Lot No.: 13V **Lot-specific information**

Olerup SSP® DQ-DR SSP Combi Tray

Product number:	**101.704-48/12 – including *Taq* pol.** **101.704-48u/12u – without *Taq* pol.**
Lot number:	**13V**
Expiry date:	**2016-May-01**
Number of tests:	**48 tests – Product No. 101.704-48/48u** **12 tests – Product No. 101.704-12/12u**
Number of wells per test:	**31 + 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. 13V.

Complete product documentation consists of generic Instructions for Use (IFU), lot specific Product Insert, Worksheet and Certificate.

CHANGES COMPARED TO THE PREVIOUS *OLERUP* SSP® DQ-DR SSP COMBI TRAY LOT (57R)

The format of the Product Insert and Worksheet have been changed.

The DQ low resolution specificity and interpretation tables have been updated for the HLA-DQB1 alleles described since the previous *Olerup* SSP® DQ-DR Combi Tray lot was made **(Lot No. 57R)**.

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

Well	5'-primer	3'-primer	rationale
1	Added	Added	5'-primer added for the DQB1*05:21 allele, 3'-primers added for the DQB1*05:03:10 and DQB1*05:34 alleles
2	Added	Added	Primer pair added for the DQB1*06:04:06 and 06:67 alleles, exchanged control primer pair.
3	Added	-	5'-primer added for the DQB1*02:25 allele.
4	-	Added	3'-primer added for the DQB1*03:01:08 allele, Strength of control band has been optimized.
5	-	-	Strength of control band has been optimized
6	-	-	Strength of control band has been optimized
7	Exchanged	Added	5'-primers exchanged, 3'-primer added for the DQB1*04:09 and DQB1*03:01:08 alleles, Strength of control band has been optimized.
8	-	-	Strength of control band has been optimized.

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The DR low resolution specificity and interpretation tables have been updated for the HLA-DRB1 alleles described since the previous *Olerup* SSP® DQ-DR Combi Tray lot was made **(Lot No. 57R)**.

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

Well	5'-primer	3'-primer	rationale
9	-	Added	3'-primer added for the DRB1*01:55 allele.
17	-	Added	3'-primer added for the DRB1*07:25 allele
25	Added	Added	Primer pair added for the DRB1*14:141
28	Added	-	5'-primer added for the DRB1*08:53 allele.

Change in revision R01 compared to R00:

1. Primer mix 12 may have a tendency of unspecific amplification. A fot note has been added in the Specificity Table.

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101. 704-48u/12u – without *Taq* pol., IFU-02

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Well **32** 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 an amplicon generated by a control primer pair.

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'-primer[1]	164	340	440	45	45	43
	5'-CAC3'	5'-Agg3'	5'-TTA3'	5'-Tg g3'	5'-Tg g3'	5'-Tg g3'
3'-primer[2]	231	2nd I	507	59	58	57
	5'-TgC3'	5'-AAA3'	5'-TTg3'	5'-CTC3'	5'-ggC3'	5'-CTC3'
A*	+	+	+			
B*	+	+	+			
C*	+	+	+			
DRB1				+	+	
DRB3				+	+	
DRB5				+		
DQB1					+	
DPB1						+

[1]The 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 codonnumbering as on the www.ebi.ac.uk/imgt/hla web site. The sequence of the 3 terminal nucleotides of the primer is given.
[2]The 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

DQ-DR SSP Combi Tray

CONTENT

The primer set contains 5'- and 3'-primers for grouping the DQB1 alleles in to the serological groups DQ2 to DQ9.
The primer set contains 5'- and 3'-primers for grouping the DRB1*01:01 to DRB1*10:06 alleles into the corresponding serological groups DR1 to DR18 as well as primer pairs for recognizing the DRB3, DRB4 and DRB5 groups of alleles.

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 32 PCR reactions in a 32 well cut PCR plate.

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

Wells 1 to 8 – DQ low resolution primers.
Wells 9 to 31 – DR low resolution primers.
Well 32 – Negative Control (NC).
The 32 well cut PCR plate is marked with 'DQ-DR'.
Well No. 1 is marked with the Lot No. '13V' in silver/gray ink.
A faint row of numbers is seen between wells 1 and 2 or wells 7 and 8 of the PCR trays. These stem from the manufacture of the trays, and should be disregarded.
The PCR plates are covered with a PCR-compatible foil.
Please note: When removing each 32 well PCR plate, make sure that the remaining plates stay covered. Use a scalpel or a similar instrument to carefully cut the foil between the plates.

INTERPRETATION

Only the DQB1 alleles will be amplified by the 8 wells of the DQ low resolution primer set, **wells 1 to 8**. Thus, the interpretation of DQ low resolution typings is not influenced the DQB2 and DQB3 genes.
Only HLA-DRB alleles will be amplified by the 23 wells of the DR low resolution primer set, **wells 9 to 31**. Thus, the interpretation of DR low resolution typings is not influenced by other HLA class II genes.

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UNIQUELY IDENTIFIED ALLELES

All the DQB1 alleles, i.e. **DQB1*05:01 to 05:43, DQB1*06:01 to 06:105, DQB1*02:01 to 02:33, DQB1*03:01 to 03:89 and DQB1*04:01 to 04:17**, recognized by the HLA Nomenclature Committee in July 2013[1,2] will be amplified by the primers in the DQ low resolution SSP primer set, **wells 1 to 8**. The DQB1 alleles will be grouped into their corresponding serological specificities[3], 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

[1]DQB1 alleles listed on the IMGT/HLA web page 2013-July-25, release 3.13.1, www.ebi.ac.uk/imgt/hla.
[2]Alleles that have been deleted from or renamed in the official WHO HLA Nomenclature up to and including the last IMGT/HLA database release can be retrieved from web page http://hla.alleles.org/alleles/deleted.html.
[3]The serological split of the DQB1*05:05 to 05:43 alleles, the DQB1*06:06 to 06:07, 06:10, 06:13, 06:15-06:24 and 06:27 to 06:105 alleles, the DQB1*02:04-02:33 alleles, the DQB1*03:07-03:09 and 03:11- 03:89 alleles and the DQB1:04:0301-04:17 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.

All the HLA-DRB1, -DRB3, -DRB4[1] and –DRB5 alleles, i.e. **DRB1*01:01 to 10:06, DRB3*01:01 to DRB3*03:03, DRB4*01:01 to DRB4*01:08 and DRB5*01:01 to DRB5*02:06**, recognized by the HLA Nomenclature Committee in July 2013[2,3] will be amplified by the primers in the DR low resolution SSP kit. The HLA-DRB alleles will be grouped into their corresponding serological specificities[4,5].

[1]The DRB4*02:01N and DRB4*03:01N null alleles will not be amplified by the DR low resolution primer set.
[2]DRB alleles listed on the IMGT/HLA web page 2013-July-25, release 3.13.1, www.ebi.ac.uk/imgt/hla.
[3]Alleles that have been deleted from or renamed in the official WHO HLA Nomenclature up to and including the last IMGT/HLA database release can be retrieved from web page http://hla.alleles.org/alleles/deleted.html.
[4]The serological split of all DRB1 alleles is not known. In this table we use the expert-assigned serological grouping in Tissue Antigens (2009) 73:95-170 and the serological grouping of the sequence-defined allele.
[5]The DRB1*08:20 and the DRB1*13:18, 13:47 13:55, 13:158 and 13:164 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, 13:119, 13:154 and 13:156 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.

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SPECIFICITY TABLE

DQ low resolution primer set

Specificities and sizes of the PCR products of the 8 primer mixes of the DQ low resolution primer set

Primer Mix	Size of spec. PCR product[1]	Size of control band[2]	DQ serology[3]	Amplified DQB1 alleles[4]
1	225 bp	**515 bp**	5	*05:01:01:01-05:43
2	220 bp, 275 bp	**515 bp**	1, 5, 6, null	*06:01:01-06:105
3	210 bp	430 bp	2	*02:01:01-02:33
4[6]	220 bp	**515 bp**	3, 7	*03:01:01:01-03:01:20, 03:04, 03:09-03:10, 03:13-03:14:02, 03:16, 03:19, 03:21-03:22, 03:24, 03:27-03:29, 03:35-03:36, 03:42, 03:44, 03:46-03:60, 03:69, 03:71, 03:75-03:77, 03:80, 03:82-03:84N
5[6]	130 bp	**515 bp**	6, 8	*03:02:01-03:02:09, 03:05:01-03:05:04, 03:07-03:08, 03:11, 03:18, 03:32, 03:37, 03:45, 03:61, 03:63-03:64, 03:66N-03:68, 03:70, 03:85, 06:29
6[6,7]	135 bp	**515 bp**	2, 3, 4, 9	*02:03, 03:03:02:01-03:03:07, 03:06, 03:12, 03:15, 03:20, 03:25-03:26, 03:30-03:31, 03:33-03:34, 03:38-03:41, 03:43, 03:65, 03:74, 03:79, 03:86-03:89, 04:03:01-04:03:02, 06:51, 06:66, 06:96
7[5,7,9]	85 bp, 185 bp	**515 bp**	3, 7, 8, 9	*03:01:01:01-03:72, 03:74-03:89, 04:01:03
8[6,8]	160 bp	430 bp	4	*04:01:01-04:01:02, 04:01:04-04:17

[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 subtypings.
When the primers in a primer mix can give rise to HLA-specific PCR products of more than one length this is indicated if the size difference is more than 20 base pairs. Size differences of 20 base pairs or less are not given. For high resolution SSP kits, the alleles listed are specified according to amplicon length.
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.

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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 inherit 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 internal positive control bands are 430 or 515 base pairs respectively, well distribution as outlined in the table. Well number 1 contains the longer, 515 bp, internal positive control band. The well distribution of the internal controls can help in orientation of the kit on gel photo, as well as allow for kit identification. In the presence of a specific amplification the intensity of the control band often decreases. In the presence of a specific amplification the intensity of the control band often decreases.

[3]The serological reactivity of all DQ alleles is not known. In this table we use the expert-assigned serological grouping in Tissue Antigens (2009) 73:95-170 and the serological grouping of the sequence-defined allele. The DQB1*03:10 allele has been assigned type DQ7 by NMDP.

[4]For several DQB1 alleles 1st and/or 3rd exon(s) and beyond, as well as intron nucleotide sequences, are not 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. Assumption is made that unknown sequences in these regions are conserved within allelic groups.

[5]The primer pair in well 7 will in some samples give rise to two HLA-specific PCR fragments and may give rise to a lower yield of HLA-specific PCR product than the other DQ low primer mixes.

[6]Primer mixes 4 to 6 and 8 may give rise to a lower yield of HLA-specific PCR product than the other DQ low primer mixes.

[7]Primer mix 6 and 7 may have a tendency to giving rise to primer oligomer formation.

[8]In primer mix 8 the positive control band may be weaker than for other DQ low primer mixes.

[9]Specific PCR products shorter than 125 base pairs have a lower intensity and are less sharp than longer PCR products.

'w', may be weakly amplified.

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SPECIFICITY TABLE

DR low resolution primer set

Specificities and sizes of the PCR products of the 23+1 primer mixes of the DR low resolution primer set

Primer Mix	Size of spec. PCR product[1]	Size of control band[2]	DR serology[3]	Amplified HLA-DRB alleles[4]
9[6,8]	205 bp, 235 bp, 260 bp	**515 bp**	1	*01:01:01-01:02:08, 01:04-01:38, 01:40N-01:59
10	200 bp	430 bp	103	*01:03, 01:39N, 01:42
11[6]	210 bp	430 bp	2, 15	*15:01:01:01-15:98
12[11]	210 bp	430 bp	16	*16:01:01-16:05:02, 16:07-16:24
13[5,6,7]	120 bp, 220 bp	430 bp	3, 17, 18, 11	*03:01:01:01-03:75, 03:77-03:84, 03:86-03:93, 11:07, 11:53, 11:103, 11:105, 11:107, 11:125, 15:25
14[5,6,7]	80 bp, 210 bp	430 bp	3, 6, 17, 11, 13, 14	*03:01:01:01-03:01:22, 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, 03:75-03:84, 03:86, 03:89, 03:91-03:93, 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, 11:122, 11:124, 11:127, 11:131-11:132, 11:135, 11:138-11:139, 11:142, 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, 13:137N-13:145, 13:147-13:149, 13:151-13:153, 13:155, 13:159, 13:162, 14:16, 14:19, 14:21, 14:82, 14:95, 14:109, 14:132, 14:137N
15[5,6]	85 bp, 210 bp	430 bp	3, 6, 11, 13, 14, 1403, 18	*03:02:01-03:03, 03:27, 03:29, 03:38, 03:53, 03:74, 03:88, 03:90, 11:13:01[W]-11:13:02[W], 11:26, 11:34, 13:15, 13:19, 13:26:01-13:26:02, 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, 14:135
16[5,6,8]	100 bp, 175 bp	430 bp	4	*04:01:01-04:05:11, 04:05:13-04:163
17[6]	210 bp, 235 bp	430 bp	7, 13, 14	*07:01:01:01-07:01:07, 07:03-07:26N, 12:22, 13:17, 13:116, 14:50

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18[6]	170 bp, 215 bp, 250 bp	**515 bp**	8, 12, 14	*08:01:01-08:19, 08:21-08:54, 11:67, 12:04, 12:16:01-12:16:02, 12:22, 12:39, 14:11, 14:15, 14:68, 14:93
19[5,6]	90 bp, 135 bp, 180 bp	430 bp	3, 9, 11	*03:08, 03:65, 09:01:02-09:20, 11:07, 11:53, 11:103, 11:105, 11:107, 11:125
20	175 bp	430 bp	10, 11, 13	*03:76, 10:01:01-10:06, 11:59, 11:80, 11:83, 11:87, 11:135, 11:142, 13:27, 13:41, 13:71, 13:129
21[5,6]	100 bp, 170 bp	430 bp	3, 8, 11, 14	*03:08, 03:65, 08:31, 08:41, 11:01:01-11:70, 11:72-11:147
22[5,6]	85 bp, 105 bp	430 bp	12	*08:32, 08:53, 12:01:01-12:40
23[8]	215 bp	430 bp	6, 8, 11, 13, 14, 1403	*03:76, 08:20-08:21, 11:01:01-11:04:11, 11:06:01-11:06:03, 11:08:01-11:12:02, 11:14:01-11:16, 11:18-11:21, 11:23:01-11:25, 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, 11:108-11:124, 11:126-11:135, 11:137-11:142, 11:144-11:147, 13:01:01-13:02:01, 13:02:03-13:08, 13:10-13:16, 13:18-13:43, 13:45-13:85, 13:87-13:115, 13:117-13:128, 13:130-13:145, 13:147-13:164, 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, 14:128, 14:135, 14:137N, **DRB3*02:27**
24[6,8]	195 bp, 225 bp	430 bp	6, 8, 11, 12, 13, 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, 08:50, 08:52, 08:54, 11:01:01-11:01:17, 11:02:01-11:06:03, 11:09-11:12:02, 11:14:01-11:16, 11:20-11:21, 11:23:01-11:25, 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, 11:120-11:124, 11:126-11:129, 11:133-11:135, 11:137-11:142, 11:144-11:147, 12:02:01-12:02:05, 12:13, 12:15-12:16:02, 12:18-12:21, 12:23, 12:26-12:27, 12:31N-12:33, 12:37, 13:01:01-13:02:01, 13:02:03-13:02:08, 13:04-13:05:02, 13:07:01-13:09, 13:11:01-13:11:02, 13:14:01-13:24, 13:26:01-13:29, 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, 13:135-13:136, 13:138-13:150, 13:153, 13:155, 13:158-13:160, 13:162, 13:164, 14:15-14:16, 14:22, 14:24-14:25, 14:27, 14:37, 14:53, 14:73, 14:105, 14:128
25[7]	175 bp, 240 bp	430 bp	3, 6, 11, 13, 14, 1403, 17, 18	*03:01:01:01-03:01:05, 03:01:07-03:01:08, 03:01:10-03:07, 03:09, 03:11:01-03:41, 03:43-03:45, 03:47-03:63, 03:66-03:68N, 03:70-03:84, 03:86, 03:88-03:91, 03:93, 08:20, 11:13:01-11:13:02, 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, 13:123-13:158, 13:161-13:164, 14:01:01-14:07:02, 14:08[?], 14:09-14:14, 14:15[?]-14:16[?], 14:17-14:21, 14:22[?], 14:23:01, 14:23:02[?], 14:23:03-14:24, 14:25[?]-14:26[?], 14:27, 14:28[?], 14:29-14:30, 14:31[?]-14:32:03[?], 14:33, 14:34[?]-14:35[?], 14:36-14:37, 14:38[?]-14:39[?], 14:40-14:45,

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				14:47-14:48, 14:49[?]-14:50[?], 14:51, 14:52[?]-14:53[?], 14:54:01-14:54:02, 14:55[?], 14:56-14:57, 14:58[?], 14:59, 14:60[?]-14:62[?], 14:63-14:65, 14:67, 14:68[?]-14:76[?], 14:77-14:78, 14:79[?], 14:80-14:85, 14:86[?]-14:88[?], 14:89, 14:90[?], 14:91, 14:92N[?]-14:93[?], 14:94-14:96, 14:97[?], 14:98, 14:99[?], 14:100, 14:101[?], 14:102-14:103, 14:104[?]-14:105[?], 14:106, 14:107[?], 14:108-14:109, 14:110[?]-14:114[?], 14:115-14:116, 14:117[?]-14:120[?], 14:121, 14:122[?], 14:123, 14:124[?]-14:126[?], 14:127:01-14:127:02, 14:128[?]-14:133[?], 14:134-14:137N, 14:138[?]-14:140[?], 14:141, 14:142[?]
26[5,6]	100 bp, 140 bp, 155 bp	430 bp	4, 6, 8,13, 14, 1404	*04:62, 04:69, 04:73, 04:105:01-04:105:02, 04:122, 04:146, 08:08, 11:69, 11:82, 13:45, 14:01:01-14:01:02, 14:01:04, 14:04, 14:07:01-14:07:02, 14:10, 14:16, 14:22, 14:25-14:26, 14:28, 14:31-14:32:03, 14:35, 14:37-14:39, 14:49-14:50, 14:53-14:54:01, 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, 14:124-14:125, 14:128-14:129, 14:131, 14:137N-14:140, 14:142, **DRB4*01:03:01:02N**
27[5,6,9]	110 bp, 140 bp, 170 bp	430 bp	3, 4, 6, 9, 11, 13,14,1404	*03:10, 09:01:02-09:01:05, 09:01:07-09:02:02, 09:04-09:20, 11:13:01-11:13:02, 11:17, 11:52, 13:43, 13:159, 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], 14:22-14:23:04, 14:26, 14:28-14:36, 14:38-14:39, 14:41, 14:43-14:52, 14:54:01-14:57, 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, 14:117-14:127:02, 14:129-14:134, 14:137N-14:140, 14:142, 15:27, 15:34, 15:66
28[5,6,8]	110 bp, 150 bp, 180 bp, 220 bp	430 bp	2, 3, 4, 6, 8, 11,13, 14, 1403, 1404, 16	*03:10, 08:09, 08:20-08:21, 08:32, 08:35, 08:36:02, 08:53, 11:13:01-11:13:02, 11:17, 11:23:01-11:23:02, 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, 13:144, 13:146, 13:154, 13:156, 13:158-13:159, 13:164, 14:01:01-14:01:04, 14:03:01-14:05:04, 14:07:01-14:08, 14:10-14:12:02, 14:14-14:16, 14:18, 14:22-14:23:04, 14:25-14:28, 14:31-14:32:03, 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, 14:122-14:140, 14:142, 15:21[W], 16:04[W], 16:18[W]
29[6,7]	160 bp, 240 bp	430 bp	52	*14:141, **DRB3*01:01:02:01-01:15, DRB3*02:01-02:29N, DRB3*03:01:01-03:03**
30[8,10]	215 bp	430 bp	53	**DRB4*01:01:01:01-01:08**
31	175 bp	430 bp	51	**DRB5*01:01:01-01:14, DRB5*02:02-02:06**
32[12]	-	-		**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 DR low resolution SSP subtypings.
When the primers in a primer mix can give rise to HLA-specific PCR products of more than one length this is indicated if the size difference is more than 20 base pairs. Size differences of 20 base pairs or less are not given. For high resolution SSP kits, the alleles listed are specified according to amplicon length.

Lot No.: 13V **Lot-specific information**

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 11, 26, 27 and 28.

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 inherit 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 internal positive control bands are 430 or 515 base pairs respectively, well distribution as outlined in the table. Well number 1 contains the longer, 515 bp, internal positive control band. The well distribution of the internal controls can help in orientation of the kit on gel photo, as well as allow for kit identification. In the presence of a specific amplification the intensity of the control band often decreases. In the presence of a specific amplification the intensity of the control band often decreases.

[3]The serological split of all DRB1 alleles is not known. In this table we use the expert-assigned serological grouping in Tissue Antigens (2009) 73:95-170 and the serological grouping of the sequence-defined allele.

[4]For several DRB1 alleles 1st and/or 3rd exon(s) and beyond, as well as intron nucleotide sequences, are not 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. Assumption is made that unknown sequences in these regions are conserved within allelic groups.

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

[6]Individual alleles can give to rise to two differently sized specific PCR fragments in primer mixes 9, 11, 13 to 19, 21, 22, 24 and 26 to 29.

[7]Due to sharing of sequence motifs in codon 38, DRB3*01:14 will also be amplified in primer mixes 13, 14 and 25 in addition to primer mix 29.

[8]Primer mixes 9, 16, 23, 24, 28 and 30 may have a tendency to giving rise to primer oligomer formation.

[9]Primer mix 27 has a tendency of giving rise to primer oligomer formation and also has an intense primer cloud due to the high number of primers present in the primer mix.

[10]The DRB4*01:03:01:02N allele is amplified by primer mix 30, whereas the DRB4*02:01N and DRB4*03:01N null alleles are not amplified by this primer pair.

[11]Primer mix 12 may have a tendency of unspecific amplification.

[12]Primer mix 32 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.

'w', might be weakly amplified.

101.704-48/12 – including *Taq* pol., IFU-01
101. 704-48u/12u – without *Taq* pol., IFU-02

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Lot No.: 13V **Lot-specific information**

DQ LOW PRIMER SPECIFICATION

Well No.	1	2	3	4	5	6	7	8
Length of spec.	225	220	210	220	130	135	85	160
PCR product		275					185	
Length of int. pos. control[1]	515	515	430	515	515	515	515	430
5'-primer(s)[2]	25(170)	9(122)	29(184)	26(173)	28(179)	26(173)	38(210)	38(210)
	5' -gCA 3'	5' -gTT 3'	5' -gAg 3'	5' -TTA 3'	5' -gAC 3'	5' -TCT 3'	5' -gCA 3'	5' -gCg 3'
	26(173)	24(169)	30(185)		28(179)		71(309)	
	5' -ggg 3'	5' -TgT 3'	5' -AAg 3'		5' -gAC 3'		5' -ACC 3'	
		26(173)					71(309)	
		5' -TTA 3'					5' -ACC 3'	
		26(173)						
		5' -TCT 3'						
3'-primer(s)[3]	87(356)	86(353)	86(353)	86(353)	57(266)	57(266)	86(353)	77(327)
	5' -ggT 3'	5' -ACg 3'	5' -gCT 3'	5' -gCT 3'	5' -Cgg 3'	5' -CgT 3'	5' -gCT 3'	5' -ACg 3'
	87(356)	86(353)		86(354)			86(354)	
	5' -ggT 3'	5' -ACC 3'		5' -AgT 3'			5' -AgT 3'	
	88(361)	86(354)						
	5' -CCT 3'	5' -TAT 3'						
Well No.	1	2	3	4	5	6	7	8

[1]The internal positive control primer pairs amplify segments of the human growth hormone gene. The internal positive control bands are 430 or 515 base pairs respectively, well distribution as outlined in the table. Well number 1 contains the longer, 515 bp, internal positive control band. The well distribution of the internal controls can help in orientation of the kit on gel photo, as well as allow for kit identification. In the presence of a specific amplification the intensity of the control band often decreases.

[2]The nucleotide position 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.

[3]The nucleotide position 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.

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101. 704-48u/12u – without *Taq* pol., IFU-02

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Lot No.: 13V **Lot-specific information**

DR LOW PRIMER SPECIFICATION

Well No.	9	10	11	12	13	14	15	16	17	18	19	20
Length of spec.	205	200	210	210	120	80	85	100	210	170	90	175
PCR product	235				220	210	210	175	235	215	135	
	260									250	180	
Length of int. pos. control[1]	515	430	430	430	430	430	430	430	430	515	430	430
5'-primer(s)[2]	12(124)	14(129)	13(126)	13(126)	13(125)	13(125)	13(125)	13(125)	13(127)	15(133)	26(165)	26(164)
	5' -A.T 3'	5' -gAA 3'	5' -Agg 3'	5' -Agg 3'	5' -gTC 3'	5' -gTC 3'	5' -gTC 3'	5' -ACA 3'	5' -ATA 3'	5' -gTT 3'	5' -TAT 3'	5' -gTA 3'
	14(129)		13(126)	13(126)	47(227)	15(133)		13(125)	13(127)	15(133)	58(261)	30(178)
	5' -gAA 3'		5' -AAg 3'	5' -AAg 3'	5' -gTT 3'	5' -gTT 3'		5' -ACC 3'	5' -ATA 3'	5' -gTT 3'	5' -gAg 3'	5' -gCg 3'
								13(125)	13(127)			
								5' -ATA 3'	5' -gTA 3'			
								13(125)	15(133)			
								5' -gTC 3'	5' -gTT 3'			
3'-primer(s)[3]	66(286)	66(286)	66(286)	66(286)	73(305)	26(164)	28(171)	32(184)	70(298)	58(260)	57(257)	73(307)
	5' -gAg 3'	5' -gAT 3'	5' -gAT 3'	5' -gAA 3'	5' -ggC 3'	5' -ggT 3'	5' -CTC 3'	5' -gTg 3'	5' -CTC 3'	5' -CCT 3'	5' -CgA 3'	5' -CgC 3'
	66(286)		69(295)	66(286)	73(305)	71(299)	69(295)	58(260)	73(305)	73(307)	73(305)	
	5' -gAg 3'		5' -CTg 3'	5' -gAg 3'	5' -ggC 3'	5' -gCT 3'	5' -CTg 3'	5' -Cgg 3'	5' -ggC 3'	5' -CAg 3'	5' -ggC 3'	
	66(286)		69(295)	70(297)	74(308)				77(317)	86(344)	77(319)	
	5' -gAT 3'		5' -.Tg 3'	5' -CTg 3'	5' -CCC 3'				5' -AAT 3'	5' -CAC 3'	5' -CAC 3'	
	70(297)		70(298)	71(301)					77(319)			
	5' -CTg 3'		5' -CgC 3'	5' -ggC 3'					5' -CAC 3'			
	71(299)		71(299)						77(319)			
	5' -gCg 3'		5' -gCT 3'						5' -CAA 3'			
	77(317)		73(305)									
	5' -AgT 3'		5' -ggC 3'									
	86(344)											
	5' -CCA 3'											
Well No.	1	2	3	4	5	6	7	8	9	10	11	12

Well No.	21	22	23	24	25	26	27	28	29	30	31
Length of spec.	100	85	215	195	175	100	110	110	160	215	175
PCR product	170	105		225	240	140	140	150	240		
						155	170	180			
								220			
Length of int. pos. control[1]	430	430	430	430	430	430	430	430	430	430	430
5'-primer(s)[2]	13(125)	15(133)	10(116)	10(116)	13(125)	1st I	26(164)	13(125)	10(116)	28(170)	13(125)
	5' -gTC 3'	5' -gTT 3'	5' -gCT 3'	5' -gCT 3'	5' -gTC 3'	5' -CAA 3'	5' -gTA 3'	5' -gTC 3'	5' -gCT 3'	5' -gAT 3'	5' -gTA 3'
	15(133)		12(122)	12(122)	114(429)	37(197)	34(189)	34(189)	10(116)		
	5' -gTC 3'		5' -TAT 3'	5' -TAT 3'	5' -CTg 3'	5' -gTT 3'	5' -CAg 3'	5' -CAg 3'	5' -gCT 3'		
	38(200)		13(125)	13(125)		37(197)		36(196)	37(199)		
	5' -CgT 3'		5' -gTC 3'	5' -gTC 3'		5' -gTA 3'		5' -AgC 3'	5' -TCC 3'		
				15(133)							
				5' -gTT 3'							
				15(133)							
				5' -gTC 3'							
3'-primer(s)[3]	58(260)	29(175)	69(295)	66(286)	58(260)	42(213)	57(257)	57(257)	51(239)	86(346)	57(258)
	5' -CCT 3'	5' -gTg 3'	5' -gTC 3'	5' -gAA 3'	5' -Cgg 3'	5' -TCA 3'	5' -CAg 3'	5' -CAg 3'	5' -CCC 3'	5' -CTC 3'	5' -gCg 3'
	58(260)	37(199)	71(299)	70(298)	58(260)	57(257)	69(295)	59(265)	77(317)	86(346)	58(260)
	5' -CCT 3'	5' -CAg 3'	5' -gCT 3'	5' -CgC 3'	5' -CAg 3'	5' -CAg 3'	5' -CTg 3'	5' -gTg 3'	5' -AAT 3'	5' -CTT 3'	5' -CCT 3'
	58(260)		71(299)	70(298)	181(630)	70(298)	70(296)	70(296)			
	5' -CCT 3'		5' -ACT 3'	5' -CTC 3'	5' -CTT 3'	5' -CgC 3'	5' -TCC 3'	5' -TCC 3'			
								73(307)			
								5' -CAg 3'			
Well No.	13	14	15	16	17	18	19	20	21	22	23

101.704-48/12 – including *Taq* pol., IFU-01
101. 704-48u/12u – without *Taq* pol., IFU-02

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Lot No.: 13V **Lot-specific information**

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101.704-48/12 – including *Taq* pol., IFU-01
101. 704-48u/12u – without *Taq* pol., IFU-02

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Lot No.: 13V **Lot-specific information**

CELL LINE VALIDATION SHEET

DQ low resolution primer set[2]

					Well							
					1	2	3	4	5	6	7	8
				Production No.	201328001	201323102	201323103	201328004	201328005	201328006	201328007	201328008
	IHWC cell line[1]		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		+	-	-	-	-	-	-	-

101.704-48/12 – including *Taq* pol., IFU-01
101. 704-48u/12u – without *Taq* pol., IFU-02

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Lot No.: 13V **Lot-specific information**

CELL LINE VALIDATION SHEET

DR low resolution primer set[2]

					Well															
					9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24
				Prod. No.:	201326701	201326702	201326703	201326704	201326705	201326706	201326707	201326708	201326709	201326710	201326711	201326712	201326713	201326714	201326715	201326716
	IHWC cell line[1]		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	*14:54	-	-	-	-	-	+	-	-	-	-	-	-	-	-	+	+
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		-	+	-	-	-	-	-	-	-	-	-	-	-	-	-	-

101.704-48/12 – including *Taq* pol., IFU-01
101. 704-48u/12u – without *Taq* pol., IFU-02

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Lot No.: 13V **Lot-specific information**

CELL LINE VALIDATION SHEET

DR low resolution primer set[1]

					Well						
					25	26	27	28	29	30	31
				Prod. No.:	201326717	201326718	201326719	201326720	201326729	201326730	201326731
	IHWC 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	*14:54	+	+	+	+	+	-	-
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		-	-	-	-	-	-	-

[1]The provided cell line HLA specificities are retrieved from the http://www.ihwg.org/hla web site. The specificity of an individual cell line may thus be subject to change.

[2]The specificity of each primer solution in the kit has been tested against 48 well characterized cell line DNAs and where applicable, additional cell line DNAs.

101.704-48/12 – including *Taq* pol., IFU-01
101. 704-48u/12u – without *Taq* pol., IFU-02

Visit www.olerup-ssp.com for **"Instructions for Use" (IFU)**

Lot No.: 13V **Lot-specific information**

One 5'-primer and one or more 3'primers in primer solution 17, 19 and 26 were tested by separately adding additional 5'-primers or 3'-primers.
One or more additional 3'-primers in primer solution 9, 11, 12, 18 and 28 were tested by separately adding another 5'-primer.
One 5'-primer in primer solutions 2, 7, 14, 20, 23 and 24 was tested by separately adding additional 3'-primers.
In primer solutions 1, 2, 4, 7, 9, 11, 12, 17, 21, 23 and 30 one or more 3'-primers were not possible to test, and in primer solutions 1, 2, 3, 9, 11, 12, 16 to 18, 21, 23, 24 and 28 one or more 5'-primers were not possible to test.

101.704-48/12 – including *Taq* pol., IFU-01
101. 704-48u/12u – without *Taq* pol., IFU-02

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Lot No.: 13V **Lot-specific information**

101.704-48/12 – including *Taq* pol., IFU-01
101. 704-48u/12u – without *Taq* pol., IFU-02

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Lot No.: 13V **Lot-specific information**

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