15:43, 15:45-15:50, 15:53-15:54, 15:56-15:58, 15:60-15:63, 15:65-15:66, 15:68-15:71, 15:73-15:75, 15:77-15:79N, 15:81-15:87, 15:91-15:92, 15:94N, 15:96-15:98, 15:101-15:107, 15:109-15:111N, 15:113, 15:116-15:118, 15:122-15:123, 15:125-15:129, 15:131-15:132, 15:135-15:138, 15:140-15:142, 15:145-15:147, 15:150-15:152, 15:154-15:160, 15:163-15:167, 15:169, 15:171-15:175, 15:178-15:179, 15:181N-15:185, 15:187-15:188, 15:190N, 15:192-15:193, 15:195, 15:199, 15:201-15:207, 15:210-15:212, 15:217-15:220, 15:224-15:225, 15:227-15:228, 15:231-15:237, 18:12, 27:01-27:21, 27:24-27:86, 35:10, 35:13, 35:16, 35:28, 35:63, 35:69, 35:80, 37:01:01-37:07, 37:09-37:31, 38:03-38:04, 38:25, 39:02:01-39:02:02, 39:08, 39:13:01-39:13:02, 39:22-39:23, 39:49, 40:01:01-40:07, 40:09-40:16, 40:18-40:24, 40:26-40:40, 40:42-40:67, 40:70-40:105, 40:107-40:165,

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57^{8,9,12}	160, 330 bp	1070 bp	15, 37, 44, 54	*44:02:01:01-44:02:21, 44:06, 44:08-44:09, 44:11-44:12, 44:16, 44:19N-44:24, 44:27:01-44:27:02, 44:33-44:34, 44:41:01-44:41:02, 44:44, 44:48-44:49, 44:52N-44:53, 44:55, 44:59, 44:63, 44:66-44:68, 44:71-44:74, 44:80, 44:83-44:84, 44:86-44:87, 44:89-44:91, 44:93, 44:95, 44:97, 44:99-44:102, 44:104, 44:106, 44:112-44:113, 44:116, 44:118-44:119, 44:121, 44:126-44:127, 44:131-44:132, 44:137-44:138Q, 54:01:01, 54:02-54:24, 83:01
58	180, 210 bp	1070 bp	7, 13, 15, 18, 35, 39, 40, 45, 54, 55, 56, 59, 78	*07:65, 13:06, 15:42, 15:86, 15:224, 18:04, 35:08:05, 35:42:02, 35:60, 35:185, 39:17, 39:63, 40:01:11, 40:58, 45:08, 46:18, 54:01:01-54:02, 54:05N, 54:07-54:08N, 54:10, 54:12-54:13, 54:16-54:24, 55:01:01-55:03, 55:05, 55:07, 55:10-55:12, 55:15-55:16, 55:18-55:19, 55:21, 55:25-55:26, 55:29-55:31, 55:33-55:45, 55:47-55:48, 55:50, 55:52-55:54, 56:05:01, 56:06, 56:10, 56:23, 59:01:01:01-59:01:01:02, 59:05, 78:01:01-78:01:02, 78:02:02-78:03, 78:07, C*15:02:04
59	180 bp	1070 bp	13, 15, 40, 44, 45, 46, 49, 50, 51, 54, 56	*13:03, 13:48, 15:73, 40:71, 44:10, 44:15, 44:18, 45:01, 45:04-45:07, 45:11-45:13, 46:11, 49:01:01-49:03, 49:06, 49:08-49:17, 49:19N-49:20, 50:01:01-50:02, 50:04-50:08, 50:10-50:13, 50:15, 51:15, 51:62, 51:106, 52:25, 54:03, 56:01:01-56:02, 56:04, 56:07-56:08, 56:13-56:14, 56:16-56:17, 56:20:01-56:20:02, 56:24-56:30, 59:04, 82:01-82:03, C*03:12, C*03:19, C*03:102
60^{6,10}	90, 240 bp	800 bp	55, 57	*55:14, 57:01:01-57:44, 57:46-57:50, 57:52, 58:36
61⁶	95 bp	1070 bp	7, 8, 18, 35, 37, 38, 39, 44, 51, 52, 53, 78	*07:65 ^w , 07:134 ^w , 08:32, 18:01:01-18:11, 18:13-18:15, 18:17N-18:36, 18:38-18:47, 18:49-18:65, 18:67-18:68, 35:01:01:01-35:08:04, 35:09:01-35:09:03, 35:11:01-35:12:03, 35:14:01-35:15, 35:17-35:18, 35:20:01-35:24:02, 35:27, 35:29-35:45, 35:48, 35:50-35:62, 35:64-35:68:02, 35:70-35:72, 35:74-35:75, 35:76 ^w , 35:77-35:79, 35:81-35:153, 35:155-35:184, 35:185, 37:08, 38:06-38:07, 39:19:01-39:19:02, 44:06, 51:01:01-51:24:04, 51:26-51:46, 51:48-51:103, 51:105-51:111, 51:113-51:117, 51:119-51:126, 53:01:01-53:16, 53:18-53:27, 56:06 ^w , 78:01:01-78:04, 78:07
62^{6,8,10}	115, 150 bp	1070 bp	15, 18, 27, 35, 39, 46, 54, 55, 56, 62, 73, 75, 76	*07:100, 13:31, 13:41, 15:01:01:01-15:01:04, 15:01:06-15:01:16, 15:01:18-15:01:24, 15:04, 15:07:01-15:08, 15:11:01-15:12, 15:14-15:15, 15:19, 15:24, 15:26N-15:28, 15:30, 15:32, 15:34-15:35, 15:38:01-15:38:02, 15:43, 15:45-15:46, 15:50,

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63¹⁵	360 bp	1070 bp	Bw4
64	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.

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 22 contains the primer pair giving rise to the shorter, 800 bp, internal positive control band.

In addition, wells number 25, 26, 27, 31, 37, 40, 41, 53 and 60 contain the primer pair giving rise to the shorter, 800 bp, internal positive control band.

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. The grouping of not serologically defined alleles is taken from Tissue Antigens 73, 95-170, 2009.

⁴Nucleotide sequence information is available for only exons 2 and 3 of many HLA Class I alleles and for only exon 2 of many HLA Class II alleles and not for other exons or for the introns of these alleles. We assume that unknown sequences in these exons and in the introns are conserved within loci and within allelic groups. The B*08:26, 08:50, 08:62 and the B*42:07 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*13:04, 13:10, 13:21 and 13:35 and the B*44:135 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*14:08 and the B*39:25N, 39:30, 39:32-39:34, 39:43, 39:47 and 39:50 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*18:29 and the B*35:09:01-35:09:03, 35:18, 35:31-35:32:02, 35:37, 35:53N, 35:64, 35:68:01-35:68:02, 35:75, 35:88, 35:99, 35:118-35:119, 35:127, 35:151 and 35:174 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*41:09 and the B*45:02-45:03 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*51:104 and 51:118N and the B*58:08:01-58:08:02 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*54:01:02 and the B*55:01:07, 55:02:01-55:02:06, 55:07, 55:10, 55:12, 55:16, 55:19, 55:26, 55:30, 55:35, 55:37, 55:39, 55:41-55:43, 55:47-55:48 and 55:50 and the B*56:10 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*55:04, 55:08, 55:13, 55:23, 55:27, 55:32, 55:46 and 55:49 and the B*56:15, 56:18-56:19N, 56:22 and 56:31-56:32 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 57:01:01-57:01:04, 57:01:06-57:03:02, 57:05-57:06, 57:08, 57:10, 57:15-57:20, 57:22-57:23, 57:25-57:30, 57:32-57:44, 57:46, 57:48-57:50, 57:52 and the B*58:36 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.

⁵The HLA-C*03:05, 03:25 and 03:27 alleles will be amplified by primer mix 24, the C*01:30 allele will be amplified by primer mix 25, the A*23:31, A*24:106 and C*16:10 alleles will be amplified by primer mix 27, the C*07:46 allele will be amplified by primer mix 29, the A*24:174 allele will be amplified by primer mix 33, the C*03:102 allele will be amplified by primer mixes 37 and 58, the C*15:51 allele will be amplified by primer mix 41, the C*03:129 allele will be amplified by primer mix 45, the C*15:25 allele will be amplified by primer mix 48, the C*15:39 allele will be amplified by primer mix 49, the C*15:02:04 allele will be amplified by primer mix 58, the C*03:12, 03:19 and 03:102 alleles will be amplified by primer mix 59 and the A*26:68, A*68:56, C*06:20 and C*12:50 alleles will be amplified by primer mix 62.

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

⁷Primer mix 25 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.

⁸Primer mixes 25, 26, 30, 41, 55, 57 and 62 may yield less specific PCR product than the other HLA-B low resolution primer mixes.

⁹Primer mixes 30, 40 and 57 may give rise to nonspecific amplifications, most pronounced in primer mix 30.

¹⁰Primer mixes 22, 35, 39, 40, 42, 60 and 62 may give rise to a primer oligomer artifact.

¹¹The B*57 and B*58 alleles might be faintly amplified by primer mix 30.

¹²Primer mix 57 may yield less specific PCR product than the other HLA-B low resolution primer mixes in B*54 alleles.

¹³The C*17:01 to C*17:04 alleles might be faintly amplified by primer mix 45.

¹⁴Primer mix 50 might generate a false band of about 800 base pairs. This band should be disregarded when interpreting HLA-B low resolution typings.

¹⁵The Bw4-associated HLA-A specificities A23, A24, A2403, A25 and A32 are not amplified by the primer pair in primer mix 63.

'w', might be weakly amplified.

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

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Lot-specific information

SPECIFICITY TABLE

Specificities and sizes of the PCR products of the 23 primer mixes used for DR low resolution SSP typing

Primer Mix	Size of spec. PCR product ¹	Size of control band ²	DR serology ³	Amplified HLA-DRB alleles ⁴
65^{6,7}	205, 255 bp	515 bp	1	*01:01:01-01:02:08, 01:04-01:38, 01:40N-01:45
66	200 bp	430 bp	103	*01:03, 01:39N, 01:42
67	200, 215 bp	430 bp	15	*15:01:01:01-15:69
68	210 bp	430 bp	16	*16:01:01-16:05:02, 16:07-16:19
69^{5,6,11}	120, 220 bp	430 bp	3, 17, 18, 11	*03:01:01:01-03:75, 03:77, 11:07, 11:53, 11:103, 11:105, 11:107, 15:25
70^{5,11}	80, 210 bp	430 bp	3, 17, 11, 13, 14	*03:01:01:01-03:01:19, 03:04:01-03:06, 03:08-03:16, 03:18-03:20, 03:22-03:23, 03:25-03:26, 03:28, 03:30-03:31, 03:33-03:34, 03:36-03:37, 03:43-03:48, 03:50-03:52, 03:54-03:68N, 03:70-03:73, 03:75-03:77, 08:40, 11:02:01-11:03, 11:11:01-11:11:02, 11:14:01-11:14:02, 11:16, 11:20-11:21, 11:36, 11:40-11:41, 11:48, 11:59, 11:63, 11:65:01-11:65:02, 11:68, 11:70, 11:73, 11:76, 11:79-11:80, 11:83, 11:85-11:87, 11:93, 11:118, 13:01:01-13:04, 13:08, 13:10, 13:15-13:17, 13:19-13:20, 13:22-13:24, 13:27-13:29, 13:31-13:41, 13:43, 13:45, 13:48, 13:51-13:54, 13:57, 13:59, 13:61:01-13:61:02, 13:63-13:66:02, 13:68-13:76, 13:78-13:81, 13:83-13:85, 13:87-13:99, 13:101-13:102, 13:104-13:107, 13:109, 13:111-13:117, 13:120-13:131, 13:133, 13:135, 14:16, 14:19, 14:21, 14:82, 14:95, 14:109
71⁵	85, 210 bp	430 bp	3, 18, 11, 13, 14	*03:02:01-03:03, 03:27, 03:29, 03:38, 03:53, 03:74, 11:13:01 ^w -11:13:02 ^w , 11:26, 11:34, 13:15, 13:19, 13:26, 13:44, 13:53, 13:57, 13:85-13:86, 13:104, 14:02-14:03:02, 14:06:01-14:06:02, 14:09, 14:12:01-14:13, 14:17-14:21, 14:24, 14:27, 14:29-14:30, 14:32:01 ^w -14:32:02 ^w , 14:33, 14:40-14:41, 14:47-14:49, 14:51, 14:63, 14:65 ^w , 14:67, 14:77-14:78, 14:80-14:81, 14:83, 14:85, 14:89, 14:94, 14:98, 14:102, 14:106, 14:108-14:109, 14:115, 14:119, 14:121
72^{5,6}	100, 175 bp	430 bp	3, 4	*04:01:01-04:107
73	210, 235 bp	430 bp	7, 13, 14	*07:01:01:01-07:01:04, 07:03-07:22, 12:22, 13:17, 13:116, 14:50
74⁶	170, 215, 250 bp	515 bp	8, 12, 14	*08:01:01-08:19, 08:21-08:49, 11:67, 12:04, 12:16, 12:22, 14:11, 14:15, 14:68, 14:93
75^{5,6}	90, 135, 180 bp	430 bp	3, 9, 11	*03:08, 03:65, 09:01:02-09:17, 11:07, 11:53, 11:103, 11:105, 11:107

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76⁷	175 bp	430 bp	10	*03:76, 10:01:01-10:04, 11:59, 11:80, 11:83, 11:87, 13:27, 13:41, 13:71, 13:129
77^{5,6}	100, 170 bp	430 bp	11, 3, 8	*03:08, 03:65, 08:31, 08:41, 11:01:01-11:70, 11:72-11:121
78^{5,6,9}	85, 105 bp	430 bp	12, 8	*08:32, 12:01:01-12:35
79⁸	215 bp	430 bp	6, 8, 11, 13, 14, 1403	*03:76, 08:20-08:21, 11:01:01-11:04:08, 11:06:01-11:06:02, 11:08:01-11:12:02, 11:14:01-11:16, 11:18-11:21, 11:23-11:25, 11:27:01-11:33, 11:35-11:51, 11:54:01-11:54:02, 11:56-11:66, 11:68, 11:70, 11:72-11:81, 11:83-11:88, 11:90-11:97, 11:99-11:102:02, 11:106, 11:108-11:121, 13:01:01-13:08, 13:10-13:16, 13:18-13:43, 13:45-13:85, 13:87-13:115, 13:117-13:128, 13:130-13:135, 14:03:01-14:03:02, 14:12:01-14:12:02, 14:16, 14:19, 14:21-14:22, 14:25, 14:27, 14:40, 14:53, 14:63, 14:67, 14:69, 14:74, 14:77-14:78, 14:84-14:85, 14:98, 14:102, 14:105, 14:109, 14:115-14:116, DRB3*02:27
80^{6,8}	195, 225 bp	430 bp	13, 8, 11, 12, 14	*08:01:01-08:02:04, 08:04:01-08:09, 08:11, 08:16-08:17, 08:20-08:22, 08:24, 08:26, 08:28, 08:31, 08:39, 08:41-08:44, 11:01:01-11:06:02, 11:09-11:12:02, 11:14:01-11:16, 11:20-11:21, 11:23-11:25, 11:27:01-11:30, 11:32-11:33, 11:35-11:41, 11:43-11:44, 11:46:01-11:51, 11:54:01-11:56, 11:58:01-11:63, 11:65:01-11:70, 11:72, 11:74:01-11:78, 11:80-11:88, 11:90-11:97, 11:99-11:102:02, 11:106, 11:108-11:118, 11:120-11:121, 12:02:01-12:02:05, 12:13, 12:15-12:16, 12:18-12:21, 12:23, 12:26-12:27, 12:31N-12:33, 13:01:01-13:02:01, 13:02:03-13:02:05, 13:04-13:05:02, 13:07:01-13:09, 13:11:01-13:11:02, 13:14:01-13:24, 13:26-13:29, 13:31-13:32, 13:34-13:36, 13:38-13:43, 13:45-13:55, 13:57, 13:59, 13:61:01-13:65, 13:67-13:76, 13:78-13:80, 13:83-13:84, 13:87, 13:91-13:93, 13:96:01-13:100, 13:102-13:109, 13:111-13:114, 13:116-13:117, 13:121, 13:123-13:132, 13:135, 14:15-14:16, 14:22, 14:24-14:25, 14:27, 14:37, 14:53, 14:73, 14:105
81¹¹	175 bp	430 bp	3, 13, 14, 8	*03:01:01:01-03:07, 03:09, 03:11:01-03:41, 03:43-03:45, 03:47-03:63, 03:66-03:68N, 03:70-03:77, 08:20, 13:01:01-13:16, 13:18-13:42, 13:44, 13:46-13:66:02, 13:68-13:102, 13:104-13:115, 13:117-13:121, 13:123-13:135, 14:02-14:03:02, 14:05:01-14:06:02, 14:09, 14:12:01-14:14, 14:17-14:21, 14:23:01, 14:23:03-14:24, 14:27, 14:29-14:30, 14:33, 14:36-14:37, 14:40-14:45, 14:47-14:48, 14:51, 14:56, 14:59, 14:63-14:65, 14:67, 14:77-14:78, 14:80-14:81, 14:83-14:85, 14:89, 14:91, 14:94-14:96, 14:98, 14:100,

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				14:102-14:103, 14:106, 14:108-14:109, 14:115-14:116, 14:121
82⁵	100, 140, 155 bp	430 bp	14, 4, 8, 13	*04:62, 04:69, 04:73, 04:105, 08:08, 11:69, 11:82, 13:45, 14:01:01-14:01:02, 14:04, 14:07:01-14:07:02, 14:10, 14:16, 14:22, 14:25-14:26, 14:28, 14:31-14:32:02, 14:35, 14:37-14:39, 14:49-14:50, 14:53-14:55, 14:57-14:58, 14:60-14:62, 14:68-14:71, 14:73-14:76, 14:79, 14:82, 14:86-14:88, 14:90, 14:93, 14:99, 14:101, 14:104-14:105, 14:107, 14:110-14:114, 14:117-14:120, 14:122, DRB4*01:03:01:02N
83^{5,6,10}	110, 135, 170 bp	430 bp	14, 3, 9, 11, 12, 13, 15	*03:10, 09:01:02-09:01:05, 09:01:07-09:02:02, 09:04-09:17, 11:13:01-11:13:02, 11:17, 11:52, 13:43, 14:01:01-14:02, 14:04-14:11, 14:13-14:14, 14:16-14:18, 14:19 ^w , 14:20, 14:21 ^w , 14:22-14:23:03, 14:26, 14:28-14:36, 14:38-14:39, 14:41, 14:43-14:52, 14:54-14:57, 14:59-14:62, 14:64-14:65, 14:68, 14:70-14:76, 14:79-14:83, 14:86-14:88, 14:90-14:97, 14:99-14:101, 14:103-14:108, 14:109 ^w , 14:110-14:114, 14:117-14:122, 15:27, 15:34, 15:66
84^{5,6}	110, 175, 225 bp	430 bp	14, 3, 8, 11, 13, 15, 16	*03:10, 08:09, 08:20-08:21, 08:32, 08:35, 11:13:01-11:13:02, 11:17, 11:23, 11:25, 11:31, 11:45, 11:52, 11:55, 11:64, 11:89, 11:96, 11:119, 13:13, 13:18, 13:43, 13:45, 13:47, 13:55, 13:119, 14:01:01-14:01:03, 14:03:01-14:05:03, 14:07:01-14:08, 14:10-14:12:02, 14:14-14:16, 14:18, 14:22-14:23:03, 14:25-14:28, 14:31-14:32:02, 14:34-14:36, 14:38-14:40, 14:42-14:45, 14:49-14:50, 14:53-14:65, 14:67-14:79, 14:81-14:82, 14:84-14:93, 14:95-14:97, 14:99-14:105, 14:107, 14:110-14:120, 14:122, 15:21 ^w , 16:04 ^w , 16:18 ^w
85^{6,11}	160, 240 bp	430 bp	52	DRB3*01:01:02:01-01:15, DRB3*02:01-02:28, DRB3*03:01:01-03:03
86^{7,12}	215 bp	430 bp	53	DRB4*01:01:01:01-01:08
87	175 bp	430 bp	51	DRB5*01:01:01-01:14, DRB5*02:02-02:05

¹ Alleles 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 DR 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 67, 72, 82, 83 and 84.

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.

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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 65 contains the primer pair giving rise to the longer, 515 bp, internal positive control band. In addition, well number 74 contains the primer pair giving rise to the longer, 515 bp, internal positive control band.

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

³The serological reactivity of all DRB alleles is not known. The grouping of not serologically defined alleles is taken from Tissue Antigens 73, 95-170, 2009.

⁴For 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 set 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*01:01 consensus sequence.

Nucleotide sequence information is available for only exons 2 and 3 of many HLA Class I alleles and for only exon 2 of many HLA Class II alleles and not for other exons or for the introns of these alleles. We assume that unknown sequences in these exons and in the introns are conserved within loci and within allelic groups.

The DRB1*08:09 and the DRB1*14:15 alleles yield identical amplification patterns with the DR low resolution primer set. These alleles can be separated by the respective high resolution primer sets.

The DRB1*08:20 and the DRB1*13:18, 13:47 and 13:55 alleles yield identical amplification patterns with the DR low resolution primer set. These alleles can be separated by the respective high resolution primer sets.

The DRB1*08:31, 08:41 and DRB1*11:67 alleles yield identical amplification patterns with the DR low resolution primer set. These alleles can be separated by the respective high resolution primer sets.

The DRB1*13:13 and 13:119 and the DRB1*14:84 and 14:116 alleles yield identical amplification patterns with the DR low resolution primer set. These alleles can be separated by the respective high resolution primer sets.

⁵Specific PCR fragments shorter than 125 base pairs have a lower intensity and are less sharp than longer PCR bands.

⁶Individual alleles can give rise to two differently sized specific PCR fragments in primer mixes 65 and 69, 72, 74, 75, 77, 78, 80 and 83 to 85.

⁷Primer mixes 65, 76 and 86 may give rise to primer oligomer formation.

⁸Primer mixes 79 and 80 may yield less specific PCR product than the other DR low resolution primer mixes.

⁹Primer mix 78 may have tendencies of unspecific amplifications.

¹⁰Primer mix 83 has a tendency of primer oligomer formation and also has an intense primer cloud due to the high number of primers present in the primer mix.

¹¹Due to sharing of sequence motifs in codon 38, DRB3*01:14 will also be amplified in primer mixes 69, 70 and 81 in addition to primer mix 85.

¹²The DRB4*01:03:01:02N allele is amplified by the primer pair in well No. 86, whereas the DRB4*02:01N and DRB4*03:01N null alleles are not amplified by this primer pair.

'w', might be weakly amplified.

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Lot No.: **46N**

Lot-specific information

SPECIFICITY TABLE**DQ low resolution SSP typing**

Specificities and sizes of the PCR products of the 8 primer mixes used for DQ low resolution SSP typing

Primer Mix	Size of spec. PCR product ¹	Size of control band ²	DQ serology ³	Amplified DQB1 alleles ⁴
88	225 bp	515 bp	5	*05:01:01:01-05:14
89⁵	220, 270 bp	430 bp	1, 5, 6	*06:01:01-06:44, 06:47
90	210 bp	430 bp	2	*02:01:01-02:06
91⁶	220 bp	515 bp	3, 7	*03:01:01:01-03:01:06, 03:04, 03:09-03:10, 03:13-03:14, 03:16, 03:19, 03:21-03:22, 03:24, 03:27-03:29, 03:35-03:36
92⁶	130 bp	515 bp	6, 8	*03:02:01-03:02:05, 03:05:01-03:05:04, 03:07-03:08, 03:11, 03:18, 03:32, 03:37, 06:29
93^{5,6}	135 bp	515 bp	2, 3, 9	*02:03, 03:03:02:01-03:03:04, 03:06, 03:12, 03:15, 03:20, 03:25-03:26, 03:30-03:31, 03:33-03:34, 03:38-03:39, 04:03:01-04:03:02
94⁶	145, 185 bp	515 bp	3, 7, 8, 9	*03:01:01:01-03:39
95⁶	210, 245 bp	430 bp	4	*04:01:01-04:08
96⁷				Negative control

¹ Alleles 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 DQ 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.

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.

² The 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 88 contains the primer pair giving rise to the longer, 515 bp, internal positive control band. In addition, wells number 91 to 94 contain the primer pair giving rise to the longer, 515 bp, internal positive control band.

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

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Lot No.: 46N**Lot-specific information**

³The serological split of the DQB1*05:05, DQB1*06:06 to 06:07 alleles, the DQB1*06:10, 06:13, 06:15-06:24 and 06:27 to 06:44, the DQB1*02:04-02:06, the DQB1*03:07-03:09 and 03:11- 03:38 alleles and the DQB1:04:0301-04:08 alleles is not known. In this table we have used the expert-assigned serological grouping in Tissue Antigens (2009) 73:95-170, and also inferred the serological grouping from the naming of the sequence-defined allele.

⁴For several DQB1 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 5'- and 3'-ends of the second exon of the DQB1 gene are conserved within allelic groups.

⁵Primer mixes 89 and 93 may give rise to primer dimer formation

⁶Primer mixes 91, 92, 93, 94 and 95 may yield somewhat less intense specific PCR fragments than the other DQ low resolution primer mixes.

⁷Primer mix 96 contains a negative control, which will amplify more than 95% of HLA amplicons as well as the amplicons generated by control primer pairs. PCR product sizes range from 75 to 200 base pairs. The PCR product generated by the control primer pair is 430 base pairs.

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Lot-specific information

INTERPRETATION TABLE																				
HLA-A low resolution SSP typing																				
Amplification patterns of the A*01:01 to A*80:02 alleles																				
		Well ¹⁰																		
		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
Length of spec.		120	210	205	190	135	175	165	75	85	80	125	175	100	90	240	140	200	160	220
PCR product(s)		145	255	235		175	205	200			175	185	225	200	135	370	180		200	245
		225	365			210					500			240	205	395				
			415																	495
Length of int.		800	800	1070	800	800	1070	800	800	1070	1070	800	1070	1070	1070	1070	1070	1070	800	800
pos. control ¹																				
5'-primer(s) ²		98	48	363	98	176	98	98	266	257	301	103	98	98	203	41	180	98	180	78
		5'-CTT ^{3'}	5'-gCT ^{3'}	5'-ATA ^{3'}	5'-CTA ^{3'}	5'-gCA ^{3'}	5'-CTC ^{3'}	5'-CTA ^{3'}	5'-ACg ^{3'}	5'-Cgg ^{3'}	5'-Cgg ^{3'}	5'-CCT ^{3'}	5'-CTT ^{3'}	5'-CAC ^{3'}	5'-gAA ^{3'}	5'-CTT ^{3'}	5'-TTT ^{3'}	5'-CAC ^{3'}	5'-TTT ^{3'}	5'-TCT ^{3'}
		103	78		413	368	368	102	266	259	302	423	423	238	362	355	203			106
		5'-CCT ^{3'}	5'-TCT ^{3'}		5'-CCg ^{3'}	5'-gTT ^{3'}	5'-gTT ^{3'}	5'-ACA ^{3'}	5'-ACg ^{3'}	5'-CgA ^{3'}	5'-ggA ^{3'}	5'-gCT ^{3'}	5'-gCT ^{3'}	5'-AgA ^{3'}	5'-ggT ^{3'}	5'-CCg ^{3'}	5'-gAA ^{3'}			5'-CCA ^{3'}
		123	106					413	266	261	385			355	363		418			261
		5'-AgT ^{3'}	5'-CCA ^{3'}					5'-CCg ^{3'}	5'-Agg ^{3'}	5'-AAC ^{3'}	5'-ggC ^{3'}			5'-CCg ^{3'}	5'-ATA ^{3'}		5'-AgC ^{3'}			5'-AAC ^{3'}
		363													363					341
		5'-ATA ^{3'}													5'-ATA ^{3'}					5'-ggA ^{3'}
															5'-TAC ^{3'}					5'-CCC ^{3'}
3'-primer(s) ³		203	240	527	256	270	259	259	302	299	341	257	282	257	299	238	290	256	299	265
		5'-TCT ^{3'}	5'-ggA ^{3'}	5'-CCA ^{3'}	5'-CTg ^{3'}	5'-ACA ^{3'}	5'-gTT ^{3'}	5'-gTT ^{3'}	5'-ggC ^{3'}	5'-TCg ^{3'}	5'-CgT ^{3'}	5'-gCA ^{3'}	5'-gAC ^{3'}	5'-gCA ^{3'}	5'-CCA ^{3'}	5'-CCT ^{3'}	5'-CAA ^{3'}	5'-CCC ^{3'}	5'-CCA ^{3'}	5'-CCC ^{3'}
		545	292	527	559	502	502	259			521	506	282	299	411	243	317	256	299	355
		5'-AgA ^{3'}	5'-gTg ^{3'}	5'-CCT ^{3'}	5'-CCg ^{3'}	5'-CTg ^{3'}	5'-CTT ^{3'}	5'-gTT ^{3'}			5'-ggg ^{3'}	5'-TgT ^{3'}	5'-gAC ^{3'}	5'-TCg ^{3'}	5'-TCA ^{3'}	5'-TCA ^{3'}	5'-ggA ^{3'}	5'-CTC ^{3'}	5'-CCA ^{3'}	5'-gAC ^{3'}
				555		538	539	538				559	559	418	526	265	555	259	341	282
				5'-gCA ^{3'}		5'-CAg ^{3'}	5'-TCT ^{3'}	5'-CCA ^{3'}				5'-CTC ^{3'}	5'-CCg ^{3'}	5'-gTC ^{3'}	5'-CCA ^{3'}	5'-CCC ^{3'}	5'-CCA ^{3'}	5'-gTT ^{3'}	5'-CgT ^{3'}	5'-gAC ^{3'}
				555								559		555	555					502
				5'-CCA ^{3'}								5'-CgT ^{3'}		5'-CCA ^{3'}	5'-CCA ^{3'}	5'-CCA ^{3'}				5'-CTT ^{3'}
																				506
																				5'-TgT ^{3'}
Well No.		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19
		20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38

101.708-24– including *Taq* polymerase, IFU-01
 101.708-24u – without *Taq* polymerase, IFU-02

Visit www.olerup-ssp.com for
 “Instructions for Use” (IFU)

Lot No.: **46N**

Lot-specific information

Well No.		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21
HLA-A allele ⁴	ser ⁵																					
*01:01:01:01:01:01:22, 01:01:24-01:04N, 01:06- 01:07, 01:09-01:11N, 01:16N-01:18N, 01:20, 01:22N-01:27N, 01:29, 01:31N-01:33, 01:35-01:50, 01:52N-01:78, 01:80-01:82, 01:84-01:94, 01:96-01:98, 01:100-01:104, 36:04 ⁶	A1, A36, Null, –	1			4																	
*01:01:23, 01:08, 01:14- 01:15N, 01:30, 01:79, 01:99, 36:01, 36:03, 36:05 ⁶	A1, A36, Null–	1																				
*01:12, 01:19	A1, –	1		3																		
*01:13	A1	1			4						10		12		14							
*01:21	A1	1		3	4																	
*01:28	–	1			4						10				14							
*01:51	–	1			4			7		9												
*01:83	–	1			4					9												
*01:95	–	1			4											16						
*02:01:01:01:02:01:15, 02:01:17-02:01:19, 02:01:21- 02:16, 02:18-02:22:02, 02:24:01-02:33, 02:36- 02:45, 02:47, 02:49-02:54, 02:57-02:61, 02:63-02:69, 02:71-02:77, 02:79:01- 02:97:02, 02:99, 02:101:01- 02:102, 02:104-02:128, 02:130-02:134, 02:136- 02:145, 02:147-02:168, 02:170-02:236, 02:238- 02:242, 02:244-02:308, 02:310-02:336	A2, Low A2, A203, A210, A19, Null, –				2																	
*02:17:01-02:17:02	A2		2				w															
*02:34-02:35:01, 02:35:03, 02:56:01-02:56:02, 02:62, 02:103	A2		2										12							19		
*02:35:02	A2												12							19		
*02:46, 02:70	A2		2																	19		
*02:48, 02:129	A2, –																			19		
*02:55	A2, A28		2					7													20	21
*02:78	–		w		4															19		
*02:135	–		2										12									
*02:146	–		2							9												
Well No.		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21

101.708-24– including *Taq* polymerase, IFU-01
 101.708-24u – without *Taq* polymerase, IFU-02

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 “Instructions for Use” (IFU)

Lot No.: **46N**

Lot-specific information

Well No.		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21
*02:169	–		2		4																	
*02:237	–		2											13		15						
*02:243	–		2															17			20	
*02:309	–		2									11		13								
*03:01:01-03:01:02, 03:01:04-03:01:18, 03:01:20- 03:01:22, 03:01:24-03:07, 03:10-03:11N, 03:13-03:17, 03:19-03:22:02, 03:23:02, 03:25-03:31, 03:33-03:35, 03:37-03:40, 03:42, 03:44- 03:49, 03:51-03:56, 03:58, 03:60-03:62, 03:64-03:71, 03:73-03:74, 03:76-03:81, 03:83-03:87, 03:90-03:94, 03:96-03:106, 03:109- 03:110, 03:112-03:133	A3, Null, –			3									12									
*03:01:03, 03:09, 03:23:01	A3, –		w	3									12									
*03:01:19	–			3								11	12									
*03:01:23, 03:08, 03:32, 03:36N, 03:57, 03:59, 03:72, 03:107, 03:111, 24:92 ⁷	A3, Null, –			3																		
*03:12	A3			3	4																	
*03:18	–	1			4								12									
*03:24, 03:50	A3, –			3				7					12									
*03:41	–			3																		21
*03:43, 03:82	–			3									12		14		16					
*03:63	–			3								10	12									21
*03:75	–												12									21
*03:88	–			3	4							10										21
*03:89, 03:108	–		w	3																		
*03:95	–												12	13		15						
*03:135	–	1			w								12									
*11:01:01-11:05, 11:07- 11:09, 11:12-11:17, 11:19- 11:24:02, 11:26-11:27, 11:29- 11:52Q, 11:54-11:59, 11:61- 11:93, 11:95-11:111	A11, Null, –				4							10										
*11:06, 11:18	A11, –		w		4							10										
*11:10	A11				4			7				10										
*11:11	–				4							10	11									
*11:25, 11:60	A11, –			3	4							10										
*11:94, 11:112	–	1			4							10										
*23:01:01-23:13, 23:15- 23:50, B*18:27 ⁸	A23, Null, –					5																
Well No.		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21

101.708-24– including *Taq* polymerase, IFU-01101.708-24u – without *Taq* polymerase, IFU-02Visit www.olerup-ssp.com for

“Instructions for Use” (IFU)

Lot No.: **46N**

Lot-specific information

Well No.		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21
*23:14, 24:05, 24:13:02, 24:24 ⁹	A23, A9, A24					5	6															
*24:02:01:01-24:04, 24:06-24:11N, 24:13:01, 24:17, 24:20-24:23, 24:25-24:27, 24:29-24:43, 24:45N-24:50, 24:54-24:56, 24:58-24:63, 24:66-24:81, 24:83N-24:88, 24:90-24:91, 24:93, 24:95-24:113, 24:115-24:137, 24:139-24:187, 24:189-24:190	A24, Low A24, A240 3, A9, Null, –						6															
*24:18	A24, A3						6															21
*24:19, 24:44	A9						6				10											
*24:28, 24:89	A9, –		w				6															
*24:82	–						6														20	
*25:01:01-25:04, 25:07-25:16	A25, Null, –							7	8				12									
*25:05	A25							7	8			11	12						19			
*25:06	A25							7	8			11										
*26:01:01-26:01:20, 26:01:22, 26:08, 26:10-26:15, 26:17-26:18, 26:20, 26:23-26:29, 26:31-26:33, 26:35-26:43:02, 26:45-26:53, 26:55-26:63, 26:65-26:71N	A26, A10, Null, –							7		9			12									
*26:01:21, 26:04, 26:34	A26, –							7		9												
*26:02	A26							7		9			w									
*26:03:01-26:03:02, 26:06, 26:21	A26, –		w					7			10		12									21
*26:05	A26							7					12									21
*26:07:01, 26:64	A26, –									9			12									
*26:07:02	A26									9			12									
*26:09	A26							7		9		11										
*26:16	A26						6			9			12									
*26:19	–				4								12	13								
*26:22	A26							7		9			12	13							20	
*26:30	A26		w					7					12									21
*26:54	–							7		9		11	12						19			
*26:72	–				4								12									
*29:01:01:01-29:06, 29:08N-29:12, 29:15-29:18, 29:20-29:27, 29:29-29:32	A29, Null, –													13								
Well No.		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21

101.708-24– including *Taq* polymerase, IFU-01
 101.708-24u – without *Taq* polymerase, IFU-02

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Lot No.: **46N**

Lot-specific information

Well No.		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21
*29:07	A29					5								13								
*29:13	–													13			16					
*29:14	–													13		15						
*29:19	–													13					18			
*29:28	–							7						13								
*30:01:01-30:04:02, 30:06-30:07, 30:09-30:12, 30:14-30:15, 30:20, 30:22-30:43, 30:45, 30:47-30:54, 30:58	A30, Null, –														14							
*30:13, 30:16, 30:44, 30:46	A30, –		w												14							
*30:08	A30				4										14							
*30:55	–												12		14							
*30:56	–					5									14							
*30:57	–													13	14							
*31:01:02-31:02, 31:05-31:28, 31:30-31:34, 31:36-31:56, 31:58-31:59	A31, A24, Null, –															15						
*31:03	A31										10	11		13		15						
*31:04	A31											11		13		15						
*31:29	–					5										15						
*31:35	–														14	15	16					
*32:01:01-32:02, 32:06-32:14, 32:16-32:37	A32, Null, –							8									16					
*32:03	A32																16					
*32:04	A32, A3			3				8														
*32:05	A32															15	16					
*32:15	A32						7	8									16					
*33:01:01-33:01:06, 33:03:01-33:12, 33:14-33:18, 33:20-33:21, 33:23, 33:25-33:47, 33:50, 33:52, 33:54	A33, –																	17				
*33:13, 33:48	–								9					13				17				
*33:19	–					6												17				
*33:22	–																	17			20	
*33:24	–																	17				21
*33:49	–			w														17				
*33:51	–						7															
*33:53	–															15		17				
*34:01:01-34:01:02, 34:05-34:06	A34, A10						7				10	11										
*34:02:01, 34:03, 34:07	A34			3			7				10	11										
*34:02:02	–			w			7				10	11										
*34:04	A34			3			7				10	11		13								
*34:08	A34			3			7				10	11	12									
*34:09	–			3			7					11										
Well No.		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21

101.708-24– including *Taq* polymerase, IFU-01
 101.708-24u – without *Taq* polymerase, IFU-02

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Lot No.: **46N**

Lot-specific information

Well No.		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21
*36:02	A36	1		3																		21
*43:01	A43											11	12									
*66:01, 66:04-66:08, 66:10-66:11, 66:13-66:15	A66, A26, –							7			10		12									
*66:02-66:03, 66:16	A66, A10, –							7				11										
*66:09	–							7			10		12	13							20	
*66:12	–							7					12									
*68:01:01:01-68:04, 68:06-68:12, 68:14, 68:16-68:19, 68:21:01-68:28, 68:31-68:44, 68:46-68:65, 68:67-68:70, 68:72-68:83, 68:85	A68, A28, Null, –							7												19		
*68:05, 68:15, 68:20	A68		w					7												19		21
*68:13, 68:66	A68				4			7												19		
*68:29	A68							7										17		19	20	
*68:30	A68		w					7												19		
*68:45	–						6	7												19		
*68:71	–							7					12							19		
*68:84	–							7		9										19		
*69:01	A69							7													20	
*74:01-74:06, 74:08-74:12N, 74:14N-74:15	A74, Null, –																		18			
*74:07	A74															16			18			
*74:13	–												12						18			
*80:01	A80					5																21
*80:02	–					5					10											
HLA-A allele ⁴	ser ⁵																					
Well No.		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21

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

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

In addition, wells number 2, 4, 5, 7, 8, 11 and 18 to 21 contain the primer pair giving rise to the shorter, 800 bp, internal positive control band in order to allow kit identification.

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

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

⁴The sequence of the A*0105N has been shown to be identical to A*01:04N.

The A*01:34N allele has been renamed A*01:01:38L

The A*020116 allele has been renamed to A*02:134.

101.708-24– including *Taq* polymerase, IFU-01
101.708-24u – without *Taq* polymerase, IFU-02

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Lot No.: 46N**Lot-specific information**

The A*020120 has been renamed to A*02:01:18.

The sequence of the A*0223 allele has been shown to be identical to A*02:22:01.

The sequence of the A*0298 allele has been shown to be identical to A*02:96.

The A*1128 allele has been renamed to A*11:15:02.

The A*11:53 allele has been shown to be identical to the corrected A*11:02:01.

The sequence of the A*2401 allele has been shown to be in error.

The sequence of the A*2412 allele has been shown to be identical to A*24:08.

The A*2416 allele has been renamed to A*31:08.

The A*2465 allele has been renamed to A*24:13:02.

The A*26:44 allele has been renamed to A*26:43:02.

The sequence of the A*3005 allele has been shown to be identical to A*30:04.

The A*3021 allele has been renamed to A*30:11:02.

The sequence of the A*31011 allele has been shown to be identical to A*31:01:02.

The sequence of the A*3302 allele has been shown to be identical to A*33:03:01.

⁵The serological reactivity of all HLA-A alleles is not known. The grouping of not serologically defined alleles is taken from Tissue Antigens 73, 95-170, 2009.

⁶The A*36 alleles will give rise to identical amplification patterns as a number of A*01 alleles.

These alleles can be separated by the A*01 and A*36 high resolution SSP primer sets.

⁷The A*03:01:23, 03:08, 03:32, 03:36N, 03:57, 03:59, 03:72, 03:89, 03:107-03:108 and 03:111 and the A*24:92 alleles will give rise to identical amplification patterns. These alleles can be separated by the respective high resolution SSP primer sets.

⁸Primer mix 5 will amplify the B*18:27 allele.

⁹The A*23:14 and the A*24:05, 24:13:02 and 24:24 alleles will give rise to identical amplification patterns. These four alleles can be separated by the respective high resolution SSP primer sets.

¹⁰The primer pairs in vials 1, 2, 10 and 14 will in many samples give rise to two or three HLA-specific PCR fragments.

‘w’, may be weakly amplified.

101.708-24– including *Taq* polymerase, IFU-01
 101.708-24u – without *Taq* polymerase, IFU-02

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Lot No.: **46N**

Lot-specific information

INTERPRETATION TABLE		Well																			
HLA-B low resolution SSP		Amplification patterns of the B*07:02 to B*83:01 alleles																			
		22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41
Length of spec. PCR product(s)		285	215	140	130	185	190	290	165	165	180	105	195	105	115	80	150	135	60	210	170
				235	265	235			220	190		195		395	150				245		
									330	390				435					400		
Length of int. pos. control ¹		800	1070	1070	800	800	800	1070	1070	1070	800	1070	1070	1070	1070	1070	800	1070	1070	800	800
5'-primer(s) ²		355	97	209	103	103	103	45	45	45	420	206	142	45	161	167	355	206	45	142	409
		5'-TCA ^{3'}	5'-TCg ^{3'}	5'-ggC ^{3'}	5'-CCg ^{3'}	5'-CCT ^{3'}	5'-CCg ^{3'}	5'-ggA ^{3'}	5'-ggA ^{3'}	5'-ggA ^{3'}	5'-TTA ^{3'}	5'-AgA ^{3'}	5'-TCT ^{3'}	5'-ggA ^{3'}	5'-Cgg ^{3'}	5'-gCT ^{3'}	5'-TCA ^{3'}	5'-gAC ^{3'}	5'-ggA ^{3'}	5'-TCT ^{3'}	5'-ggC ^{3'}
		363		363	103	103	418		357	435		420	419	540					368	368	420
		5'-AgC ^{3'}		5'-AgC ^{3'}	5'-CCg ^{3'}	5'-CCT ^{3'}	5'-Agg ^{3'}		5'-Tgg ^{3'}	5'-AAA ^{3'}		5'-TTA ^{3'}	5'-gTC ^{3'}	5'-gAC ^{3'}					5'-gTT ^{3'}	5'-gTC ^{3'}	5'-TTA ^{3'}
				363	361	363			412										557		
				5'-AgC ^{3'}	5'-AgT ^{3'}	5'-AAT ^{3'}			5'-ATA ^{3'}									5'-ggA ^{3'}			
3'-primer(s) ³		603	272	309	193	246	246	165	206	266	559	272	301	272	234	204	463	302	259	311	544
		5'-gTg ^{3'}	5'-Tgg ^{3'}	5'-gTg ^{3'}	5'-CgT ^{3'}	5'-TAT ^{3'}	5'-TAT ^{3'}	5'-Tgg ^{3'}	5'-CCT ^{3'}	5'-TCC ^{3'}	5'-CTC ^{3'}	5'-Tgg ^{3'}	5'-gTC ^{3'}	5'-TgC ^{3'}	5'-TCT ^{3'}	5'-TCT ^{3'}	5'-gCT ^{3'}	5'-ggC ^{3'}	5'-gTT ^{3'}	5'-ggg ^{3'}	5'-ggT ^{3'}
		605	272	559	193	246	572		538	559		572	301	309	272				259	311	
		5'-gCT ^{3'}	5'-TgA ^{3'}	5'-CAG ^{3'}	5'-CgT ^{3'}	5'-TAT ^{3'}	5'-gCC ^{3'}		5'-gTC ^{3'}	5'-CAG ^{3'}		5'-gCg ^{3'}	5'-gTC ^{3'}	5'-ATC ^{3'}	5'-TgA ^{3'}				5'-gTT ^{3'}	5'-ggg ^{3'}	
					583	559				583			570	605	272				266	538	
					5'-gTg ^{3'}	5'-CTC ^{3'}				5'-gTg ^{3'}			5'-CCg ^{3'}	5'-gCT ^{3'}	5'-Tgg ^{3'}				5'-TCC ^{3'}	5'-gTC ^{3'}	
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													5'-gCg ^{3'}						5'-Tgg ^{3'}		
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																			5'-gTA ^{3'}		
																			572		
																		5'-gCg ^{3'}			
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101.708-24– including *Taq* polymerase, IFU-01

101.708-24u – without *Taq* polymerase, IFU-02

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[illegible]

101.708-24– including *Taq* polymerase, IFU-01
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HLA-B allele ⁴	ser. ¹⁴																				
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*07:03, 07:08, 07:16, 07:32, 07:37	B703, B7, –	22																			
*07:04, 07:25	B7	22												34							
*07:07, 07:19, 07:33, 07:40, 07:53, 07:77, 07:122, 07:139	B7, 42, –																				
*07:20, 07:24, 07:131	B7, –	22		24																	
*07:27	–	22										32								40	
*07:28	B7	22					27														
*07:36, 07:81	B7, –	22																			
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*07:60	–			24																	
*07:65	–	22																	38		
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*07:78	–											31									
*07:84	–																				
*07:100	–			24																	
*07:133	–	22																			
*07:134	–	22																	38		
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*08:07, 08:14, 08:28, 08:37, 08:74, 08:77	B8, –	22	23																		
*08:09, 08:12:01-08:12:03, 08:16	B8		23						29												
*08:13, 08:20, 08:40, 08:70, 08:79	B8, –	22	23																		
*08:17, 08:54	–	22	23						29			32									
*08:21	B8	22	23	24					29												
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101.708-24– including *Taq* polymerase, IFU-01
 101.708-24u – without *Taq* polymerase, IFU-02

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		44			47																	64	B7, B42, Null, –	*07:02:01-07:02:29, 07:05:01-07:06, 07:09-07:15, 07:17-07:18:02, 07:21-07:23, 07:26, 07:29-07:31, 07:34-07:35, 07:39, 07:41-07:46, 07:48-07:49N, 07:51-07:52, 07:55-07:59, 07:61-07:64, 07:66-07:68:03, 07:70-07:72, 07:74-07:76, 07:79-07:80, 07:82-07:83, 07:86-07:99, 07:101-07:121, 07:124-07:130, 07:132, 07:135N-07:138, 07:140-07:144
		44																				64	B703, B7, –	*07:03, 07:08, 07:16, 07:32, 07:37
		44		46	47																	64	B7	*07:04, 07:25
		44			47																	64	B7, 42, –	*07:07, 07:19, 07:33, 07:40, 07:53, 07:77, 07:122, 07:139
		44			47																	64	B7, –	*07:20, 07:24, 07:131
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		44			47																	64	–	*07:60
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		44			47																	64	–	*07:73
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		44			47						53											64	–	*07:84
		44			47															62		64	–	*07:100
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		44		46																		64	B8, –, Null	*08:01:01-08:01:16, 08:05, 08:08N, 08:10-08:11, 08:15, 08:18-08:19N, 08:22-08:24, 08:27, 08:29-08:31, 08:33-08:35, 08:39, 08:41-08:48, 08:51, 08:53, 08:56-08:59, 08:61, 08:63-08:64, 08:66-08:69, 08:71-08:73, 08:75, 08:80
				46																	63		B8, –	*08:02-08:03, 08:52, 08:78
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		44		46																		64	B8, –	*08:07, 08:14, 08:28, 08:37, 08:74, 08:77
		44		46																		64	B8	*08:09, 08:12:01-08:12:03, 08:16
		44																				64	B8, –	*08:13, 08:20, 08:40, 08:70, 08:79
		44		46										56								64	–	*08:17, 08:54
		44		46																		64	B8	*08:21
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101.708-24– including *Taq* polymerase, IFU-01101.708-24u – without *Taq* polymerase, IFU-02Visit www.olerup-ssp.com for

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*08:36	–	22	23						29												
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*13:39	–				25						31						37				
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*14:02:03, 14:02:06, 14:24, 14:28	B65, –				25																
*14:02:05	B65				25		27														
*14:05-14:06:02, 14:13	B14, –						27														
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101.708-24– including *Taq* polymerase, IFU-01
 101.708-24u – without *Taq* polymerase, IFU-02

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	43	44																				64	B65, –	*14:02:03, 14:02:06, 14:24, 14:28
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101.708-24– including *Taq* polymerase, IFU-01
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					47			50							57					62		64	–	*54:06
		44			47			50							57							64	B54	*54:11
					47			50		52					57	58					63		–	*54:12
					47			50			53				57	58						64	–	*54:20
					47			50			53					58						64	B55, –	*55:01:01-55:01:06, 55:01:08, 55:03, 55:05, 55:11, 55:15, 55:25, 55:29, 55:31, 55:33, 55:36, 55:38, 55:44-55:45, 55:52-55:54
					47			50														64	B55, B56, Null, –	*55:04, 55:08, 55:13, 55:23, 55:27, 55:32, 55:46, 55:49, 56:15, 56:18-56:19N, 56:22, 56:31-56:32 ¹²
					47			50			53											64	B22, B55	*55:09, 55:24
					47			50										60				64	–	*55:14
					47			50			53											64	B55, –	*55:17, 55:28
														56		58						64	–	*55:18
				46	47			50														64	B22	*55:20
					47			50			w					58					62	64	B55	*55:21
					47			50														64	B22	*55:22
					47			50						56		58						64	–	*55:34
					47			50			53			56		58						64	–	*55:40
					47			50														64	–	*55:51
					47			50								59						64	B56, Null, –	*56:01:01-56:02, 56:04, 56:08, 56:14, 56:16, 56:20:01, 56:24, 56:26-56:30
					47			50												62		64	B22, 15	*56:03
					47			50			53					58						64	B56	*56:05:01
					47			50			53											64	B56	*56:05:02
					47			50			53					58			w			64	B78	*56:06
					47			50									59				63		B56	*56:07
					47			50														64	B56, B22	*56:09, 56:11-56:12
					47			50								59						64	B56	*56:13
																59						64	B56	*56:17
		44			47			50								59						64	–	*56:20:02
					47			50		52	53										63		–	*56:21
																58						64	–	*56:23
					47			50			53						59					64	–	*56:25
												54						60				63	B57, Null, –	*57:01:01-57:01:04, 57:01:06-57:03:02, 57:05-57:06, 57:08, 57:10, 57:15-57:20, 57:22-57:23, 57:25-57:30, 57:32-57:44, 57:46, 57:48-57:50, 57:52, 58:36 ¹³
												54						60				63	B57, –	*57:01:05, 57:11, 57:13, 57:21, 57:31, 57:47
												54						60				63	B57	*57:04
					48							54						60				63	B57, –	*57:07, 57:24
					48							54						60				63	B57	*57:09
																		60				64	B57	*57:12
42	43	44	45	46	47	48	49	50	51	52	53	54	55	56	57	58	59	60	61	62	63	64		Well No.

101.708-24– including *Taq* polymerase, IFU-01
 101.708-24u – without *Taq* polymerase, IFU-02

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 “Instructions for Use” (IFU)

Lot No.: **46N**

Lot-specific information

Well No.		22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41
*57:14	–																37				
*57:45, 57:51	–				25												37				
*58:01:01-58:01:02, 58:01:04-58:01:09, 58:04-58:05, 58:10N-58:15, 58:19, 58:21-58:24, 58:28-58:35	B58, Null, –																37				
*58:01:03, 58:02, 58:06, 58:16, 58:25-58:27	B58, –																				
*58:07	B58											33									
*58:09	B17																37				
*58:17N	Null																37				
*58:18	–			24																	
*58:20	–																				41
*59:01:01-59:01:01:02, 59:05	B59, –																				
*59:02-59:03	B59, –																				
*59:04	–																				
*67:01:01, 67:03	B67, –					26															41
*67:01:02-67:02	B67, –																				41
*73:01-73:02	B73, –																				
*78:01:01-78:01:02, 78:02:02-78:03, 78:07	B78, –									30								38			
*78:02:01, 78:04	B78, B35									30								38			
*78:05	–									30								38			
*78:06	–									30											
*81:01	B81	22																			
*81:02	B81	22																			
*81:03-81:05	Null, –	22																			
*82:01-82:03	B82, –								29			32							39		
*83:01	–																37				
A*23:31, A*24:106, C*16:10						27															
A*24:174												33									
A*26:68, A*68:56, C*06:20, C*12:50																					
C*01:30					25																
C*03:05, C*03:25, C*03:27				24																	
C*03:12, C*03:19																					
C*03:102																	37				
C*03:129																					
C*07:46									29												
C*15:02:04																					
C*15:25																					
C*15:39																					
C*15:51																					41
Well No.		22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41

101.708-24– including *Taq* polymerase, IFU-01
 101.708-24u – without *Taq* polymerase, IFU-02

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 “Instructions for Use” (IFU)

Lot No.: **46N**

Lot-specific information

42	43	44	45	46	47	48	49	50	51	52	53	54	55	56	57	58	59	60	61	62	63	64		Well No.
							49					54						60			63		–	*57:14
										52		54									63		–	*57:45, 57:51
												54									63		B58, Null, –	*58:01:01-58:01:02, 58:01:04-58:01:09, 58:04-58:05, 58:10N-58:15, 58:19, 58:21-58:24, 58:28-58:35
												54									63		B58, –	*58:01:03, 58:02, 58:06, 58:16, 58:25-58:27
												54									63		B58	*58:07
							49					54									63		B17	*58:09
																					63		Null	*58:17N
												54									63		–	*58:18
												54									63		–	*58:20
										52						58					63		B59, –	*59:01:01:01-59:01:01:02, 59:05
										52											63		B59, –	*59:02-59:03
										52						59					63		–	*59:04
	44				47																64		B67, –	*67:01:01, 67:03
	44				47																64		B67, –	*67:01:02-67:02
	44				47															62	64		B73, –	*73:01-73:02
											53					58			61		64		B78, –	*78:01:01-78:01:02, 78:02:02-78:03, 78:07
											53								61		64		B78, B35	*78:02:01, 78:04
											53			56							64		–	*78:05
											53			56							64		–	*78:06
					47			50	51												64		B81	*81:01
	44				47				51												64		B81	*81:02
					47				51												64		Null, –	*81:03-81:05
					47			50								59					64		B82, –	*82:01-82:03
					47	48		50							57						64		–	*83:01
																								A*23:31, A*24:106, C*16:10
																								A*24:174
																				62				A*26:68, A*68:56, C*06:20, C*12:50
																								C*01:30
																								C*03:05, C*03:25, C*03:27
																59								C*03:12, C*03:19
																59								C*03:102
				45																				C*03:129
																								C*07:46
																58								C*15:02:04
							48																	C*15:25
							49																	C*15:39
																								C*15:51
42	43	44	45	46	47	48	49	50	51	52	53	54	55	56	57	58	59	60	61	62	63	64		Well No.

101.708-24– including Taq polymerase, IFU-01**101.708-24u – without Taq polymerase, IFU-02**Visit www.olerup-ssp.com for**“Instructions for Use” (IFU)****Lot No.: 46N****Lot-specific information**

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

Well number 22 contains the primer pair giving rise to the shorter, 800 bp, internal positive control band.

In addition, wells number 25, 26, 27, 31, 37, 40, 41, 53 and 60 contain the primer pair giving rise to the shorter, 800 bp, internal positive control band.

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

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

⁴The sequence of the B*0701 allele has been shown to be in error.

The B*08:06 allele has been shown to be identical to B*08:20.

The sequence of the B*13:05 allele has been shown to be identical to B*13:04.

The B*13:24 allele has been renamed B*13:22:02

The B*15:01:05 allele has been corrected and renamed B*15:120

The B*15:22 allele has been renamed B*35:43.

The sequence of the B*15:41 allele has been shown to be identical to B*15:39.

The B*15:59 allele has been renamed B*35:44.

The sequence of the B*18:16 allele has been shown to be identical to B*18:14.

The sequence of the B*27:051 allele has been shown to be identical to B*27:05:02.

The sequence of the B*27:22 allele has been shown to be identical to the corrected B*27:06 sequence.

The B*35:43:02 allele has been renamed B*35:185.

The B*35:73 allele has been renamed B*35:08:03.

The sequence of the B*39012 allele has been shown to be identical to B*39:01:01:01.

The sequence of the B*3921 allele has been shown to be identical to B*39:24.

The sequence of the B*4017 allele has been shown to be identical to B*40:16.

The sequence of the B*4041 allele has been shown to be identical to B*40:40.

The sequence of the B*4203 allele has never been assigned.

The sequence of the B*4401 allele has been shown to be identical to B*44:02:01:01.

The sequence of the B*5003 allele has been shown to be identical to B*50:02.

The sequence of the B*5125 allele has been shown to be identical to B*51:22.

The B*5147 allele has been renamed B*51:09:02.

The sequence of the B*5506 allele has been shown to be identical to B*55:04.

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

The B*7901 allele has been renamed B*15:18:01.

The B*9530 allele has been renamed B*15:27:02.

⁵The B*08:26, 08:50, 08:62 and the B*42:07 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.

⁶The B*13:04, 13:10, 13:21 and 13:35 and the B*44:135 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.

⁷The B*14:08 and the B*39:25N, 39:30, 39:32-39:34, 39:43, 39:47 and 39:50 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.

⁸The B*18:29 and the B*35:09:01-35:09:03, 35:18, 35:31-35:32:02, 35:37, 35:53N, 35:64, 35:68:01-35:68:02, 35:75, 35:88, 35:99, 35:118-35:119, 35:127, 35:151 and 35:174 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.

⁹The B*41:09 and the B*45:02-45:03 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.

101.708-24– including *Taq* polymerase, IFU-01
101.708-24u – without *Taq* polymerase, IFU-02

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Lot No.: 46N**Lot-specific information**

¹⁰The B*51:104 and 51:118N and the B*58:08:01-58:08:02 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.

¹¹The*54:01:02 and the B*55:01:07, 55:02:01-55:02:06, 55:07, 55:10, 55:12, 55:16, 55:19, 55:26, 55:30, 55:35, 55:37, 55:39, 55:41-55:43, 55:47-55:48 and 55:50 and the B*56:10 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.

¹²The B*55:04, 55:08, 55:13, 55:23, 55:27, 55:32, 55:46 and 55:49 and the B*56:15, 56:18-56:19N, 56:22 and 56:31-56:32 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.

¹³The 57:01:01-57:01:04, 57:01:06-57:03:02, 57:05-57:06, 57:08, 57:10, 57:15-57:20, 57:22-57:23, 57:25-57:30, 57:32-57:44, 57:46, 57:48-57:50, 57:52 and the B*58:36 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.

¹⁴The grouping of not serologically defined alleles is taken from Tissue Antigens 73, 95-170, 2009.

‘ser’, serological HLA specificity.

‘w’, might be weakly amplified.

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

101.708-24– including *Taq* polymerase, IFU-01

101.708-24u – without *Taq* polymerase. IFU-02

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“Instructions for Use” (IFU)

Lot No.: 46N

Lot-specific information

INTERPRETATION TABLE																											
DR low resolution SSP typing																											
Amplification patterns of the DRB1*01:01 to DRB1*10:03 alleles																											
		Well																									
		65	66	67	68	69	70	71	72	73	74	75	76	77	78	79	80	81	82	83	84	85	86	87			
Length of spec.		255	205							235	210			170	100	85	215					160	215	175			
PCR product(s)										135	170	135	90				195										
Length of int. pos. control ¹		515								430	515	250	430	430	430	430	430										
5'-primer(s) ²		13(124)	13(124)	13(126)	13(126)	13(125)	13(125)	13(125)	13(125)	13(125)	13(127)	16(133)	26(165)	26(164)	13(125)	10(116)	10(116)	13(125)	1 st	26(164)	13(125)	10(116)	240	160			
		5'-A-T ³	5'-gAA ³	5'-AAG ³	5'-AAG ³	5'-gTT ³	5'-gTT ³		5'-ACC ³	5'-ATA ³	5'-ATA ³	5'-gTT ³	5'-gAG ³	5'-gCg ³	5'-gTC ³	5'-gTT ³	5'-gCT ³	5'-gCT ³	5'-CAA ³	5'-gTA ³	5'-gCT ³	240 <td>160</td> <td></td>	160				
		14(129)	13(126)	13(126)	13(126)	47(227)	16(133)		13(125)	13(125)	14(127)	16(133)	58(261)	31(178)	16(133)	12(122)	12(122)	12(122)	37(197)	34(189)	34(189)	10(116)	28(170)	13(125)			
		5'-gAA ³	5'-AAG ³	5'-AAG ³	5'-AAG ³	5'-gTT ³	5'-gTT ³		5'-ACC ³	5'-ATA ³	5'-gTA ³	5'-gTT ³	5'-gAG ³	5'-gCg ³	5'-gTC ³	5'-TAT ³	5'-TAT ³	5'-TAT ³	5'-gTT ³	5'-CAG ³	5'-gCT ³	240 <td>160</td> <td></td>	160				
									13(125)	13(125)	14(127)				38(200)				37(197)								
									5'-ATA ³	5'-gTA ³	5'-gTA ³				5'-CgT ³				5'-gTA ³								
									5'-gTC ³	5'-gTT ³	5'-gTT ³	5'-gTT ³	5'-gAG ³	5'-gCg ³	5'-gTC ³	5'-gTC ³	5'-gTC ³	5'-gTC ³	5'-gTA ³	5'-gTA ³	5'-gTC ³	240 <td>160</td> <td></td>	160				
									5'-gTC ³	5'-gTT ³	5'-gTT ³	5'-gTT ³	5'-gAG ³	5'-gCg ³	5'-gTC ³	5'-gTC ³	5'-gTC ³	5'-gTC ³	5'-gTA ³	5'-gTA ³	5'-gTC ³	240 <td>160</td> <td></td>	160				
									5'-gTC ³	5'-gTT ³	5'-gTT ³	5'-gTT ³	5'-gAG ³	5'-gCg ³	5'-gTC ³	5'-gTC ³	5'-gTC ³	5'-gTC ³	5'-gTA ³	5'-gTA ³	5'-gTC ³	240 <td>160</td> <td></td>	160				
									5'-gTC ³	5'-gTT ³	5'-gTT ³	5'-gTT ³	5'-gAG ³	5'-gCg ³	5'-gTC ³	5'-gTC ³	5'-gTC ³	5'-gTC ³	5'-gTA ³	5'-gTA ³	5'-gTC ³	240 <td>160</td> <td></td>	160				
									5'-gTC ³	5'-gTT ³	5'-gTT ³	5'-gTT ³	5'-gAG ³	5'-gCg ³	5'-gTC ³	5'-gTC ³	5'-gTC ³	5'-gTC ³	5'-gTA ³	5'-gTA ³	5'-gTC ³	240 <td>160</td> <td></td>	160				
									5'-gTC ³	5'-gTT ³	5'-gTT ³	5'-gTT ³	5'-gAG ³	5'-gCg ³	5'-gTC ³	5'-gTC ³	5'-gTC ³	5'-gTC ³	5'-gTA ³	5'-gTA ³	5'-gTC ³	240 <td>160</td> <td></td>	160				
									5'-gTC ³	5'-gTT ³	5'-gTT ³	5'-gTT ³	5'-gAG ³	5'-gCg ³	5'-gTC ³	5'-gTC ³	5'-gTC ³	5'-gTC ³	5'-gTA ³	5'-gTA ³	5'-gTC ³	240 <td>160</td> <td></td>	160				
									5'-gTC ³	5'-gTT ³	5'-gTT ³	5'-gTT ³	5'-gAG ³	5'-gCg ³	5'-gTC ³	5'-gTC ³	5'-gTC ³	5'-gTC ³	5'-gTA ³	5'-gTA ³	5'-gTC ³	240 <td>160</td> <td></td>	160				
									5'-gTC ³	5'-gTT ³	5'-gTT ³	5'-gTT ³	5'-gAG ³	5'-gCg ³	5'-gTC ³	5'-gTC ³	5'-gTC ³	5'-gTC ³	5'-gTA ³	5'-gTA ³	5'-gTC ³	240 <td>160</td> <td></td>	160				
									5'-gTC ³	5'-gTT ³	5'-gTT ³	5'-gTT ³	5'-gAG ³	5'-gCg ³	5'-gTC ³	5'-gTC ³	5'-gTC ³	5'-gTC ³	5'-gTA ³	5'-gTA ³	5'-gTC ³	240 <td>160</td> <td></td>	160				
									5'-gTC ³	5'-gTT ³	5'-gTT ³	5'-gTT ³	5'-gAG ³	5'-gCg ³	5'-gTC ³	5'-gTC ³	5'-gTC ³	5'-gTC ³	5'-gTA ³	5'-gTA ³	5'-gTC ³	240 <td>160</td> <td></td>	160				
									5'-gTC ³	5'-gTT ³	5'-gTT ³	5'-gTT ³	5'-gAG ³	5'-gCg ³	5'-gTC ³	5'-gTC ³	5'-gTC ³	5'-gTC ³	5'-gTA ³	5'-gTA ³	5'-gTC ³	240 <td>160</td> <td></td>	160				
									5'-gTC ³	5'-gTT ³	5'-gTT ³	5'-gTT ³	5'-gAG ³	5'-gCg ³	5'-gTC ³	5'-gTC ³	5'-gTC ³	5'-gTC ³	5'-gTA ³	5'-gTA ³	5'-gTC ³	240 <td>160</td> <td></td>	160				
									5'-gTC ³	5'-gTT ³	5'-gTT ³	5'-gTT ³	5'-gAG ³	5'-gCg ³	5'-gTC ³	5'-gTC ³	5'-gTC ³	5'-gTC ³	5'-gTA ³	5'-gTA ³	5'-gTC ³	240 <td>160</td> <td></td>	160				
									5'-gTC ³	5'-gTT ³	5'-gTT ³	5'-gTT ³	5'-gAG ³	5'-gCg ³	5'-gTC ³	5'-gTC ³	5'-gTC ³	5'-gTC ³	5'-gTA ³	5'-gTA ³	5'-gTC ³	240 <td>160</td> <td></td>	160				
									5'-gTC ³	5'-gTT ³	5'-gTT ³	5'-gTT ³	5'-gAG ³	5'-gCg ³	5'-gTC ³	5'-gTC ³	5'-gTC ³	5'-gTC ³	5'-gTA ³	5'-gTA ³	5'-gTC ³	240 <td>160</td> <td></td>	160				
									5'-gTC ³	5'-gTT ³	5'-gTT ³	5'-gTT ³	5'-gAG ³	5'-gCg ³	5'-gTC ³	5'-gTC ³	5'-gTC ³	5'-gTC ³	5'-gTA ³	5'-gTA ³	5'-gTC ³	240 <td>160</td> <td></td>	160				
									5'-gTC ³	5'-gTT ³	5'-gTT ³	5'-gTT ³	5'-gAG ³	5'-gCg ³	5'-gTC ³	5'-gTC ³	5'-gTC ³	5'-gTC ³	5'-gTA ³	5'-gTA ³	5'-gTC ³	240 <td>160</td> <td></td>	160				
									5'-gTC ³	5'-gTT ³	5'-gTT ³	5'-gTT ³	5'-gAG ³	5'-gCg ³	5'-gTC ³	5'-gTC ³	5'-gTC ³	5'-gTC ³	5'-gTA ³	5'-gTA ³	5'-gTC ³	240 <td>160</td> <td></td>	160				
									5'-gTC ³	5'-gTT ³	5'-gTT ³	5'-gTT ³	5'-gAG ³	5'-gCg ³	5'-gTC ³	5'-gTC ³	5'-gTC ³	5'-gTC ³	5'-gTA ³	5'-gTA ³	5'-gTC ³	240 <td>160</td> <td></td>	160				
									5'-gTC ³	5'-gTT ³	5'-gTT ³	5'-gTT ³	5'-gAG ³	5'-gCg ³	5'-gTC ³	5'-gTC ³	5'-gTC ³	5'-gTC ³	5'-gTA ³	5'-gTA ³	5'-gTC ³	240 <td>160</td> <td></td>	160				
									5'-gTC ³	5'-gTT ³	5'-gTT ³	5'-gTT ³	5'-gAG ³	5'-gCg ³	5'-gTC ³	5'-gTC ³	5'-gTC ³	5'-gTC ³	5'-gTA ³	5'-gTA ³	5'-gTC ³	240 <td>160</td> <td></td>	160				
									5'-gTC ³	5'-gTT ³	5'-gTT ³	5'-gTT ³	5'-gAG ³	5'-gCg ³	5'-gTC ³	5'-gTC ³	5'-gTC ³	5'-gTC ³	5'-gTA ³	5'-gTA ³	5'-gTC ³	240 <td>160</td> <td></td>	160				
									5'-gTC ³	5'-gTT ³	5'-gTT ³	5'-gTT ³	5'-gAG ³	5'-gCg ³	5'-gTC ³	5'-gTC ³	5'-gTC ³	5'-gTC ³	5'-gTA ³	5'-gTA ³	5'-gTC ³	240 <td>160</td> <td></td>	160				
									5'-gTC ³	5'-gTT ³	5'-gTT ³	5'-gTT ³	5'-gAG ³	5'-gCg ³	5'-gTC ³	5'-gTC ³	5'-gTC ³	5'-gTC ³	5'-gTA ³	5'-gTA ³	5'-gTC ³	240 <td>160</td> <td></td>	160				
									5'-gTC ³	5'-gTT ³	5'-gTT ³	5'-gTT ³	5'-gAG ³	5'-gCg ³	5'-gTC ³	5'-gTC ³	5'-gTC ³	5'-gTC ³	5'-gTA ³	5'-gTA ³	5'-gTC ³	240 <td>160</td> <td></td>	160				
									5'-gTC ³	5'-gTT ³	5'-gTT ³	5'-gTT ³	5'-gAG ³	5'-gCg ³	5'-gTC ³	5'-gTC ³	5'-gTC ³	5'-gTC ³	5'-gTA ³	5'-gTA ³	5'-gTC ³	240 <td>160</td> <td></td>	160				
									5'-gTC ³	5'-gTT ³	5'-gTT ³	5'-gTT ³	5'-gAG ³	5'-gCg ³	5'-gTC ³	5'-gTC ³	5'-gTC ³	5'-gTC ³	5'-gTA ³	5'-gTA ³	5'-gTC ³	240 <td>160</td> <td></td>	160				
									5'-gTC ³	5'-gTT ³	5'-gTT ³	5'-gTT ³	5'-gAG ³	5'-gCg ³	5'-gTC ³	5'-gTC ³	5'-gTC ³	5'-gTC ³	5'-gTA ³	5'-gTA ³	5'-gTC ³	240 <td>160</td> <td></td>	160				
									5'-gTC ³	5'-gTT ³	5'-gTT ³	5'-gTT ³	5'-gAG ³	5'-gCg ³	5'-gTC ³	5'-gTC ³	5'-gTC ³	5'-gTC ³	5'-gTA ³	5'-gTA ³	5'-gTC ³	240 <td>160</td> <td></td>	160				
									5'-gTC ³	5'-gTT ³	5'-gTT ³	5'-gTT ³	5'-gAG ³	5'-gCg ³	5'-gTC ³	5'-gTC ³	5'-gTC ³	5'-gTC ³	5'-gTA ³	5'-gTA ³	5'-gTC ³	240 <td>160</td> <td></td>	160				
									5'-gTC ³	5'-gTT ³	5'-gTT ³	5'-gTT ³	5'-gAG ³	5'-gCg ³	5'-gTC ³	5'-gTC ³	5'-gTC ³	5'-gTC ³	5'-gTA ³	5'-gTA ³	5'-gTC ³	240 <td>160</td> <td></td>	160				
									5'-gTC ³	5'-gTT ³	5'-gTT ³	5'-gTT ³	5'-gAG ³	5'-gCg ³	5'-gTC ³	5'-gTC ³	5'-gTC ³	5'-gTC ³	5'-gTA ³	5'-gTA ³	5'-gTC ³	240 <td>160</td> <td></td>	160				
									5'-gTC ³	5'-gTT ³	5'-gTT ³	5'-gTT ³	5'-gAG ³	5'-gCg ³	5'-gTC ³	5'-gTC ³	5'-gTC ³	5'-gTC ³	5'-gTA ³	5'-gTA ³	5'-gTC ³	240 <td>160</td> <td></td>	160				
									5'-gTC ³	5'-gTT ³	5'-gTT ³	5'-gTT ³	5'-gAG ³	5'-gCg ³	5'-gTC ³	5'-gTC ³	5'-gTC ³	5'-gTC ³	5'-gTA ³	5'-gTA ³	5'-gTC ³	240 <td>160</td> <td></td>	160				
									5'-gTC ³	5'-gTT ³	5'-gTT ³	5'-gTT ³	5'-gAG ³	5'-gCg ³	5'-gTC ³	5'-gTC ³	5'-gTC ³	5'-gTC ³	5'-gTA ³	5'-gTA ³	5'-gTC ³	240 <td>160</td> <td></td>	160				
									5'-gTC ³	5'-gTT ³	5'-gTT ³	5'-gTT ³	5'-gAG ³	5'-gCg ³	5'-gTC ³	5'-gTC ³	5'-gTC ³	5'-gTC ³	5'-gTA ³	5'-gTA ³	5'-gTC ³	240 <td>160</td> <td></td>	160				
									5'-gTC ³	5'-gTT ³	5'-gTT ³	5'-gTT ³	5'-gAG ³	5'-gCg ³	5'-gTC ³	5'-gTC ³	5'-gTC ³	5'-gTC ³	5'-gTA ³	5'-gTA ³	5'-gTC ³	240 <td>160</td> <td></td>	160				
									5'-gTC ³	5'-gTT ³	5'-gTT ³	5'-gTT ³	5'-gAG ³	5'-gCg ³	5'-gTC ³	5'-gTC ³	5'-gTC ³	5'-gTC ³	5'-gTA ³	5'-gTA ³	5'-gTC ³	240 <td>160</td> <td></td>	160				
									5'-gTC ³	5'-gTT ³	5'-gTT ³	5'-gTT ³	5'-gAG ³	5'-gCg ³	5'-gTC ³	5'-gTC ³	5'-gTC ³	5'-gTC ³	5'-gTA ³	5'-gTA ³	5'-gTC ³ </						

101.708-24– including *Taq* polymerase, IFU-01
 101.708-24u – without *Taq* polymerase, IFU-02

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Lot No.: **46N**

Lot-specific information

Well No.	DR	65	66	67	68	69	70	71	72	73	74	75	76	77	78	79	80	81	82	83	84	85	86	87
DRB1 allele⁴	ser⁹																							
*01:01:01-01:02:08, 01:04-01:38, 01:40N-01:41, 01:43-01:45	DR1, Null, –	65																						
*01:03, 01:39N	DR1, DR103, Null	66																						
*01:42	–	65	66																					
*03:01:01-01:03:01:19, 03:04:01-03:06, 03:09, 03:11:01-03:16, 03:18-03:20, 03:22-03:23, 03:25-03:26, 03:28, 03:30-03:31, 03:33-03:34, 03:36-03:37, 03:43-03:45, 03:47-03:48, 03:50-03:52, 03:54-03:63, 03:66-03:68N, 03:70-03:73, 03:75, 03:77	DR3, DR17, Null, –					69	70											81						
*03:02:01-03:03, 03:27, 03:29, 03:38, 03:53, 03:74	DR3, DR18, –					69	71											81						
*03:07, 03:17, 03:21, 03:24, 03:32, 03:35, 03:39-03:41, 03:49	DR3, –					69												81						
*03:08, 03:65	DR3, –					69	70				75		77											
*03:10	DR3					69	70												83	84				
*03:42, 03:69	–					69																		
*03:46, 03:64	–					69	70																	
*03:76	–					70						76			79		81							
*04:01:01-04:61, 04:63-04:68, 04:70-04:72:02, 04:74-04:104, 04:106-04:107	DR4, DR3, Null, –							72																
*04:62, 04:69, 04:73, 04:105	DR4, –							72										82						
*07:01:01-01:07:01:04, 07:03-07:22	DR7, Null, –									73														
*08:01:01-08:02:04, 08:04:01-08:07, 08:11, 08:16-08:17, 08:22, 08:24, 08:26, 08:28, 08:39, 08:42-08:44	DR8, –									74							80							
*08:03:02-08:03:03, 08:10, 08:12-08:15, 08:18-08:19, 08:23, 08:25, 08:27, 08:29-08:30:03, 08:33-08:34, 08:36-08:38, 08:45-08:49	DR8, –									74														
*08:08	DR8									74							80	82						
*08:09, 14:15 ⁵	DR8									74							80			84				
*08:20, 13:18, 13:47, 13:55 ⁶	DR13, –															79	80	81		84				
Well No.	DR	65	66	67	68	69	70	71	72	73	74	75	76	77	78	79	80	81	82	83	84	85	86	87

101.708-24– including *Taq* polymerase, IFU-01101.708-24u – without *Taq* polymerase, IFU-02Visit www.olerup-ssp.com for

“Instructions for Use” (IFU)

Lot No.: 46N

Lot-specific information

Well No.	DR	65	66	67	68	69	70	71	72	73	74	75	76	77	78	79	80	81	82	83	84	85	86	87
*08:21	DR8									74						79	80				84			
*08:31, 08:41, 11:67 ⁷	DR8, DR11, –									74				77			80							
*08:32	–									74					78						84			
*08:35	–									74											84			
*08:40	–						70			74														
*09:01:02-09:01:05, 09:01:07-09:02:02, 09:04-09:17	DR9, –										75								83					
*09:01:06, 09:03	DR9										75													
*10:01:01-10:04	DR10, –												76											
*11:01:01-11:01:16, 11:04:01-11:04:08, 11:06:01-11:06:02, 11:09-11:10:02, 11:12:01-11:12:02, 11:15, 11:24, 11:27:01-11:30, 11:32-11:33, 11:35, 11:37:01-11:39, 11:43-11:44, 11:46:01-11:47, 11:49:01-11:51, 11:54:01-11:54:02, 11:56, 11:58:01-11:58:02, 11:60-11:62, 11:66, 11:72, 11:74:01-11:75, 11:77-11:78, 11:81, 11:84, 11:88, 11:90-11:92, 11:94-11:95, 11:97, 11:99-11:102:02, 11:106, 11:108-11:117, 11:120-11:121	DR11, –													77		79	80							
*11:02:01-11:03, 11:11:01-11:11:02, 11:14:01-11:14:02, 11:16, 11:20-11:21, 11:36, 11:40-11:41, 11:48, 11:63, 11:65:01-11:65:02, 11:68, 11:70, 11:76, 11:85-11:86, 11:93, 11:118	DR11, DR13, –						70							77		79	80							
*11:05	DR11													77			80							
*11:07, 11:53, 11:103, 11:105, 11:107	DR11, –					69					75			77										
*11:08:01-11:08:02, 11:18-11:19:03, 11:42, 11:57	DR11, –													77		79								
*11:13:01-11:13:02	DR11							w						77						83	84			
*11:17, 11:52	DR11, DR14													77						83	84			
*11:22, 11:98, 11:104	–													77										
*11:23, 11:25, 11:96	DR11, –													77		79	80			84				
*11:26, 11:34	DR11						71							77										
*11:31, 11:45, 11:64, 11:119	DR11, –													77		79				84				
*11:55	DR11													77			80			84				
*11:59, 11:80, 11:83, 11:87	DR11, –						70					76		77		79	80							
Well No.	DR	65	66	67	68	69	70	71	72	73	74	75	76	77	78	79	80	81	82	83	84	85	86	87

101.708-24– including *Taq* polymerase, IFU-01
 101.708-24u – without *Taq* polymerase, IFU-02

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Lot No.: **46N**

Lot-specific information

Well No.	DR	65	66	67	68	69	70	71	72	73	74	75	76	77	78	79	80	81	82	83	84	85	86	87
*11:69, 11:82	–													77			80		82					
*11:73, 11:79	–						70							77		79								
*11:89	–													77							84			
*12:01:01-12:01:04, 12:03:02, 12:05-12:12, 12:14, 12:17, 12:24N-12:25, 12:28-12:30, 12:34-12:35	DR12, Null, –														78									
*12:02:01-12:02:05, 12:13, 12:15, 12:18-12:21, 12:23, 12:26-12:27, 12:31N-12:33	DR12, Null, –														78		80							
*12:04	DR12										74				78									
*12:16	–										74				78		80							
*12:22	–									73	74				78									
*13:01:01-13:02:01, 13:02:03- 13:02:05, 13:04, 13:08, 13:16, 13:20, 13:22-13:24, 13:28- 13:29, 13:31-13:32, 13:34- 13:36, 13:38-13:40, 13:48, 13:51-13:52, 13:54, 13:59, 13:61:01-13:61:02, 13:63- 13:65, 13:68-13:70, 13:72- 13:76, 13:78-13:80, 13:83- 13:84, 13:87, 13:91-13:93, 13:96:01-13:99, 13:102, 13:105-13:107, 13:109, 13:111-13:114, 13:117, 13:121, 13:123-13:128, 13:130-13:131, 13:135	DR11, DR13, DR14, Null, –						70																	
*13:02:02, 13:03:01-13:03:06, 13:10, 13:33:01-13:33:03, 13:37, 13:66:01-13:66:02, 13:81, 13:88-13:90, 13:94- 13:95, 13:101, 13:115, 13:120, 13:133	DR13, –						70									79		81						
*13:05:01-13:05:02, 13:07:01- 13:07:02, 13:11:01-13:11:02, 13:14:01-13:14:03, 13:21:01- 13:21:02, 13:42, 13:46, 13:49- 13:50:02, 13:62, 13:100, 13:108, 13:132	DR13, DR11, DR6, –															79	80	81						
*13:06, 13:12:01-13:12:02, 13:25, 13:30, 13:56, 13:58, 13:60, 13:77, 13:82, 13:110, 13:118, 13:134	DR13, DR11, DR6, –															79		81						
*13:09	DR13																80	81						
Well No.	DR	65	66	67	68	69	70	71	72	73	74	75	76	77	78	79	80	81	82	83	84	85	86	87

101.708-24– including *Taq* polymerase, IFU-01
 101.708-24u – without *Taq* polymerase, IFU-02

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Lot No.: **46N**

Lot-specific information

Well No.	DR	65	66	67	68	69	70	71	72	73	74	75	76	77	78	79	80	81	82	83	84	85	86	87
*13:13, 13:119, 14:84, 14:116 ⁸	DR13, –															79	81			84				
*13:15, 13:19, 13:53, 13:57, 13:104	DR13, –						70	71								79	80	81						
*13:17, 13:116	DR13, –						70			73							80							
*13:26	DR14							71								79	80	81						
*13:27, 13:41, 13:71	DR13						70					76				79	80	81						
*13:43	DR13						70									79	80			83	84			
*13:44, 13:86	–, –							71										81						
*13:45	DR13						70									79	80		82		84			
*13:67, 13:103	DR13, –															79	80							
*13:85	–						70	71								79		81						
*13:122	–						70									79								
*13:129	–						70					76					80	81						
*14:01:01-14:01:02, 14:04, 14:07:01-14:07:02, 14:10, 14:26, 14:28, 14:31, 14:35, 14:38-14:39, 14:54-14:55, 14:57, 14:60-14:62, 14:70-14:71, 14:75-14:76, 14:79, 14:86-14:88, 14:90, 14:99, 14:101, 14:104, 14:107, 14:110-14:114, 14:117-14:118, 14:120, 14:122	DR14, DR1404, DR4, DR6, –																		82	83	84			
*14:01:03, 14:08, 14:23:02, 14:34, 14:72, 14:92N, 14:97	DR14, Null, –																			83	84			
*14:02, 14:06:01-14:06:02, 14:09, 14:13, 14:17, 14:20, 14:29-14:30, 14:33, 14:41, 14:47-14:48, 14:51, 14:80, 14:83, 14:94, 14:106, 14:108, 14:121	DR14, DR6, –							71										81		83				
*14:03:01-14:03:02, 14:12:01-14:12:02, 14:40, 14:63, 14:67, 14:77-14:78, 14:85, 14:102, 14:115	DR1403, DR14, DR6, –							71								79		81			84			
*14:05:01-14:05:03, 14:14, 14:23:01, 14:23:03, 14:36, 14:43-14:45, 14:56, 14:59, 14:64, 14:91, 14:96, 14:100, 14:103	DR14, –																	81		83	84			
*14:11	DR14									74										83	84			
*14:16	DR6						70									79	80		82	83	84			
*14:18, 14:81	DR14, –							71										81		83	84			
*14:19, 14:21, 14:109	DR14, –						70	71								79		81		w				
*14:22, 14:105	DR14, –															79	80		82	83	84			
Well No.	DR	65	66	67	68	69	70	71	72	73	74	75	76	77	78	79	80	81	82	83	84	85	86	87

101.708-24– including *Taq* polymerase, IFU-01
 101.708-24u – without *Taq* polymerase, IFU-02

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Lot No.: **46N**

Lot-specific information

Well No.	DR	65	66	67	68	69	70	71	72	73	74	75	76	77	78	79	80	81	82	83	84	85	86	87
*14:24	DR14							71									80	81						
*14:25, 14:53	DR6, DR13, 14															79	80		82		84			
*14:27	DR14							71								79	80	81			84			
*14:32:01-14:32:02	DR14							w											82	83	84			
*14:37	DR14																80	81	82					
*14:42	–																	81			84			
*14:46, 14:52	DR14																			83				
*14:49, 14:119	DR14, –							71											82	83	84			
*14:50	DR14									73									82	83	84			
*14:58	DR14																		82		84			
*14:65	DR6							w										81		83	84			
*14:68, 14:93	DR14, –									74									82	83	84			
*14:69	–															79			82		84			
*14:73	–																80		82	83	84			
*14:74	–															79			82	83	84			
*14:82	–						70												82	83	84			
*14:89	–							71										81			84			
*14:95	–						70											81		83	84			
*14:98	–							71								79		81						
*15:01:01-15:20, 15:22-15:24, 15:26, 15:28-15:33, 15:35-15:65, 15:67-15:69	DR15, DR2, Null, –			67																				
*15:21	DR2			67																	w			
*15:25	–			67		69																		
*15:27, 15:34, 15:66	–			67																83				
*16:01:01-16:03, 16:05:01-16:05:02, 16:07-16:17, 16:19	DR16, Null, –				68																			
*16:04, 16:18	DR16, –				68																w			
DRB3*01:01:02:01-01:15, DRB3*02:01:02:26, DRB3*02:28, DRB3*03:01:01-03:03	DR52, –																					85		
DRB3*02:27	–															79						85		
DRB4*01:01:01:01-01:03:01:01, DRB4*01:03:01:03-01:08	DR53, –																						86	
DRB4*01:03:01:02N	Null																		82				86	
DRB5*01:01:01-01:14, DRB5*02:02-02:05	DR51, Null, –																							87
Well No.	ser ⁵	65	66	67	68	69	70	71	72	73	74	75	76	77	78	79	80	81	82	83	84	85	86	87

101.708-24– including *Taq* polymerase, IFU-01
101.708-24u – without *Taq* polymerase, IFU-02

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Lot No.: 46N**Lot-specific information**

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 65 contains the primer pair giving rise to the longer, 515 bp, internal positive control band. In addition, well number 74 contains the primer pair giving rise to the longer, 515 bp, internal positive control band.

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

³The codon, and in parenthesis the nucleotide, in the 2nd exon, matching the specificity-determining 3'-end of the primer is given in the anti-sense direction. Codon and nucleotide numbering as on the www.ebi.ac.uk/imgt/hla web site. The sequence of the 3 terminal nucleotides of the primer is given.

⁴The DRB1*0702 allele has been shown to be identical to DRB1*07:01:01:01.

The DRB1*08031 allele has been shown to be identical to DRB1*08:03:02.

The DRB1*09011 allele has been shown to be identical to DRB1*09:01:02.

The DRB1*1171 allele has been shown to be identical to DRB1*11:02:01.

The DRB1*12031 allele has been shown to be identical to DRB1*12:01:01.

The DRB1*1466 allele has been shown to be identical to DRB1*14:23:02.

The DRB1*1606 allele has been shown to be identical to DRB1*16:05:01.

The DRB3*010101 allele has been shown to be identical to DRB3*01:01:02:01.

The DRB4*0101102N allele has been renamed DRB4*01:03:01:02N.

The DRB5*0201 allele has been shown to be identical to DRB5*02:02.

The sequence of the DRB5*0201 allele has been shown to be identical to DRB5*02:02.

The DRB4*02:01N and DRB4*03:01N null alleles will not be amplified by the DR low resolution primer set.

⁵The DRB1*08:09 and the DRB1*14:15 alleles yield identical amplification patterns with the DR low resolution primer set. These alleles can be separated by the respective high resolution primer sets.

⁶The DRB1*08:20 and the DRB1*13:18, 13:47 and 13:55 alleles yield identical amplification patterns with the DR low resolution primer set. These alleles can be separated by the respective high resolution primer sets.

⁷The DRB1*08:31, 08:41 and DRB1*11:67 alleles yield identical amplification patterns with the DR low resolution primer set. These alleles can be separated by the respective high resolution primer sets.

⁸The DRB1*13:13 and 13:119 and the DRB1*14:84 and 14:116 alleles yield identical amplification patterns with the DR low resolution primer set. These alleles can be separated by the respective high resolution primer sets.

⁹The grouping of not serologically defined alleles is taken from Tissue Antigens 73, 95-170, 2009.

'ser', serological HLA specificity.

'w', may be weakly amplified.

'?', nucleotide sequence information for the primer matching region(s) is not known.

101.708-24– including *Taq* polymerase, IFU-01
 101.708-24u – without *Taq* polymerase, IFU-02

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Lot No.: 46N

Lot-specific information

INTERPRETATION TABLE										
DQ low resolution SSP typing										
Amplification patterns of the DQB1*05:01 to DQB1*04:08 alleles										
		Well ⁶								
		88	89	90	91	92	93	94	95	96
Length of spec.		225	220	210	220	130	135	145	210	Negative control
PCR product(s)			270					185	245	
Length of int.		515	430	430	515	515	515	515	430	
pos. control ¹										
5'-primer(s) ²		26(173) 5'-ggg 3'	9(122) 5'-gTT 3'	30(185) 5'-AAG 3'	26(173) 5'-TTA 3'	28(179) 5'-gAC 3'	26(173) 5'-TCT 3'	38(210) 5'-gCA 3'	9(122) 5'-gTT 3'	
			26(173) 5'-TTA 3'			28(179) 5'-gAC 3'		48(240) 5'-CgC 3'	21(159) 5'-ACC 3'	
			26(173) 5'-TCT 3'					55(260) 5'-gCC 3'		
								55(260) 5'-gCA 3'		
3'-primer(s) ³		87(356) 5'-ggT 3'	86(353) 5'-ACg 3'	86(353) 5'-gCT 3'	86(353) 5'-gCT 3'	57(266) 5'-Cgg 3'	57(266) 5'-CgT 3'	86(353) 5'-gCT 3'	77(327) 5'-ACg 3'	
			86(353) 5'-ACC 3'							
Well No.		88	89	90	91	92	93	94	95	96
DQB1 allele ⁴	ser. ⁵									
*05:01:01:01-05:14	DQ5, –	88								Negative control
*06:01:01:06:28, 06:30-06:44, 06:47	DQ6, DQ5, DQ1, Null, –		89							
*06:29	DQ6		89			92				
*02:01:01:02:02, 02:04-	DQ2, –			90						
*02:03	DQ2			90			93			
*03:01:01:01:03:01:06, 03:04, 03:09-03:10, 03:13-03:14, 03:16, 03:19, 03:21-03:22, 03:24, 03:27-03:29, 03:35-03:36	DQ3, DQ7, –				91			94		
*03:02:01:03:02:05, 03:05:01:03:05:04, 03:07-03:08, 03:11, 03:18, 03:32,	DQ8, –					92		94		
*03:03:02:01:03:03:04, 03:06, 03:12, 03:15, 03:20, 03:25-03:26, 03:30-03:31, 03:33-03:34, 03:38-03:39	DQ3, DQ9, –						93	94		
*03:17, 03:23	DQ9, –							94		
*04:01:01:04:02:02, 04:04-04:08	DQ4, –								95	
*04:03:01:04:03:02	–						93		95	
DQB1 allele ⁴	ser. ⁵									
Well No.		88	89	90	91	92	93	94	95	96

101.708-24– including *Taq* polymerase, IFU-01101.708-24u – without *Taq* polymerase, IFU-02Visit www.olerup-ssp.com for

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Lot No.: 46N**Lot-specific information**

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 88 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 DQ low resolution typing.

In addition, wells number 91, 92, 93 and 94 contain the primer pair giving rise to the longer, 515 bp, internal positive control band in order to allow kit identification.

²The codon, and in parenthesis the nucleotide, in the 2nd exon, matching the specificity-determining 3'-end of the primer is given. Codon and nucleotide numbering as on the www.ebi.ac.uk/imgt/hla web site. The sequence of the 3 terminal nucleotides of the primer is given.

³The codon, and in parenthesis the nucleotide, in the 2nd exon, matching the specificity-determining 3'-end of the primer is given in the anti-sense direction. Codon and nucleotide numbering as on the www.ebi.ac.uk/imgt/hla web site. The sequence of the 3 terminal nucleotides of the primer is given.

⁴The sequence of the DQB1*03031 allele has been shown to be identical to DQB1*03:03:02.

³The serological split of the DQB1*05:05, DQB1*06:06 to 06:07 alleles, the DQB1*06:10, 06:13, 06:15-06:24 and 06:27 to 06:44, the DQB1*02:04-02:06, the DQB1*03:07-03:09 and 03:11- 03:38 alleles and the DQB1:04:0301-04:08 alleles is not known. In this table we have used the expert-assigned serological grouping in Tissue Antigens (2009) 73:95-170, and also inferred the serological grouping from the naming of the sequence-defined allele.

⁶Primer mix 96 contains a negative control, which will amplify more than 95% of HLA amplicons as well as the amplicons generated by control primer pairs. PCR product sizes range from 75 to 200 base pairs. The PCR product generated by the control primer pair is 430 base pairs.

101.708-24– including *Taq* polymerase, IFU-01
 101.708-24u – without *Taq* polymerase, IFU-02

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Lot No.: **46N**

Lot-specific information

CELL LINE VALIDATION SHEET															
HLA-A low resolution primer set															
						Well									
						1	2	3	4	5	6	7	8	9	10
						201193101	201191802	201193103	201191804	201191806	201191807	201191808	201191809	201191810	201191811
						201191812	201191813	201191814	201193115	201191816					
	IHWC cell line	A*	A*	Lot No.:											
1	9001 SA	*24:02			-	-	-	-	-	+	-	-	-	-	-
2	9280 LK707	*02:01			-	+	-	-	-	-	-	-	-	-	-
3	9011 E4181324	*01:01			+	-	-	+	-	-	-	-	-	-	-
4	9275 GU373	*30:01			-	-	-	-	-	-	-	-	-	-	+
5	9009 KAS011	*01:01			+	-	-	+	-	-	-	-	-	-	-
6	9353 SM	*02:01	*26:03		-	+	-	-	-	-	+	-	-	+	-
7	9020 QBL	*26:01			-	-	-	-	-	-	+	-	+	-	-
8	9025 DEU	*31:01			-	-	-	-	-	-	-	-	-	-	+
9	9026 YAR	*26:01			-	-	-	-	-	-	+	-	+	-	-
10	9107 LKT3	*24:02			-	-	-	-	-	+	-	-	-	-	-
11	9051 PITOUT	*29:02			-	-	-	-	-	-	-	-	-	-	+
12	9052 DBB	*02:01			-	+	-	-	-	-	-	-	-	-	-
13	9004 JESTHOM	*02:01			-	+	-	-	-	-	-	-	-	-	-
14	9071 OLGA	*31:01			-	-	-	-	-	-	-	-	-	-	-
15	9075 DKB	*24:02			-	-	-	-	-	+	-	-	-	-	-
16	9037 SWEIG007	*29:02			-	-	-	-	-	-	-	-	-	-	+
17	9282 CTM3953540	*03:01	*80:01		-	-	+	-	+	-	-	-	-	-	+
18	9257 32367	*33:03	*74:01		-	-	-	-	-	-	-	-	-	-	-
19	9038 BM16	*02:01			-	+	-	-	-	-	-	-	-	-	-
20	9059 SLE005	*02:01			-	+	-	-	-	-	-	-	-	-	-
21	9064 AMALA	*02:17			-	+	-	-	-	W	-	-	-	-	-
22	9056 KOSE	*02:01			-	+	-	-	-	-	-	-	-	-	-
23	9124 IHL	*02:01	*34:01		-	+	-	-	-	-	+	-	+	+	-
24	9035 JBUSH	*32:01			-	-	-	-	-	-	-	+	-	-	-
25	9049 IBW9	*33:01			-	-	-	-	-	-	-	-	-	-	-
26	9285 WT49	*02:05			-	+	-	-	-	-	-	-	-	-	-
27	9191 CH1007	*24:10	*29:01		-	-	-	-	-	+	-	-	-	-	+
28	9320 BEL5GB	*02:01	*29:02		-	+	-	-	-	-	-	-	-	-	+
29	9050 MOU	*29:02			-	-	-	-	-	-	-	-	-	-	+
30	9021 RSH	*30:01	*68:02		-	-	-	-	-	-	+	-	-	-	+
31	9019 DUCAF	*30:02			-	-	-	-	-	-	-	-	-	-	+
32	9297 HAG	*02:01			-	+	-	-	-	-	-	-	-	-	-
33	9098 MT14B	*31:01			-	-	-	-	-	-	-	-	-	-	-
34	9104 DHIF	*31:01			-	-	-	-	-	-	-	-	-	-	-
35	9302 SСТО	*32:01			-	-	-	-	-	-	-	+	-	-	-
36	9024 KT17	*02:06	*11:01		-	+	-	+	-	-	-	-	+	-	-
37	9065 HHKB	*03:01			-	-	+	-	-	-	-	-	-	+	-
38	9099 LZL	*02:17			-	+	-	-	-	W	-	-	-	-	-
39	9315 CML	*01:01	*03:01		+	-	+	+	-	-	-	-	-	+	-
40	9134 WHONP199	*02:07	*30:01		-	+	-	-	-	-	-	-	-	-	+
41	9055 H0301	*03:01			-	-	+	-	-	-	-	-	-	-	+
42	9066 TAB089	*02:07			-	+	-	-	-	-	-	-	-	-	-
43	9076 T7526	*02:06	*02:07		-	+	-	-	-	-	-	-	-	-	-
44	9057 TEM	*66:01			-	-	-	-	-	-	+	-	+	-	-
45	9239 SHJO	*23:01	*24:02		-	-	-	-	+	+	-	-	-	-	-
46	9013 SCHU	*03:01			-	-	+	-	-	-	-	-	-	+	-
47	9045 TUBO	*02:16	*03:01		-	+	+	-	-	-	-	-	-	+	-
48	9303 TER-ND	*02:01	*11:01		-	+	-	+	-	-	-	-	-	+	-

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Lot-specific information

CELL LINE VALIDATION SHEET										
HLA-A low resolution primer set										
					Well					
					16	17	18	19	20	21
					201191817	201191818	201194019	201191820	201191821	201191823
	IHWC cell line		A*	A*	Lot No.:					
1	9001	SA	*24:02		-	-	-	-	-	-
2	9280	LK707	*02:01		-	-	-	-	-	-
3	9011	E4181324	*01:01		-	-	-	-	-	-
4	9275	GU373	*30:01		-	-	-	-	-	-
5	9009	KAS011	*01:01		-	-	-	-	-	-
6	9353	SM	*02:01	*26:03	-	-	-	-	-	+
7	9020	QBL	*26:01		-	-	-	-	-	-
8	9025	DEU	*31:01		-	-	-	-	-	-
9	9026	YAR	*26:01		-	-	-	-	-	-
10	9107	LKT3	*24:02		-	-	-	-	-	-
11	9051	PITOUT	*29:02		-	-	-	-	-	-
12	9052	DBB	*02:01		-	-	-	-	-	-
13	9004	JESTHOM	*02:01		-	-	-	-	-	-
14	9071	OLGA	*31:01		-	-	-	-	-	-
15	9075	DKB	*24:02		-	-	-	-	-	-
16	9037	SWEIG007	*29:02		-	-	-	-	-	-
17	9282	CTM3953540	*03:01	*80:01	-	-	-	-	-	+
18	9257	32367	*33:03	*74:01	-	+	+	-	-	-
19	9038	BM16	*02:01		-	-	-	-	-	-
20	9059	SLE005	*02:01		-	-	-	-	-	-
21	9064	AMALA	*02:17		-	-	-	-	-	-
22	9056	KOSE	*02:01		-	-	-	-	-	-
23	9124	IHL	*02:01	*34:01	-	-	-	-	-	-
24	9035	JBUSH	*32:01		+	-	-	-	-	-
25	9049	IBW9	*33:01		-	+	-	-	-	-
26	9285	WT49	*02:05		-	-	-	-	-	-
27	9191	CH1007	*24:10	*29:01	-	-	-	-	-	-
28	9320	BEL5GB	*02:01	*29:02	-	-	-	-	-	-
29	9050	MOU	*29:02		-	-	-	-	-	-
30	9021	RSH	*30:01	*68:02	-	-	-	+	-	-
31	9019	DUCAF	*30:02		-	-	-	-	-	-
32	9297	HAG	*02:01		-	-	-	-	-	-
33	9098	MT14B	*31:01		-	-	-	-	-	-
34	9104	DHIF	*31:01		-	-	-	-	-	-
35	9302	SSTO	*32:01		+	-	-	-	-	-
36	9024	KT17	*02:06	*11:01	-	-	-	-	-	-
37	9065	HHKB	*03:01		-	-	-	-	-	-
38	9099	LZL	*02:17		-	-	-	-	-	-
39	9315	CML	*01:01	*03:01	-	-	-	-	-	-
40	9134	WHONP199	*02:07	*30:01	-	-	-	-	-	-
41	9055	H0301	*03:01		-	-	-	-	-	-
42	9066	TAB089	*02:07		-	-	-	-	-	-
43	9076	T7526	*02:06	*02:07	-	-	-	-	-	-
44	9057	TEM	*66:01		-	-	-	-	-	-
45	9239	SHJO	*23:01	*24:02	-	-	-	-	-	-
46	9013	SCHU	*03:01		-	-	-	-	-	-
47	9045	TUBO	*02:16	*03:01	-	-	-	-	-	-
48	9303	TER-ND	*02:01	*11:01	-	-	-	-	-	-

101.708-24– including *Taq* polymerase, IFU-01101.708-24u – without *Taq* polymerase, IFU-02Visit www.olerup-ssp.com for

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Lot No.: **46N**

Lot-specific information

CELL LINE VALIDATION SHEET																				
HLA-B low resolution SSP kit																				
					Well															
						22	23	24	25	26	27	28	29	30	31	32	33	34	35	36
				Prod. No.:		201188648	201190002	201190003	201190004	201190005	201190006	201190007	201190008	201190009	201190010	201190011	201190013	201190014	201190015	201190016
	IHCW cell line		B*																	
1	9001	SA	*07:02		+	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
2	9280	LK707	*52:01	*73:01	-	-	-	-	-	-	-	-	-	+	-	-	-	-	-	-
3	9011	E4181324	*52:01		-	-	-	-	-	-	-	-	-	+	-	-	-	-	-	-
4	9275	GU373	*15:10	*53:01	-	-	-	-	-	-	-	-	+	-	+	-	-	+	-	-
5	9009	KAS011	*37:01		-	-	-	-	-	-	-	-	-	-	-	-	+	-	-	-
6	9353	SM	*39:01	*51:01	-	-	-	-	+	-	-	-	-	+	-	-	-	-	-	-
7	9020	QBL	*18:01		-	-	-	-	-	-	-	-	-	-	-	-	-	-	+	-
8	9025	DEU	*35:01		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
9	9026	YAR	*38:01		-	-	-	-	+	-	-	-	-	-	-	-	-	-	-	-
10	9107	LKT3	*54:01		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
11	9051	PITOUT	*44:03		-	-	-	+	-	-	-	-	-	-	-	-	-	-	-	-
12	9052	DBB	*57:01		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
13	9004	JESTHOM	*27:05		-	-	-	-	+	-	-	-	-	-	-	-	-	-	-	+
14	9071	OLGA	*15:01	*15:20	-	-	-	-	-	-	-	+	-	-	-	-	-	-	-	-
15	9075	DKB	*40:01		-	-	-	+	-	-	-	-	-	-	-	-	-	-	-	-
16	9037	SWEIG007	*40:02		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
17	9282	CTM3953540	*08:01	*55:01	+	+	-	-	-	-	-	-	+	-	-	-	-	-	-	-
18	9257	32367	*14:01	*56:01	-	-	-	+	+	-	-	-	-	-	-	-	-	-	-	-
19	9038	BM16	*18:01		-	-	-	-	-	-	-	-	-	-	-	-	-	-	+	-
20	9059	SLE005	*40:01		-	-	-	+	-	-	-	-	-	-	-	-	-	-	-	-
21	9064	AMALA	*15:01		-	-	-	-	-	-	-	+	-	-	-	-	-	-	-	-
22	9056	KOSE	*35:03		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
23	9124	IHL	*40:02	*56:02	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
24	9035	JBUSH	*38:01		-	-	-	-	+	-	-	-	-	-	-	-	-	-	-	-
25	9049	IBW9	*14:02		-	-	-	+	-	+	-	-	-	-	-	-	-	-	-	-
26	9285	WT49	*58:01		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
27	9191	CH1007	*07:05	*51:01	+	-	-	-	-	-	-	-	-	+	-	-	-	-	-	-
28	9320	BEL5GB	*44:02	*44:03	-	-	-	+	-	-	-	-	-	-	-	-	-	-	-	-
29	9050	MOU	*44:03		-	-	-	+	-	-	-	-	-	-	-	-	-	-	-	-
30	9021	RSH	*42:01		-	-	-	-	-	-	-	-	+	-	-	-	-	-	-	-
31	9019	DUCAF	*18:01		-	-	-	-	-	-	-	-	-	-	-	-	-	-	+	-
32	9297	HAG	*41:02		-	-	-	+	-	-	-	-	+	-	-	-	-	-	-	-
33	9098	MT14B	*40:01		-	-	-	+	-	-	-	-	-	-	-	-	-	-	-	-
34	9104	DHIF	*38:01		-	-	-	-	+	-	-	-	-	-	-	-	-	-	-	-
35	9302	SSTO	*44:02		-	-	-	+	-	-	-	-	-	-	-	-	-	-	-	-
36	9024	KT17	*15:01	*35:01	-	-	-	-	-	-	-	+	-	-	-	-	-	-	-	-
37	9065	HHKB	*07:02		+	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
38	9099	LZL	*15:01		-	-	-	-	-	-	-	+	-	-	-	-	-	-	-	-
39	9315	CML	*08:01	*27:05	-	+	-	-	+	-	-	-	+	-	-	-	-	-	-	+
40	9134	WHONP199	*13:02	*46:01	-	-	+	+	-	-	-	+	-	-	+	-	-	-	-	-
41	9055	H0301	*14:02		-	-	-	+	-	+	-	-	-	-	-	-	-	-	-	-
42	9066	TAB089	*46:01		-	-	-	-	-	-	-	+	-	-	-	-	-	-	-	-
43	9076	T7526	*46:01		-	-	-	-	-	-	-	+	-	-	-	-	-	-	-	-
44	9057	TEM	*38:01		-	-	-	-	+	-	-	-	-	-	-	-	-	-	-	-
45	9239	SHJO	*42:01	*50:01	-	-	-	+	-	-	-	-	+	-	-	-	-	-	-	-
46	9013	SCHU	*07:02		+	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
47	9045	TUBO	*51:01		-	-	-	-	-	-	-	-	-	+	-	-	-	-	-	-
48	9303	TER-ND	*35:01	*44:03	-	-	-	+	-	-	-	-	-	-	-	-	-	-	-	-

101.708-24– including *Taq* polymerase, IFU-01101.708-24u – without *Taq* polymerase, IFU-02Visit www.olerup-ssp.com for

“Instructions for Use” (IFU)

Lot No.: **46N**

Lot-specific information

CELL LINE VALIDATION SHEET																			
HLA-B low resolution SSP kit																			
					Well														
					Prod. No.:	201190017	201190018	201190019	201198120	201190021	201190022	201190023	201190024	201190025	201190027	201190028	201190029	201190031	201190032
	IHCW cell line		B*																
1	9001	SA	*07:02			-	-	-	+	-	-	-	+	-	-	+	-	-	-
2	9280	LK707	*52:01	*73:01		-	-	-	-	-	-	-	+	-	-	+	-	-	-
3	9011	E4181324	*52:01			-	-	-	-	-	-	-	-	-	-	-	-	-	-
4	9275	GU373	*15:10	*53:01		+	-	+	-	-	-	-	-	-	-	-	-	-	-
5	9009	KAS011	*37:01			+	-	-	+	-	-	-	-	-	-	-	+	-	-
6	9353	SM	*39:01	*51:01		-	-	-	-	+	-	+	+	-	-	-	-	-	-
7	9020	QBL	*18:01			-	+	-	-	-	-	-	-	-	-	-	-	-	-
8	9025	DEU	*35:01			+	+	-	-	-	-	-	-	-	-	-	-	-	-
9	9026	YAR	*38:01			-	-	-	-	-	+	+	-	-	-	-	-	-	-
10	9107	LKT3	*54:01			-	-	-	-	-	-	-	-	-	-	+	-	-	+
11	9051	PITOUT	*44:03			+	-	-	-	-	-	-	-	-	-	-	+	-	-
12	9052	DBB	*57:01			+	-	-	-	-	-	-	-	-	-	-	-	-	-
13	9004	JESTHOM	*27:05			-	-	-	-	-	-	-	-	-	-	+	-	-	+
14	9071	OLGA	*15:01	*15:20		+	-	+	-	-	-	-	-	-	-	-	-	-	-
15	9075	DKB	*40:01			-	-	-	-	-	-	-	+	+	-	-	-	-	-
16	9037	SWEIG007	*40:02			-	-	-	-	-	-	-	-	-	-	-	-	-	-
17	9282	CTM3953540	*08:01	*55:01		-	-	-	-	-	-	-	+	-	+	+	-	-	+
18	9257	32367	*14:01	*56:01		-	-	-	-	-	-	+	+	-	-	+	-	-	+
19	9038	BM16	*18:01			-	+	-	-	-	-	-	-	-	-	-	-	-	-
20	9059	SLE005	*40:01			-	-	-	-	-	-	-	+	+	-	-	-	-	-
21	9064	AMALA	*15:01			-	-	+	-	-	-	-	-	-	-	-	-	-	-
22	9056	KOSE	*35:03			+	+	-	-	-	-	-	-	-	-	-	-	-	-
23	9124	IHL	*40:02	*56:02		-	-	-	-	-	-	-	-	-	-	+	-	-	+
24	9035	JBUSH	*38:01			-	-	-	-	+	+	+	-	-	-	-	-	-	-
25	9049	IBW9	*14:02			-	-	-	-	-	-	+	+	-	-	-	-	-	-
26	9285	WT49	*58:01			+	-	-	-	-	-	-	-	-	-	-	-	-	-
27	9191	CH1007	*07:05	*51:01		-	-	-	-	-	-	-	+	-	-	+	-	-	-
28	9320	BEL5GB	*44:02	*44:03		+	-	-	-	-	-	-	-	-	-	-	+	-	-
29	9050	MOU	*44:03			+	-	-	-	-	-	-	-	-	-	-	+	-	-
30	9021	RSH	*42:01			-	-	-	-	-	-	-	+	-	+	+	-	-	-
31	9019	DUCAF	*18:01			-	+	-	-	-	-	-	-	-	-	-	-	-	-
32	9297	HAG	*41:02			-	-	-	-	-	-	-	+	-	+	-	-	-	-
33	9098	MT14B	*40:01			-	-	-	-	-	-	-	+	+	-	-	-	-	-
34	9104	DHIF	*38:01			-	-	-	-	+	+	+	-	-	-	-	-	-	-
35	9302	SSTO	*44:02			+	-	-	-	-	-	-	-	-	-	-	+	-	-
36	9024	KT17	*15:01	*35:01		+	+	+	-	-	-	-	-	-	-	-	-	-	-
37	9065	HHKB	*07:02			-	-	-	-	-	-	-	+	-	-	+	-	-	-
38	9099	LZL	*15:01			-	-	+	-	-	-	-	-	-	-	-	-	-	-
39	9315	CML	*08:01	*27:05		-	-	-	-	-	-	-	+	-	+	+	-	-	+
40	9134	WHONP199	*13:02	*46:01		-	-	-	-	-	-	-	-	-	-	+	-	+	-
41	9055	H0301	*14:02			-	-	-	-	-	-	+	+	-	-	-	-	-	-
42	9066	TAB089	*46:01			-	-	-	-	-	-	-	-	-	-	+	-	+	-
43	9076	T7526	*46:01			-	-	-	-	-	-	-	-	-	-	+	-	+	-
44	9057	TEM	*38:01			-	-	-	-	+	+	+	-	-	-	-	-	-	-
45	9239	SHJO	*42:01	*50:01		-	-	-	-	-	-	-	+	-	+	+	-	-	-
46	9013	SCHU	*07:02			-	-	-	-	-	-	-	+	-	-	+	-	-	-
47	9045	TUBO	*51:01			-	-	-	-	-	-	-	-	-	-	-	-	-	-
48	9303	TER-ND	*35:01	*44:03		+	+	-	-	-	-	-	-	-	-	-	+	-	-

101.708-24– including *Taq* polymerase, IFU-01101.708-24u – without *Taq* polymerase, IFU-02Visit www.olerup-ssp.com for

“Instructions for Use” (IFU)

Lot No.: **46N**

Lot-specific information

CELL LINE VALIDATION SHEET																			
HLA-B low resolution SSP kit																			
					Well														
						51	52	53	54	55	56	57	58	59	60	61	62	63	64
				Prod. No.:	201190033	201190034	201190035	201190036	201190037	201190038	201190039	201190040	201190041	201190042	201190044	201198145	201190046	201190047	
	IHWC cell line		B*																
1	9001	SA	*07:02		-	-	-	-	-	-	-	-	-	-	-	-	-	+	
2	9280	LK707	*52:01	*73:01	-	-	+	+	-	+	-	-	-	-	-	-	+	-	
3	9011	E4181324	*52:01		-	-	+	+	-	+	-	-	-	-	-	+	+	+	
4	9275	GU373	*15:10	*53:01	-	-	-	+	-	-	-	-	-	-	+	-	+	+	
5	9009	KAS011	*37:01		-	-	-	-	-	+	-	-	-	-	-	-	+	-	
6	9353	SM	*39:01	*51:01	-	-	+	+	-	-	-	-	-	-	+	-	+	+	
7	9020	QBL	*18:01		-	-	-	-	-	-	-	-	-	-	-	+	-	+	
8	9025	DEU	*35:01		-	-	-	-	-	-	-	-	-	-	+	-	-	+	
9	9026	YAR	*38:01		-	-	-	-	-	-	-	-	-	-	-	-	+	-	
10	9107	LKT3	*54:01		-	-	-	-	-	-	+	+	-	-	-	-	-	+	
11	9051	PITOUT	*44:03		-	-	-	-	-	+	-	-	-	-	-	-	+	-	
12	9052	DBB	*57:01		-	-	-	+	-	-	-	-	-	+	-	-	+	-	
13	9004	JESTHOM	*27:05		-	-	-	-	-	+	-	-	-	-	-	-	+	-	
14	9071	OLGA	*15:01	*15:20	-	-	-	-	-	+	-	-	-	-	-	+	-	+	
15	9075	DKB	*40:01		-	-	-	-	+	+	-	-	-	-	-	-	-	+	
16	9037	SWEIG007	*40:02		-	-	-	-	+	+	-	-	-	-	-	-	-	+	
17	9282	CTM3953540	*08:01	*55:01	-	-	+	-	-	-	-	+	-	-	-	-	-	+	
18	9257	32367	*14:01	*56:01	-	-	-	-	-	-	-	-	+	-	-	-	-	+	
19	9038	BM16	*18:01		-	-	-	-	-	-	-	-	-	-	+	-	-	+	
20	9059	SLE005	*40:01		-	-	-	-	+	+	-	-	-	-	-	-	-	+	
21	9064	AMALA	*15:01		-	-	-	-	-	+	-	-	-	-	-	-	+	+	
22	9056	KOSE	*35:03		-	-	-	-	-	-	-	-	-	-	+	-	-	+	
23	9124	IHL	*40:02	*56:02	-	-	-	-	+	+	-	-	+	-	-	-	-	+	
24	9035	JBUSH	*38:01		-	-	-	-	-	-	-	-	-	-	-	-	+	-	
25	9049	IBW9	*14:02		-	-	-	-	-	-	-	-	-	-	-	-	-	+	
26	9285	WT49	*58:01		-	-	-	+	-	-	-	-	-	-	-	-	+	-	
27	9191	CH1007	*07:05	*51:01	-	-	+	+	-	-	-	-	-	-	+	-	+	+	
28	9320	BEL5GB	*44:02	*44:03	-	-	-	-	-	+	+	-	-	-	-	-	+	-	
29	9050	MOU	*44:03		-	-	-	-	-	+	-	-	-	-	-	-	+	-	
30	9021	RSH	*42:01		-	-	-	-	-	-	-	-	-	-	-	-	-	+	
31	9019	DUCAF	*18:01		-	-	-	-	-	-	-	-	-	-	+	-	-	+	
32	9297	HAG	*41:02		-	-	-	-	+	+	-	-	-	-	-	-	-	+	
33	9098	MT14B	*40:01		-	-	-	-	+	+	-	-	-	-	-	-	-	+	
34	9104	DHIF	*38:01		-	-	-	-	-	-	-	-	-	-	-	-	+	-	
35	9302	SSTO	*44:02		-	-	-	-	-	+	+	-	-	-	-	-	+	-	
36	9024	KT17	*15:01	*35:01	-	-	-	-	-	+	-	-	-	-	+	+	-	+	
37	9065	HHKB	*07:02		-	-	-	-	-	-	-	-	-	-	-	-	-	+	
38	9099	LZL	*15:01		-	-	-	-	-	+	-	-	-	-	-	+	-	+	
39	9315	CML	*08:01	*27:05	-	-	-	-	-	+	-	-	-	-	-	-	+	+	
40	9134	WHONP199	*13:02	*46:01	-	-	-	-	-	+	-	-	-	-	-	+	+	+	
41	9055	H0301	*14:02		-	-	-	-	-	-	-	-	-	-	-	-	-	+	
42	9066	TAB089	*46:01		-	-	-	-	-	-	-	-	-	-	-	-	+	+	
43	9076	T7526	*46:01		-	-	-	-	-	-	-	-	-	-	-	-	+	+	
44	9057	TEM	*38:01		-	-	-	-	-	-	-	-	-	-	-	-	+	-	
45	9239	SHJO	*42:01	*50:01	-	-	+	-	+	+	-	-	+	-	-	-	-	+	
46	9013	SCHU	*07:02		-	-	-	-	-	-	-	-	-	-	-	-	-	+	
47	9045	TUBO	*51:01		-	-	+	+	-	-	-	-	-	-	+	-	+	-	
48	9303	TER-ND	*35:01	*44:03	-	-	-	-	-	+	-	-	-	-	+	-	+	+	

101.708-24– including *Taq* polymerase, IFU-01
 101.708-24u – without *Taq* polymerase, IFU-02

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 “Instructions for Use” (IFU)

Lot No.: **46N**

Lot-specific information

CELL LINE VALIDATION SHEET																				
DR low resolution primer set																				
					Well															
					65	66	67	68	69	70	71	72	73	74	75	76	77	78	79	80
				Prod. No.:	201191601	201191602	201191603	201194704	201191605	201191606	201191607	201191608	201298209	201191610	201191611	201298212	201191613	201191614	201193315	201191616
	IHCW cell line		DRB1																	
1	9001	SA	*01:01		+	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
2	9280	LK707	*15:02	*04:05	-	-	+	-	-	-	-	+	-	-	-	-	-	-	-	-
3	9011	E4181324	*15:02		-	-	+	-	-	-	-	-	-	-	-	-	-	-	-	-
4	9275	GU373	*03:01		-	-	-	-	+	+	-	-	-	-	-	-	-	-	-	-
5	9009	KAS011	*16:01		-	-	-	+	-	-	-	-	-	-	-	-	-	-	-	-
6	9353	SM	*04:07	*08:03	-	-	-	-	-	-	-	+	-	+	-	-	-	-	-	-
7	9020	QBL	*03:01		-	-	-	-	+	+	-	-	-	-	-	-	-	-	-	-
8	9025	DEU	*04:01		-	-	-	-	-	-	-	+	-	-	-	-	-	-	-	-
9	9026	YAR	*04:02		-	-	-	-	-	-	-	+	-	-	-	-	-	-	-	-
10	9107	LKT3	*04:05		-	-	-	-	-	-	-	+	-	-	-	-	-	-	-	-
11	9051	PITOUT	*07:01		-	-	-	-	-	-	-	-	+	-	-	-	-	-	-	-
12	9052	DBB	*07:01		-	-	-	-	-	-	-	-	+	-	-	-	-	-	-	-
13	9004	JESTHOM	*01:01		+	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
14	9071	OLGA	*08:02		-	-	-	-	-	-	-	-	-	+	-	-	-	-	-	+
15	9075	DKB	*09:01		-	-	-	-	-	-	-	-	-	-	+	-	-	-	-	-
16	9037	SWEIG007	*11:01		-	-	-	-	-	-	-	-	-	-	-	-	+	-	+	+
17	9282	CTM3953540	*03:01	*13:01	-	-	-	-	+	+	-	-	-	-	-	-	-	-	+	+
18	9257	32367	*09:01	*11:01	-	-	-	-	-	-	-	-	-	-	+	-	+	-	+	+
19	9038	BM16	*12:01		-	-	-	-	-	-	-	-	-	-	-	-	-	+	-	-
20	9059	SLE005	*13:02		-	-	-	-	-	+	-	-	-	-	-	-	-	-	+	+
21	9064	AMALA	*14:02		-	-	-	-	-	-	+	-	-	-	-	-	-	-	-	-
22	9056	KOSE	*13:02	*14:01	-	-	-	-	-	+	-	-	-	-	-	-	-	-	+	+
23	9124	IHL	*08:03	*14:14	-	-	-	-	-	-	-	-	-	+	-	-	-	-	-	-
24	9035	JBUSH	*11:01		-	-	-	-	-	-	-	-	-	-	-	-	+	-	+	+
25	9049	IBW9	*07:01		-	-	-	-	-	-	-	-	+	-	-	-	-	-	-	-
26	9285	WT49	*03:01		-	-	-	-	+	+	-	-	-	-	-	-	-	-	-	-
27	9191	CH1007	*04:05	*10:01	-	-	-	-	-	-	-	+	-	-	-	+	-	-	-	-
28	9320	BEL5GB	*04:16	*07:01	-	-	-	-	-	-	-	+	+	-	-	-	-	-	-	-
29	9050	MOU	*07:01		-	-	-	-	-	-	-	-	+	-	-	-	-	-	-	-
30	9021	RSH	*03:02		-	-	-	-	+	-	+	-	-	-	-	-	-	-	-	-
31	9019	DUCAF	*03:01		-	-	-	-	+	+	-	-	-	-	-	-	-	-	-	-
32	9297	HAG	*13:03		-	-	-	-	-	+	-	-	-	-	-	-	-	-	+	-
33	9098	MT14B	*04:04		-	-	-	-	-	-	-	+	-	-	-	-	-	-	-	-
34	9104	DHIF	*11:01		-	-	-	-	-	-	-	-	-	-	-	-	+	-	+	+
35	9302	SSTO	*04:03		-	-	-	-	-	-	-	+	-	-	-	-	-	-	-	-
36	9024	KT17	*04:03	*04:06	-	-	-	-	-	-	-	+	-	-	-	-	-	-	-	-
37	9065	HHKB	*13:01		-	-	-	-	-	+	-	-	-	-	-	-	-	-	+	+
38	9099	LZL	*14:02		-	-	-	-	-	-	+	-	-	-	-	-	-	-	-	-
39	9315	CML	*03:01	*04:01	-	-	-	-	+	+	-	+	-	-	-	-	-	-	-	-
40	9134	WHONP199	*07:01	*09:01	-	-	-	-	-	-	-	-	+	-	+	-	-	-	-	-
41	9055	H0301	*13:02		-	-	-	-	-	+	-	-	-	-	-	-	-	-	+	+
42	9066	TAB089	*08:03		-	-	-	-	-	-	-	-	-	+	-	-	-	-	-	-
43	9076	T7526	*09:01		-	-	-	-	-	-	-	-	-	-	+	-	-	-	-	-
44	9057	TEM	*14:01		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
45	9239	SHJO	*07:01		-	-	-	-	-	-	-	-	+	-	-	-	-	-	-	-
46	9013	SCHU	*15:01		-	-	+	-	-	-	-	-	-	-	-	-	-	-	-	-
47	9045	TUBO	*11:04	*12:01	-	-	-	-	-	-	-	-	-	-	-	-	+	+	+	+
48	9303	TER-ND	*01:03		-	+	-	-	-	-	-	-	-	-	-	-	-	-	-	-

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Lot-specific information

CELL LINE VALIDATION SHEET												
DR low resolution primer set												
					Prod. No.:	Well ¹						
						81	82	83	84	85	86	87
						201191617	201193318	201191619	201191620	201191629	201191630	201193331
	IHCW cell line		DRB1									
1	9001	SA	*01:01			-	-	-	-	-	-	-
2	9280	LK707	*15:02	*04:05		-	-	-	-	-	+	+
3	9011	E4181324	*15:02			-	-	-	-	-	-	+
4	9275	GU373	*03:01			+	-	-	-	+	-	-
5	9009	KAS011	*16:01			-	-	-	-	-	-	+
6	9353	SM	*04:07	*08:03		-	-	-	-	-	+	-
7	9020	QBL	*03:01			+	-	-	-	+	-	-
8	9025	DEU	*04:01			-	-	-	-	-	+	-
9	9026	YAR	*04:02			-	-	-	-	-	+	-
10	9107	LKT3	*04:05			-	-	-	-	-	+	-
11	9051	PITOUT	*07:01			-	-	-	-	-	+	-
12	9052	DBB	*07:01			-	+	-	-	-	+	-
13	9004	JESTHOM	*01:01			-	-	-	-	-	-	-
14	9071	OLGA	*08:02			-	-	-	-	-	-	-
15	9075	DKB	*09:01			-	-	+	-	-	+	-
16	9037	SWEIG007	*11:01			-	-	-	-	+	-	-
17	9282	CTM3953540	*03:01	*13:01		+	-	-	-	+	-	-
18	9257	32367	*09:01	*11:01		-	-	+	-	+	+	-
19	9038	BM16	*12:01			-	-	-	-	+	-	-
20	9059	SLE005	*13:02			+	-	-	-	+	-	-
21	9064	AMALA	*14:02			+	-	+	-	+	-	-
22	9056	KOSE	*13:02	*14:01		+	+	+	+	+	-	-
23	9124	IHL	*08:03	*14:14		+	-	+	+	+	-	-
24	9035	JBUSH	*11:01			-	-	-	-	+	-	-
25	9049	IBW9	*07:01			-	-	-	-	-	+	-
26	9285	WT49	*03:01			+	-	-	-	+	-	-
27	9191	CH1007	*04:05	*10:01		-	-	-	-	-	+	-
28	9320	BEL5GB	*04:16	*07:01		-	-	-	-	-	+	-
29	9050	MOU	*07:01			-	-	-	-	-	+	-
30	9021	RSH	*03:02			+	-	-	-	+	-	-
31	9019	DUCAF	*03:01			+	-	-	-	+	-	-
32	9297	HAG	*13:03			+	-	-	-	+	-	-
33	9098	MT14B	*04:04			-	-	-	-	-	+	-
34	9104	DHIF	*11:01			-	-	-	-	+	-	-
35	9302	SSTO	*04:03			-	-	-	-	-	+	-
36	9024	KT17	*04:03	*04:06		-	-	-	-	-	+	-
37	9065	HHKB	*13:01			+	-	-	-	+	-	-
38	9099	LZL	*14:02			+	-	+	-	+	-	-
39	9315	CML	*03:01	*04:01		+	-	-	-	+	+	-
40	9134	WHONP199	*07:01	*09:01		-	-	+	-	-	+	-
41	9055	H0301	*13:02			+	-	-	-	+	-	-
42	9066	TAB089	*08:03			-	-	-	-	-	-	-
43	9076	T7526	*09:01			-	-	+	-	-	+	-
44	9057	TEM	*14:01			-	+	+	+	+	-	-
45	9239	SHJO	*07:01			-	-	-	-	+	+	-
46	9013	SCHU	*15:01			-	-	-	-	-	-	+
47	9045	TUBO	*11:04	*12:01		-	-	-	-	+	-	-
48	9303	TER-ND	*01:03			-	-	-	-	-	-	-

¹The DRB4*01:03:01:02N allele is amplified by primer mix 82 in the DBB/9052 cell line.

101.708-24– including *Taq* polymerase, IFU-01
 101.708-24u – without *Taq* polymerase, IFU-02

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Lot No.: **46N**

Lot-specific information

CELL LINE VALIDATION SHEET												
DQ low resolution primer set												
					Well							
					88	89	90	91	92	93	94	95
				Production No.	201194801	201194802	201194803	201194804	201194805	201194806	201194807	201194808
	IHWC cell line		DQB1									
1	9001	SA	*05:01		+	-	-	-	-	-	-	-
2	9280	LK707	*06:01	*02:02	-	+	+	-	-	-	-	-
3	9011	E4181324	*06:01		-	+	-	-	-	-	-	-
4	9275	GU373	*02:01		-	-	+	-	-	-	-	-
5	9009	KAS011	*05:02		+	-	-	-	-	-	-	-
6	9353	SM	*03:02	*06:01	-	+	-	-	+	-	+	-
7	9020	QBL	*02:01		-	-	+	-	-	-	-	-
8	9025	DEU	*03:01		-	-	-	+	-	-	+	-
9	9026	YAR	*03:02		-	-	-	-	+	-	+	-
10	9107	LKT3	*04:01		-	-	-	-	-	-	-	+
11	9051	PITOUT	*02:02		-	-	+	-	-	-	-	-
12	9052	DBB	*03:03		-	-	-	-	-	+	+	-
13	9004	JESTHOM	*05:01		+	-	-	-	-	-	-	-
14	9071	OLGA	*04:02		-	-	-	-	-	-	-	+
15	9075	DKB	*03:03		-	-	-	-	-	+	+	-
16	9037	SWEIG007	*03:01		-	-	-	+	-	-	+	-
17	9282	CTM 3953540	*02:01	*06:03	-	+	+	-	-	-	-	-
18	9257	32367	*06:02	*02:02	-	+	+	-	-	-	-	-
19	9038	BM16	*03:01		-	-	-	+	-	-	+	-
20	9059	SLE005	*06:04		-	+	-	-	-	-	-	-
21	9064	AMALA	*03:01		-	-	-	+	-	-	+	-
22	9056	KOSE	*05:03	*06:04	+	+	-	-	-	-	-	-
23	9124	IHL	*05:03	*06:01	+	+	-	-	-	-	-	-
24	9035	JBUSH	*03:01		-	-	-	+	-	-	+	-
25	9049	IBW9	*02:02		-	-	+	-	-	-	-	-
26	9285	WT49	*02:01		-	-	+	-	-	-	-	-
27	9191	CH1007	*04:01	*05:01	+	-	-	-	-	-	-	+
28	9320	BEL5GB	*02:02	*03:01	-	-	+	+	-	-	+	-
29	9050	MOU	*02:02		-	-	+	-	-	-	-	-
30	9021	RSH	*04:02		-	-	-	-	-	-	-	+
31	9019	DUCAF	*02:01		-	-	+	-	-	-	-	-
32	9297	HAG	*03:01		-	-	-	+	-	-	+	-
33	9098	MT14B	*03:02		-	-	-	-	+	-	+	-
34	9104	DHIF	*03:01		-	-	-	+	-	-	+	-
35	9302	SSTO	*03:05		-	-	-	-	+	-	+	-
36	9024	KT17	*03:02		-	-	-	-	+	-	+	-
37	9065	HHKB	*06:03		-	+	-	-	-	-	-	-
38	9099	LZL	*03:01		-	-	-	+	-	-	+	-
39	9315	CML	*02:01	*03:01	-	-	+	+	-	-	+	-
40	9134	WHONP199	*02:02	*03:03	-	-	+	-	-	+	+	-
41	9055	H0301	*06:09		-	+	-	-	-	-	-	-
42	9066	TAB089	*06:01		-	+	-	-	-	-	-	-
43	9076	T7526	*03:03		-	-	-	-	-	+	+	-
44	9057	TEM	*05:03		+	-	-	-	-	-	-	-
45	9239	SHJO	*02:02		-	-	+	-	-	-	-	-
46	9013	SCHU	*06:02		-	+	-	-	-	-	-	-
47	9045	TUBO	*03:01		-	-	-	+	+	-	+	-
48	9303	TER-ND	*05:01		+	-	-	-	-	-	-	-

101.708-24– including *Taq* polymerase, IFU-01
 101.708-24u – without *Taq* polymerase, IFU-02

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Lot No.: **46N**

Lot-specific information

CERTIFICATE OF ANALYSIS

Olerup SSP® HLA-A-B-DR-DQ SSP Combi Tray

Product number: 101.708-24 – including *Taq* pol.
 101.708-24u – without *Taq* pol.
 Lot number: 46N
 Expiry date: 2014-August-01
 Number of tests: 24 tests
 Number of wells per test: 95 +1

Well specifications:

Well No.	Production No.	Well No.	Production No.	Well No.	Production No.
1	2011-931-01	9	2011-918-10	17	2011-918-18
2	2011-918-02	10	2011-918-11	18	2011-940-19
3	2011-931-03	11	2011-918-12	19	2011-918-20
4	2011-918-04	12	2011-918-13	20	2011-918-21
5	2011-918-06	13	2011-918-14	21	2011-918-23
6	2011-918-07	14	2011-931-15		
7	2011-918-08	15	2011-918-16		
8	2011-918-09	16	2011-918-17		

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

Additional 5'- and/or 3'-primers in primer solutions 1, 3 to 7, 9, 11 and 13 to 21 were tested by separately adding additional 3'-primers or 5'-primers. One or two primers in primer solutions 2, 3, 7, 8, 9, 10, 14, 17 and 18 were not possible to test.

Well No.	Production No.	Well No.	Production No.	Well No.	Production No.
22	2011-886-48	38	2011-900-18	54	2011-900-36
23	2011-900-02	39	2011-900-19	55	2011-900-37
24	2011-900-03	40	2012-981-20	56	2011-900-38
25	2011-900-04	41	2011-900-21	57	2011-900-39
26	2011-900-05	42	2011-900-22	58	2011-900-40
27	2011-900-06	43	2011-900-23	59	2011-900-41
28	2011-900-07	44	2011-900-24	60	2011-900-42
29	2011-900-08	45	2011-900-25	61	2011-900-44
30	2011-900-09	46	2011-900-27	62	2012-981-45
31	2011-900-10	47	2011-900-28	63	2011-900-46
32	2011-900-11	48	2011-900-29	64	2011-900-47
33	2011-900-13	49	2011-900-31		
34	2011-900-14	50	2011-900-32		
35	2011-900-15	51	2011-900-33		
36	2011-900-16	52	2011-900-34		
37	2011-900-17	53	2011-900-35		

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

Additional 5'-primers and/or 3'-primers in primer solutions 22 to 24, 27, 33 to 35, 39, 41, 45, 48, 49, 53 and 58 were tested by separately adding additional 3'-primers or 5'-primers. One or two primers in primer solutions 49, 56 and 60 were not possible to test.

101.708-24– including *Taq* polymerase, IFU-01
 101.708-24u – without *Taq* polymerase, IFU-02

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Lot No.: **46N**

Lot-specific information

Well No.	Production No.	Well No.	Production No.	Well No.	Production No.
65	2011-916-01	73	2011-982-09	81	2011-916-17
66	2011-916-02	74	2011-916-10	82	2011-933-18
67	2011-916-03	75	2011-916-11	83	2011-916-19
68	2011-947-04	76	2011-982-12	84	2011-916-20
69	2011-916-05	77	2011-916-13	85	2011-916-29
70	2011-916-06	78	2011-916-14	86	2011-916-30
71	2011-916-07	79	2011-933-15	87	2011-933-31
72	2011-916-08	80	2011-916-16		

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

Additional 5'-primers and/or 3'-primers in primer solutions 65, 67, 68, 70, 73 to 76, 79, 80, 82 and 84 were tested by separately adding additional 3'-primers, respectively additional 5'-primers.

One, two or three of the primers in primer solutions 65, 67, 68, 72 to 74, 77, 79, 80 and 86 were not possible to test.

Well No.	Production No.
88	2011-948-01
89	2011-948-02
90	2011-948-03
91	2011-948-04
92	2011-948-05
93	2011-948-06
94	2011-948-07
95	2011-948-08

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

One additional 5'-primer in primer solutions 89 and 95 were tested by separately adding one additional 3'-primer.

The negative control primer pairs, **Production No. 2011-928-01**, can detect contamination with PCR products diluted 10^{-7} .

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

Date of approval: 2012-June-14

Approved by

Production Quality Control

101.708-24– including *Taq* polymerase, IFU-01
101.708-24u – without *Taq* polymerase, IFU-02

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“Instructions for Use” (IFU)

Lot No.: **46N**

Lot-specific information

Declaration of Conformity

Product name: *Olerup* SSP® HLA-A-B-DR-DQ SSP Combi Tray
Product number: 101.708-24/24u
Lot number: 46N

Intended use: HLA-A, HLA-B, HLA-DR and HLA-DQ low resolution histo-
compatibility testing

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

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

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

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.)

Stockholm, Sweden
2012-June-14

Ann-Cathrin Jareman
Head of QA and Regulatory Affairs

101.708-24– including *Taq* polymerase, IFU-01
101.708-24u – without *Taq* polymerase, IFU-02

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Lot No.: **46N**

Lot-specific information

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