101.214-24/06 – including *Taq* polymerase, IFU-01
101.214-24u/06u – without *Taq* polymerase, IFU-02

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

Lot No.: 94X

Lot-specific information

Olerup SSP® DQB1*03

Product number:	**101.214-24/06 – including *Taq* pol.** **101.214-24u/06u – without *Taq* pol.**
Lot number:	**94X**
Expiry date:	**2017-August-01**
Number of tests:	**24 test – Product No. 101.214-24/24u** **6 tests – Product No. 101.214-06/06u**
Number of wells per test:	**47+1**
Storage - pre-aliquoted primers:	**dark at -20ºC**
- PCR Master Mix:	**-20ºC**
- Adhesive PCR seals	**RT**
- Product Insert	**RT**

This Product Description is only valid for Lot No. 94X.

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

CHANGES COMPARED TO THE PREVIOUS *OLERUP* SSP® DQB1*03 LOT (12X)

A well containing Negative Control primer pairs has been added.

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

The DQB1*03 primer set, specificity and interpretation tables have been updated for the HLA-DQB1 alleles described since the previous *Olerup* SSP® DQB1*03 lot was made **(Lot No. 12X)**. The kit design is based on IMGT/HLA database 3.13.1.

As of lot series V, the Specificity Table is included in the lot-specific Product Insert, and the Interpretation Table is included in the Worksheet.

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	-	-	Strength of control band has been optimized.
2	-	-	Strength of control band has been optimized.
42	Added	-	5'-primer added for improved resolution of the DQB1*03:77 allele.

Change in revision R01 compared to R00:
1. Primer mix 21 does not amplify the DQB1*03:22 allele. This has been corrected in the Specificity and Interpretation Tables.

Change in revision R02 compared to R01:
1. Primer mix 15 may faintly amplify the DQB1*03:16 allele. A foot note has been added in the Specificity Table.

Lot No.: 94X **Lot-specific information**

Well **48** contains Negative Control primer pairs, that will amplify more than 95% of the *Olerup* SSP® HLA Class I, DRB, DQB1, DPB1 and DQA1 amplicons as well as all the amplicons generated by the control primer pairs matching the human growth hormone gene.

HLA-specific PCR product sizes range from 75 to 200 base pairs.
The PCR product generated by the positive control primer pair is 430 base pairs.

Length of PCR product	**105**	**200**	**105**	**80**	**75**	**80**	**85**
5'-primer[1]	**164**	**340**	**440**	**45**	**45**	**43**	**36**
	5'-CAC3'	**5'-Agg3'**	**5'-TTA3'**	**5'-Tgg3'**	**5'-Tgg3'**	**5'-Tgg3'**	**5'-TAC3'**
							36
							5'-TAT3'
3'-primer[2]	**231**	**2nd I**	**507**	**59**	**58**	**57**	**47**
	5'-TgC3'	**5'-AAA3'**	**5'-TTg3'**	**5'-CTC3'**	**5'-ggC3'**	**5'-CTC3'**	**5'-ACA3'**
							48
							5'-gCA3'
							48
							5'-gCC3'
							52
							5'-TgT3'
A*	**+**	**+**	**+**				
B*	**+**	**+**	**+**				
C*	**+**	**+**	**+**				
DRB1				**+**	**+**		
DRB3				**+**	**+**		
DRB5				**+**			
DQB1					**+**		
DPB1						**+**	
DQA1							**+**

[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.

101.214-24/06 – including *Taq* polymerase, IFU-01
101.214-24u/06u – without *Taq* polymerase, IFU-02

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Lot No.: 94X **Lot-specific information**

PRODUCT DESCRIPTION

DQB1*03 SSP subtyping

CONTENT

The primer set contains 5'- and 3'-primers for identifying the DQB1*03:01 to DQB1*03:89 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 48 PCR reactions in a 48 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	NC

The 48 well cut PCR plate is marked with 'DQB1*03' in silver/gray ink.
Well No. 1 is marked with the Lot No. '94X'.
Wells 1 to 47 – DQB1*03 high resolution primers.
Well 48 – Negative Control (NC).
A faint row of numbers is seen between wells 1 and 2 or wells 7 and 8 of the PCR trays. These stem from the manufacture of the trays, and should be disregarded.
The PCR plates are covered with a PCR-compatible foil.
Please note: When removing each 48 well PCR plate, make sure that the remaining plates stay covered. Use a scalpel or a similar instrument to carefully cut the foil between the plates.

INTERPRETATION

Due to the sharing of sequence motifs, non-DQB1*03 alleles will be amplified by primer mixes 1, 3, 4, 6, 7, 9, 11, 15, 16, 18, 20, 22, 25, 26, 33 and 43.
The interpretation of DQB1*03 subtypings is not influenced by the DQB2 and DQB3 genes.
For further details see Specificity Table.

UNIQUELY IDENTIFIED ALLELES

All the DQB1*03 alleles, i.e. **DQB1*03:01 to DQB1*03:89**, recognized by the HLA Nomenclature Committee in April 2013[1,2] will give rise to unique amplification patterns by the primers in the DQB1*03 subtyping kit[3].

The DQB1*03 subtyping kit cannot distinguish the following silent mutations: the DQB1*03:01:01:01-03:01:02, 03:01:04-03:01:07, 03:01:09-03:01:12, 03:01:14, 03:01:16-03:01:20, the DQB1*03:01:13 and 03:01:15, the DQB1*03:02:01-03:02:09, the DQB1*03:03:02:01-03:03:05 and DQB1*03:03:07, the DQB1*03:05:01-03:05:04, the DQB1*03:14:01-03:14:02 and the DQB1*03:17:01-03:17:02 alleles.

[1]HLA-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]This lot of the DQB1*03 subtyping kit cannot distinguish the DQB1*03:01:01:01-03:01:02, 03:01:04-03:01:07, 03:01:09-03:01:12, 03:01:14 and 03:01:16-03:01:20 alleles and the DQB1*03:22 alleles.

RESOLUTION IN HOMO- AND HETEROZYGOTES

Results file with resolution in DQB1*03 homo- and heterozygotes is available upon request.

101.214-24/06 – including *Taq* polymerase, IFU-01
101.214-24u/06u – without *Taq* polymerase, IFU-02

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Lot No.: 94X **Lot-specific information**

SPECIFICITY TABLE

DQB1*03 SSP subtyping

Specificities and sizes of the PCR products of the 47+1 primer mixes used for DQB1*03 SSP subtyping

Primer Mix	Size of spec. PCR product[1]	Size of control band[2]	Amplified DQB1*03 alleles[3]	Other amplified DQB1 alleles[4]
1	165 bp	**515 bp**	*03:01:01:01-03:01:20, 03:04:01, 03:09, 03:13, 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, 03:74-03:78, 03:80, 03:82-03:84N	*04:09
2	220 bp	**515 bp**	*03:01:01:01-03:01:07, 03:01:09-03:01:20, 03:04:01, 03:09-03:10:01, 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	
3[6]	135 bp	**515 bp**	*03:02:01-03:02:09, 03:07-03:08, 03:11, 03:18, 03:32, 03:37, 03:45, 03:62-03:64, 03:66N-03:68, 03:70, 03:81, 03:85	*02:01:01-02:01:06, 02:01:08-02:02:02, 02:04-02:16, 02:18N-02:33, 06:29, 06:63
4	220 bp	**515 bp**	*03:02:01-03:03:07, 03:06-03:08, 03:11-03:12, 03:15, 03:18, 03:20, 03:23, 03:25-03:26, 03:30-03:34, 03:37-03:41, 03:43, 03:45, 03:62-03:68, 03:70, 03:74, 03:79, 03:81, 03:85-03:89	*02:01:01-02:33, 04:03:01-04:03:02
5[6]	135 bp	430 bp	*03:04:01, 03:14:01-03:14:02, 03:80	
6[5,7]	95 bp 130 bp	430 bp	*03:20 *03:05:01-03:05:04, 03:17:01-03:17:02, 03:61, 03:72	 *04:09
7[5,9]	115 bp 150 bp	430 bp	*03:03:06, 03:06, 03:25, 03:42, 03:88 *03:84N	*04:01:03
8[5]	110 bp 140 bp	430 bp	*03:15 *03:07, 03:16	
9[5]	65 bp 135 bp	430 bp	*03:40 *03:08	 *06:02:02, 06:03:02
10	135 bp 260 bp	430 bp	*03:09 *03:11, 03:26	
11[7]	135 bp 255 bp	430 bp	*03:10:01, 03:12, 03:14:01-03:14:02, 03:70 *03:47	*06:01:01-06:01:06, 06:01:08-06:01:10, 06:43, 06:54N-06:58, 06:98, 06:100-06:105
12	260 bp	**515 bp**	*03:01:01:01-03:01:07, 03:01:09-03:01:20, 03:04:01, 03:09-03:10:01, 03:12-03:14:02, 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, 03:70-03:71, 03:74-03:78, 03:80, 03:82-03:84N	

CE

For *In Vitro* Diagnostic Use.

Lot No.: 94X **Lot-specific information**

13	165 bp 205 bp	430 bp	*03:13 *03:48	
14[7]	130 bp	430 bp	*03:01:01:01-03:01:12, 03:01:14, 03:01:16-03:01:20, 03:04:01, 03:09-03:10:01, 03:13-03:14:02, 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	
15[9]	135 bp	**515 bp**	*03:01:01:01-03:01:07, 03:01:09-03:15, 03:17:01-03:22, 03:24, 03:26-03:72, 03:74-03:89	*04:09
16[7]	130 bp	430 bp	*03:01:01:01-03:01:02, 03:01:04-03:01:07, 03:01:09-03:01:12, 03:01:14, 03:01:16-03:01:20, 03:03:02:01-03:03:07, 03:06, 03:09-03:10:01, 03:12-03:13, 03:15-03:17:02, 03:19-03:24, 03:26-03:31, 03:33-03:36, 03:38-03:44, 03:46-03:60, 03:65, 03:69, 03:71-03:72, 03:74-03:79, 03:82-03:84N, 03:86-03:89	*02:03, 04:09-04:10
17	165 bp 220 bp	430 bp	*03:43, 03:87 *03:18, 03:85	
18[8]	175 bp	**515 bp**	*03:02:01-03:03:07, 03:05:01-03:05:04, 03:06?-03:08?, 03:11?-03:15?, 03:17:01?-03:18?, 03:19, 03:20?, 03:23?, 03:25, 03:26?, 03:30-03:32, 03:33?-03:34?, 03:37?, 03:38-03:39, 03:40?, 03:41, 03:43, 03:45, 03:48?, 03:52?-03:72?, 03:74?-03:78?, 03:79, 03:81?-03:82?, 03:85-03:89	*04:01:01-04:17
19[8]	175 bp	430 bp	*03:01:01:01-03:01:20, 03:04:01, 03:06?-03:08?, 03:09-03:10:01, 03:11?-03:15?, 03:16, 03:17:01?-03:18?, 03:20?, 03:21-03:22, 03:23?, 03:24, 03:26?, 03:27-03:29, 03:33?-03:34?, 03:35-03:36, 03:37?, 03:40?, 03:42, 03:44, 03:46-03:47, 03:48?, 03:49-03:51, 03:52?-03:71?, 03:74?-03:78?, 03:80, 03:81?-03:82?, 03:83-03:84N	
20	150 bp	430 bp	*03:21	*05:35
21	160 bp	**515 bp**		
22	160 bp	**515 bp**	*03:23	*06:03:01-06:03:03, 06:03:05-06:03:07, 06:04:02, 06:07:01, 06:08:01, 06:09:02, 06:11:01-06:11:02, 06:26N, 06:28, 06:30-06:32, 06:40-06:41, 06:44, 06:59-06:62, 06:64-06:65, 06:67, 06:90-06:92, 06:94
23[5,6]	95 bp 125 bp 150 bp 185 bp	430 bp	*03:41 *03:24, 03:79, 03:89 *03:84N *03:45	

24[5,7]	120 bp	430 bp	*03:39	
	210 bp		*03:27, 03:48, 03:56	
25[6]	130 bp	430 bp	*03:24, 03:79	
	165 bp		*03:29, 03:80	
	240 bp		*03:34	*02:14:01
26	180 bp	430 bp	*03:30, 03:52, 03:72	*04:09, 06:29, 06:96
27[8]	170 bp	430 bp	*03:32, 03:87	
	225 bp		*03:85	
	250 bp		*03:31	
28	200 bp	430 bp	*03:37-03:38, 03:46	
29[5]	110 bp	**515 bp**	*03:33	
	165 bp		*03:35	
30	135 bp	430 bp	*03:36	
31	200 bp	430 bp	*03:28, 03:56	
	225 bp		*03:83	
32[5]	100 bp	430 bp	*03:44	
33[5]	85 bp	430 bp	*03:59	*06:37
34[6]	175 bp	430 bp	*03:50, 03:58	
	200 bp		*03:82	
35	180 bp	430 bp	*03:51, 03:54	
36	180 bp	430 bp	*03:55, 03:60	
37	180 bp	430 bp	*03:60, 03:77	
	230 bp		*03:53, 03:62	
38	175 bp	430 bp	*03:58	
	230 bp		*03:57, 03:83	
39	145 bp	430 bp	*03:66N	
	190 bp		*03:68	
	235 bp		*03:86	
40	185 bp	430 bp	*03:67-03:68	
41	175 bp	430 bp	*03:63, 03:75	
42	165 bp	430 bp	*03:64, 03:76-03:77	
43	160 bp	430 bp	*03:49	*02:10
44	270 bp	430 bp	*03:71	
45[5]	90 bp	430 bp	*03:65	
	230 bp		*03:81	
46[5,6]	115 bp	430 bp	*03:88-03:89	
47	175 bp	430 bp	*03:06[?]-03:08[?], 03:11[?]-03:15[?], 03:17:01[?]-03:18[?], 03:19, 03:20[?], 03:23[?], 03:26[?], 03:37[?], 03:40[?], 03:48[?], 03:52[?]-03:71[?], 03:74[?]-03:78[?], 03:81[?]-03:82[?]	
48[10]			**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 DQB1*03 SSP typings.
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.

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.

[3]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.

[4]Due to the sharing of sequence motifs, non-DQB1*03 alleles will be amplified by primer mixes 1, 3, 4, 6, 7, 9, 11, 15, 16, 18, 20, 22, 25, 26, 33 and 43.

[5]HLA-specific PCR products shorter than 125 base pairs have a lower intensity and are less sharp than longer PCR products.

[6]Primer mixes 3, 5, 23, 25, 34 and 46 may have a tendency to giving rise to primer oligomer formation.

[7]Primer mixes 6, 11, 14, 16 and 24 may have tendencies of unspecific amplifications.

[8]Primer mixes 18, 19 and 27 may give rise to a lower yield of HLA-specific PCR product than the other DQB1*03 primer mixes.

[9]Primer mix 15 may faintly amplify the DQB1*03:16 allele.

[10]Primer mix 48 contains a negative control, which will amplify more than 95% of HLA amplicons as well as the amplicons generated by the control primer pairs matching the human growth hormone gene. HLA-specific PCR product sizes range from 75 to 200 base pairs and the PCR product generated by the HGH positive control primer pair is 430 base pairs.

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

101.214-24/06 – including *Taq* polymerase, IFU-01
101.214-24u/06u – without *Taq* polymerase, IFU-02

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Lot No.: 94X

Lot-specific information

PRIMER SPECIFICATION

Well No.	1	2	3	4	5	6	7	8	9	10	11	12
Length of spec.	165	220	135	220	135	95	115	110	65	135	135	260
PCR product						130	150	140	135	260	255	
Length of int.	515	515	515	515	430	430	430	430	430	430	430	515
pos. control[1]												
5'-primer(s)[2]	45(230)	26(173)	26(173)	26(173)	26(173)	26(173)	38(210)	49(242)	38(210)	13(136)	13(134)	13(134)
	5' -ggA 3'	5' -TTA 3'	5' -TCT 3'	5' -TCT 3'	5' -TTA 3'	5' -ggg 3'	5' -gCA 3'	5' -ggT 3'	5' -gCA 3'	5' -gCC 3'	5' -ggC 3'	5' -ggC 3'
						37(208)	139(514)	55(260)		135(500)		
						5' -ACA 3'	5' -CAA 3'	5' -gCA 3'		5' -TgA 3'		
								63(285)				
								5' -Agg 3'				
3'-primer(s)[3]	86(353)	86(353)	57(266)	86(353)	57(266)	55(260)	62(282)	86(353)	45(232)	86(353)	45(230)	86(353)
	5' -gTT 3'	5' -gCT 3'	5' -Cgg 3'	5' -gCT 3'	5' -Cgg 3'	5' -gCg 3'	5' -CTA 3'	5' -gCT 3'	5' -CAA 3'	5' -gCT 3'	5' -CCC 3'	5' -gCT 3'
	86(353)						162(583)		69(304)	167(596)	84(349)	
	5' -gCT 3'						5' -CAC 3'		5' -CCC 3'	5' -CAT 3'	5' -CAT 3'	
							164(589)					
							5' -ggT 3'					
							175(622)					
							5' -CTA 3'					
Well No.	1	2	3	4	5	6	7	8	9	10	11	12

Well No.	13	14	15	16	17	18	19	20	21	22	23	24
Length of spec.	165	130	135	130	165	175	175	150	160	160	95	120
PCR product	205				220						125	210
											150	
											185	
Length of int.	430	430	515	430	430	515	430	430	515	515	430	430
pos. control[1]												
5'-primer(s)[2]	26(173)	26(173)	55(260)	57(266)	26(175)	139(514)	139(514)	132(493)	130(485)	9(122)	26(173)	26(173)
	5' -TTA 3'	5' -TTA 3'	5' -gCC 3'	5' -TgA 3'	5' -TTC 3'	5' -CAA 3'	5' -CAA 3'	5' -TTT 3'	5' -CCA 3'	5' -gTA 3'	5' -TCT 3'	5' -TTA 3'
					123(464)						139(514)	101(400)
					5' -CTT 3'						5' -CAA 3'	5' -TCT 3'
					141(520)							
					5' -gCC 3'							
					146(533)							
					5' -CCA 3'							
3'-primer(s)[3]	67(296)	55(260)	86(353)	86(353)	86(353)	185(650)	185(650)	169(604)	169(604)	48(240)	44(229)	81(338)
	5' -ggT 3'	5' -gCg 3'	5' -gCT 3'	5' -gCT 3'	5' -gCT 3'	5' -CgA 3'	5' -Cgg 3'	5' -gAC 3'	5' -gAC 3'	5' -gCg 3'	5' -CCA 3'	5' -TgC 3'
	81(338)	55(260)			185(650)						74(318)	82(343)
	5' -TgC 3'	5' -gCg 3'			5' -CgA 3'						5' -AAg 3'	5' -gTC 3'
		55(260)									166(595)	82(343)
		5' -ggg 3'									5' -ACA 3'	5' -gTg 3'
											169(604)	127(477)
											5' -gAT 3'	5' -TTC 3'
											175(622)	
											5' -CTA 3'	
Well No.	13	14	15	16	17	18	19	20	21	22	23	24

101.214-24/06 – including *Taq* polymerase, IFU-01
101.214-24u/06u – without *Taq* polymerase, IFU-02

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Lot No.: 94X **Lot-specific information**

Well No.	25	26	27	28	29	30	31	32	33	34	35	36
Length of spec.	130	180	170	200	110	135	200	100	85	175	180	180
PCR product	165		225		165		225			200		
	240		250									
Length of int.	430	430	430	430	515	430	430	430	430	430	430	430
pos. control[1]												
5'-primer(s)[2]	19(154)	8(121)	115(442)	29(184)	128(481)	23(166)	26(173)	13(134)	62(282)	26(173)	34(197)	38(211)
	5' -ACA 3'	5' -TgC 3'	5' -TgA 3'	5' -gAC 3'	5' -AAA 3'	5' -gCA 3'	5' -TTA 3'	5' -ggC 3'	5' -AAg 3'	5' -TTA 3'	5' -CCA 3'	5' -CAT 3'
	48(239)	9(122)	123(464)	30(187)	146(535)					101(400)	101(400)	40(217)
	5' -CCA 3'	5' -gTT 3'	5' -CTT 3'	5' -ACg 3'	5' -CCT 3'					5' -TCT 3'	5' -TCT 3'	5' -TCC 3'
	139(514)		140(517)	36(204)								
	5' -CAA 3'		5' -CTA 3'	5' -gAC 3'								
			146(533)									
			5' -CCA 3'									
3'-primer(s)[3]	86(353)	55(260)	185(650)	86(353)	169(604)	55(260)	76(325)	32(191)	77(326)	71(308)	86(353)	86(353)
	5' -gCT 3'	5' -gCg 3'	5' -CgA 3'	5' -gCT 3'	5' -gAC 3'	5' -gCg 3'	5' -CgC 3'	5' -TAC 3'	5' -CCg 3'	5' -ggC 3'	5' -gCT 3'	5' -gCT 3'
	169(604)	55(260)				55(260)	82(343)			79(332)	149(544)	
	5' -gAT 3'	5' -gCg 3'				5' -gCg 3'	5' -gTC 3'			5' -TgT 3'	5' -gTC 3'	
	182(641)						88(359)			145(532)		
	5' -ggC 3'						5' -TgA 3'			5' -ggT 3'		
Well No.	25	26	27	28	29	30	31	32	33	34	35	36

Well No.	37	38	39	40	41	42	43	44	45	46	47
Length of spec.	180	175	145	185	175	165	160	270	90	115	175
PCR product	230	230	190						230		
			235								
Length of int.	430	430	430	430	430	430	430	430	430	430	430
pos. control[1]											
5'-primer(s)[2]	23(164)	26(173)	26(173)	26(173)	38(209)	41(219)	101(400)	10(126)	22(163)	139(514)	140(516)
	5' -gCA 3'	5' -TTA 3'	5' -TCT 3'	5' -TCT 3'	5' -CgA 3'	5' -gAg 3'	5' -TCT 3'	5' -CAT 3'	5' -AgA 3'	5' -CAA 3'	5' -ACC 3'
	38(211)				44(227)	46(235)		26(173)	70(306)		
	5' -CAT 3'				5' -CgC 3'	5' -TgA 3'		5' -TTT 3'	5' -AgC 3'		
	41(219)					48(239)					
	5' -gAg 3'					5' -TCC 3'					
3'-primer(s)[3]	86(353)	71(308)	61(278)	73(314)	86(353)	86(353)	141(520)	86(353)	86(353)	164(589)	185(650)
	5' -gCT 3'	5' -ggC 3'	5' -TCT 3'	5' -CCT 3'	5' -gCT 3'	5' -gCT 3'	5' -AAT 3'	5' -gCT 3'	5' -gCT 3'	5' -ggT 3'	5' -CgA 3'
		88(359)	76(324)	76(324)						166(595)	
		5' -TgA 3'	5' -gTT 3'	5' -gTT 3'						5' -ACA 3'	
		89(362)	90(365)								
		5' -TCA 3'	5' -AgT 3'								
Well No.	37	38	39	40	41	42	43	44	45	46	47

[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.

101.214-24/06 – including *Taq* polymerase, IFU-01 Visit www.olerup-ssp.com for
101.214-24u/06u – without *Taq* polymerase, IFU-02 **"Instructions for Use" (IFU)**

Lot No.: 94X **Lot-specific information**

[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.

101.214-24/06 – including *Taq* polymerase, IFU-01
101.214-24u/06u – without *Taq* polymerase, IFU-02

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Lot No.: 94X **Lot-specific information**

CELL LINE VALIDATION SHEET

DQB1*03 SSP subtyping kit[2]

					Well													
					1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
				Production No.	201547901	201547902	201321503	201321504	201321505	201321506	201327207	201321508	201321509	201321510	201321511	201321512	201321513	201321514	201321515	201321516
	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	CTM3953540	*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			-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

101.214-24/06 – including *Taq* polymerase, IFU-01
101.214-24u/06u – without *Taq* polymerase, IFU-02

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Lot No.: 94X **Lot-specific information**

CELL LINE VALIDATION SHEET

DQB1*03 SSP subtyping kit[2]

					Well															
					17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32
				Production No.	201327217	201321518	201327219	201321520	201321521	201321522	201547923	201321524	201327225	201321526	201327227	201321528	201321529	201321530	201327231	201321532
	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	CTM3953540	*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			-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

101.214-24/06 – including *Taq* polymerase, IFU-01
101.214-24u/06u – without *Taq* polymerase, IFU-02

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Lot No.: 94X **Lot-specific information**

CELL LINE VALIDATION SHEET

DQB1*03 SSP subtyping kit[2]

					Well														
					33	34	35	36	37	38	39	40	41	42	43	44	45	46	47
				Production No.	201321533	201327234	201321535	201327236	201327237	201327238	201327239	201438940	201547941	201547942	201327243	201327244	201438945	201327246	201327247
	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	CTM3953540	*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			-	-	-	-	-	-	-	-	-	-	-	-	-	-

[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.

101.214-24/06 – including *Taq* polymerase, IFU-01
101.214-24u/06u – without *Taq* polymerase, IFU-02

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

Lot No.: 94X **Lot-specific information**

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

No DNAs carrying the alleles to be amplified by primer solutions 7 to 10, 13, 17, 20, 21, and 23 to 46 were available. The specificities of the primers in primer solutions 7, 9, 10, 25 to 28 and 35 were tested by separately adding additional 5'-primers respectively 3'-primers. In primer solutions 8, 17, 20, 21, 29, 30, 33, 36, 37, 41, 42, 44 and 45 it was only possible to test the 3'-primer, the 5'-primers were not possible to test. In primer solutions 13, 23, 24, 31, 32, 34, 38 to 40, 43 and 46 it was only possible to test the 5'-primers, the 3'-primers were not possible to test. In primer solutions 1, 7, 9 to 11, 14, 25 and 35 one or more of the 3'-primers was not possible to test, and in primer solution 6, 25 to 28 and 35 one or two of the 5'-primers was not possible to test.

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