

101.903-24 – including *Taq* polymerase, IFU-01

101.903-24u – without *Taq* polymerase, IFU-02

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

Lot No.: **6F0**

Lot-specific information

Olerup SSP[®] DQA1*02,05;DQB1*02,03:02

Product number:	101.903-24 – including <i>Taq</i> polymerase 101.903-24u – without <i>Taq</i> polymerase
Lot number:	6F0
Expiry date:	2020-05-01
Number of tests:	24
Number of wells per test:	21 + 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. 6F0.

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

**CHANGES COMPARED TO THE PREVIOUS OLERUP SSP[®]
DQA1*02,05;DQB1*02,03:02 Lot (3E2)**

The DQA1*02,05;DQB1*02,03:02 kit has been redesigned and improved with regards to allelic detection and discrimination and facilitated interpretation. The kit resolution focuses on common and well documented (CWD) alleles¹.

The kit contains 21 primer mixes for the DQA1 and DQB1 alleles and includes a negative control.

One well has been added for DQA1 alleles

The primer set, specificity and interpretation tables have been updated for the DQA1 and DQB1 alleles described since the previous Olerup SSP[®] DQA1*02,05;DQB1*02,03:02 lot (**Lot No. 3E2**) was made. The kit design is based on IMGT/HLA database 3.28.0.

¹S. J. Mack¹, P. Cano², J. A. Hollenbach¹ et al.
Common and well-documented HLA alleles: 2012 update to the CWD catalogue. Tissue Antigens, 2013, 81, 194–203

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

Well	5'-primer	3'-primer	rationale
8	Exchanged	Exchanged	Primer pair exchanged for improved allelic resolution of the DQA1*03:01 allele.
10	New	New	New primer pair for the allelic resolution of the DQA1*05:05 alleles.
22	-	-	Negative Control added from well 21.

Change in revision R01 compared to R00:

1. The control band of primer mix 10 has been corrected to 515 bp in the Product Insert and the Worksheet.

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Well **22** 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'-primer¹	164	340	440	45	45	43	36
	5'-CAC ^{3'}	5'-Agg ^{3'}	5'-TTA ^{3'}	5'-Tgg ^{3'}	5'-Tgg ^{3'}	5'-Tgg ^{3'}	5'-TAC ^{3'}
							36
							5'-TAT ^{3'}
3'-primer²	231	2nd I	507	59	58	57	47
	5'-TgC ^{3'}	5'-AAA ^{3'}	5'-TTg ^{3'}	5'-CTC ^{3'}	5'-ggC ^{3'}	5'-CTC ^{3'}	5'-ACA ^{3'}
							48
							5'-gCA ^{3'}
							48
							5'-gCC ^{3'}
							52
							5'-TgT ^{3'}
A*	+	+	+				
B*	+	+	+				
C*	+	+	+				
DRB1				+	+		
DRB3				+	+		
DRB5				+			
DQB1					+		
DPB1						+	
DQA1							+

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

DQA1*02,05;DQB1*02,03:02 SSP subtyping

CONTENT

The primer set contains 5'- and 3'-primers for identifying the following on CWD level:

DQA1*05:01 DQB1*02:01 (DQ2)

DQA1*05:05 DQB1*03:01 / DQA1*02:01 **DQB1*02:02** (DQ2)

DQA1*03:01 DQB1*03:02 (DQ8)

DQA1*05 DQB1*02 / **DQA1*03:01 DQB1*03:02** (DQ2 + DQ8)

DQA1*05:01 X

DQA1*05:05 X

DQB1*02:01 X

DQB1*02:02 X

DQB1*03:02 X

α and β chains associated with the disease in bold^{1,2,3}.

X = other allele.

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.

¹Catassi C, Kryszak D, Louis-Jacques O, et al.

Detection of Celiac disease in primary care: a multicenter case-finding study in North America.

Am J Gastroenterol. 2007 Jul;102(7):1454-60. Epub 2007 Mar 13.

²Megiorni F, Mora B, Bonamico M, Barbato M, Nenna R, Maiella G, Lulli P, Mazzilli MC.

HLA-DQ and risk gradient for celiac disease.

Hum Immunol. 2009 Jan;70(1):55-9

³Karell K, Louka AS, Moodie SJ, et al. HLA types in celiac disease patients not carrying the DQA1*05-DQB1*02 (DQ2) heterodimer: results from the European Genetics Cluster on Celiac Disease.

Hum Immunol. 2003 Apr;64(4):469-77

Positive and negative control DNAs are included in the kit:

DNA 1; positive control DNA (containing mixed DNA of the cell lines **IHW 9020**, **QBL** and **IHW 9024, KT17**). The positive control DNA will be positive for the alleles DQA1*05:01, DQA1*03:01, DQB1*02:01, DQB1*03:02.

DNA 2; negative control DNA, **IHW 9025, DEU**, DQA1*03, DQB1*03:01. The cell line is negative for DQA1*02, DQA1*05, DQB1*02 and DQB1*03:02.

The kit contains enough control DNAs to perform 1 test set up of positive and negative control. If more than 1 test set up per kit are run other positive and negative DNA samples can be used as controls (e.g. positive and negative samples from previous tests).

Legal notice: The DNA in this kit is included under licensing agreement between Olerup SSP AB and Public Health England.

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PLATE LAYOUT

Each test consists of 22 PCR reactions in a 24 well PCR plate. Wells 23 to 24 are empty.

1	2	3	4	5	6	7	8
DQA1	DQA1	DQA1	DQA1	DQA1	DQA1	DQA1	DQA1
9	10	11	12	13	14	15	16
DQA1	DQA1	DQB1	DQB1	DQB1	DQB1	DQB1	DQB1
17	18	19	20	21	22	empty	empty
DQB1	DQB1	DQB1	DQB1	DQB1	NC		

The 24 well cut PCR plate is marked with ‘6F0’ in silver/gray ink.

Well No. 1 is marked with the Lot No ‘6F0’.

Wells 1 to 10 – DQA1 high resolution primers.

Wells 11 to 21 – DQB1 resolution primers.

Well 22 – 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 24 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.

UNIQUELY IDENTIFIED ALLELES

DQA1 and DQB1 alleles recognized by the HLA Nomenclature Committee in April 2017^{1,2} have been considered in the specificity and interpretation tables of the DQA1*02,05;DQB1*02,03:02 kit.

For further details see Content section.

¹DQA1 and DQB1 alleles listed on the IMGT/HLA web page 2017-April-13, release 3.28.0, www.ebi.ac.uk/imgt/hla.

²Alleles 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>.

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EXPECTED RESULTS

Table 1 describes expected results for the (groups of) alleles that the kit is able to detect and separate.

Table 1: Expected results for targeted DQA1 and DQB1 alleles.

DQA1 alleles	DQB1 alleles	Positive DQA1 wells	Positive DQB1 wells
05:01	02:01 (DQ2)	3, 5	11, 13, 15
(02:01)	02:02 (DQ2)	1, 8	11, 12, 15
05:05	(03:01)	3, 5, 6, 10	13, 18, 20
03:01	03:02 (DQ8)	2, 8	13, 15, 16, 18, 21
03:02, 03:03	03:02 (DQ8)	2	13, 15, 16, 18, 21
05:01		3, 5	
05:05		3, 5, 6, 10	
02:01		1, 8	
03:01		2, 8	
03:02, 03:03		2	
	02:01		11, 13, 15
	02:02		11, 12, 15
	03:01		13, 18, 20
	03:02		13, 15, 16, 18, 21

The negative control DNA must only give rise to the internal control bands of 430 or 515 base pairs respectively and no DQA1*02,05;DQB1*02,03:02 specific bands. Additional bands might indicate inappropriate test conditions or contamination.

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SPECIFICITY TABLE

DQA1*02,05;DQB1*02,03:02 SSP subtyping

Specificities and sizes of the PCR products of the 21 +1 primer mixes used
for DQA1*02,05;DQB1*02,03:02 SSP typing

Primer Mix	Size of spec. PCR product ¹	Size of control band ²	Amplified DQA1 alleles ³	Amplified DQB1 alleles ³
1	175 bp	430 bp	*02:01:01:01-02:01:02	
2	185 bp	515 bp	*03:01:01, 03:01:03-03:03:02	
3	165 bp	515 bp	*05:01:01:01-05:09, 05:11	
4 ⁴	90 bp, 200 bp	515 bp	*05:02-05:03, 05:04 [?] , 05:06-05:07	
5	205 bp	515 bp	*05:01:01:01-05:03, 05:05:01:01-05:09, 05:11	
6 ⁴	100 bp	515 bp	*05:02 [?] , 05:04 [?] , 05:05:01:01-05:05:01:08, 05:08-05:09, 05:10 [?] , 05:11	
7 ^{4,7}	80 bp	515 bp	*05:09	
8 ⁴	85 bp	430 bp	*02:01:01:01-02:01:02, 03:01:01, 03:01:03	
9	145 bp, 170 bp	430 bp	*01:01:01:01-01:15N	
10 ⁴	80 bp	515 bp	*05:02, 05:04-05:05:01:08, 05:08, 05:10-05:11	
11	210 bp	515 bp		*02:01:01-02:39, 02:41-02:71, 02:73-02:94
12 ⁶	140 bp	515 bp		*02:02:01:01-02:03, 02:06, 02:10-02:12, 02:26, 02:50, 02:62, 02:64-02:65
13	145 bp	515 bp		*02:01:01-02:01:24, 02:04-02:05, 02:07:01-02:09, 02:13-02:25, 02:27-02:47, 02:49, 02:51-02:61, 02:63, 02:66-02:79, 02:81-02:83, 02:85-02:88, 02:90-02:94, 03:01:01:01-03:23:02, 03:25:01-03:78, 03:80-03:96, 03:98-03:163, 03:166-03:263, 04:01:01-04:40, 05:01:01:01-05:02:10, 05:02:12-05:13, 05:15-05:83, 05:85-05:147, *06:01:01-06:37, 06:39-06:85, 06:87-06:101, 06:105-06:217, 06:219, 06:221-06:226, 06:228-06:236
14	135 bp	515 bp		*02:03, 02:77, 03:03:02:01-03:03:13, 03:06, 03:12, 03:15, 03:20, 03:25:01-03:26, 03:30-03:31, 03:33-03:34, 03:38-03:41, 03:43, 03:65, 03:74, 03:79, 03:86-03:91Q, 03:95N-03:99Q, 03:104-03:105, 03:111-03:113, 03:117, 03:123-03:124, 03:126, 03:136-03:137, 03:141, 03:145, 03:149, 03:155-03:156, 03:168, 03:176-03:177, 03:200,

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			03:209, 03:212, 03:222, 03:227, 03:230, 03:234, 03:238-03:239, 03:248-03:249, 03:258, DQB1*04:03:01-04:03:02, 06:03:10, 06:51:01, 06:66, 06:96, 06:168, 06:172
15	135 bp	515 bp	*02:01:01-02:01:06, 02:01:08-02:01:20, 02:01:22-02:02:04, 02:04-02:16, 02:18N-02:36, 02:38-02:76, 02:78-02:94, 03:02:01-03:02:09, 03:02:11-03:02:13, 03:02:15-03:02:24, 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, 03:106-03:107, 03:125, 03:146, 03:153, 03:161, 03:174-03:175, 03:178-03:179, 03:184-03:185, 03:189-03:190, 03:199, 03:203-03:205, 03:210-03:211, 03:213N-03:215, 03:220-03:221, 03:223-03:225, 03:228-03:229, 03:233, 03:237N, 03:240, 03:245, 03:247, 03:251, 03:261, 03:263, 06:29, 06:63, 06:123, 06:139
16⁴	105 bp	430 bp	*03:02:01-03:02:10, 03:02:12-03:03:04, 03:03:06-03:03:13, 03:06, 03:08, 03:11-03:12, 03:15, 03:18, 03:20, 03:23:02, 03:25:01-03:26, 03:30-03:34, 03:37-03:41, 03:43, 03:45, 03:62-03:63, 03:65-03:68, 03:70, 03:79, 03:81, 03:85-03:89, 03:91Q, 03:95N-03:99Q, 03:104-03:107, 03:110, 03:112, 03:117, 03:123-03:126, 03:136-03:137, 03:145-03:146, 03:149, 03:153, 03:155-03:156, 03:161, 03:168, 03:174-03:179, 03:185, 03:189-03:190, 03:200, 03:203-03:204, 03:209-03:213N, 03:215, 03:217, 03:221-03:225, 03:227-03:230, 03:233-03:234, 03:237N-03:239, 03:245, 03:247-03:249, 03:251, 03:258, 03:261, 03:263, 04:03:01-04:03:02, 06:02:05, 06:03:10, 06:03:26, 06:04:07, 06:19:01-06:19:02, 06:63, 06:87, 06:139, 06:168, 06:190:01
17	135 bp, 170 bp	515 bp	*03:04:01-03:04:03, 03:09, 03:11, 03:14:01-03:14:02, 03:80, 03:138
18⁵	145 bp, 185 bp	515 bp	*03:01:01-03:01:33, 03:01:35-03:103, 03:106-03:108, 03:110-03:153, 03:155-03:188, 03:190-03:257, 03:259-03:263, 04:01:03, 04:09
19	175 bp	430 bp	*03:06 [?] -03:08 [?] , 03:11 [?] -03:15 [?] , 03:17:01 [?] -03:18 [?] , 03:19:01-03:19:02, 03:20 [?] , 03:23:01 [?] -03:23:02 [?] , 03:25:02 [?] -03:26 [?] , 03:37 [?] , 03:40 [?] , 03:48 [?] , 03:52 [?] -03:71 [?] , 03:74 [?] -03:78 [?] , 03:81 [?] -03:82 [?] , 03:101 [?] -03:104 [?] , 03:106 [?] -03:112 [?] , 03:118N [?] , 03:120 [?] -03:131 [?] , 03:133 [?] -03:137 [?] , 03:140 [?] -03:149 [?] , 03:150, 03:151 [?] -03:163 [?] , 03:165 [?] -03:167 [?] , 03:170 [?] -03:179 [?] , 03:183 [?] -03:185 [?] , 03:187 [?] -03:189 [?] , 03:192 [?] -03:194 [?] , 03:201 [?] -

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20	220 bp	515 bp	03:205 [?] , 03:207 [?] -03:210 [?] , 03:212 [?] -03:221 [?] , 03:223 [?] -03:238 [?] , 03:240 [?] , 03:244, 03:255- 03:262
			*03:01:01:01-03:01:07, 03:01:09-03:01:33, 03:01:35-03:01:37, 03:04:01-03:04:03, 03:09-03:10:02, 03:13-03:14:02, 03:16, 03:19:01-03:19:02, 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, 03:73, 03:75- 03:77, 03:80, 03:82-03:84N, 03:92-03:94, 03:101-03:103, 03:108, 03:114-03:116, 03:118N-03:122, 03:127-03:131, 03:133- 03:135, 03:138-03:140, 03:142-03:144, 03:147-03:148, 03:150, 03:152, 03:157- 03:160, 03:162-03:167, 03:169-03:173, 03:180, 03:182-03:183, 03:186-03:188, 03:191-03:198, 03:201-03:202, 03:206- 03:208, 03:216, 03:218-03:219, 03:231- 03:232, 03:235-03:236, 03:241-03:243, 03:246, 03:252-03:257, 03:260
21	130 bp	515 bp	*03:02:01:01-03:02:24, 03:07-03:08, 03:11, 03:18, 03:32, 03:37, 03:45, 03:63-03:64, 03:66N-03:68, 03:70, 03:85, 03:106-03:107, 03:125, 03:146, 03:153, 03:161, 03:174- 03:175, 03:178-03:179, 03:184-03:185, 03:189-03:190, 03:199, 03:203-03:205, 03:210-03:211, 03:213N-03:215, 03:220- 03:221, 03:223-03:224, 03:228-03:229, 03:233, 03:237N, 03:240, 03:245, 03:247, 03:251, 03:261, 03:263, 06:29, 06:123, 06:139
22 ⁸	-	-	Negative control

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 DQA1 and DQB1 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. 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 internal positive control bands are 430 or 515 base pairs respectively, well distribution as outlined in the table. Well number 1 contains the shorter, 430 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.

³For several DQA1 and 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

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matched with the target sequences or not. Assumption is made that unknown sequences in these regions are conserved within allelic groups.

⁴HLA-specific PCR products shorter than 125 base pairs have a lower intensity and are less sharp than longer PCR products.

⁵The primer pair in well 18 will in some samples give rise to two HLA-specific PCR fragments and may give rise to a lower yield for the DQB1*03xx alleles.

⁶Primer mix 12 may have tendencies of unspecific amplification.

⁷Primer mix 7 may give rise to a lower yield of HLA-specific PCR product than the other

DQA1*02,05;DQB1*02,03:02 primer mixes.

⁸Primer mix 22 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 sequence.

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DQA1 PRIMER SPECIFICATION

Well No.	1	2	3	4	5	6	7	8	9	10
Length of spec. PCR product	175	185	165	90	205	100	80	85	145	80
Length of int. pos. control ¹	430	515	515	515	515	515	515	430	430	515
5'-primer(s) ²	7(90) 5'-CAC 3'	7(90) 5'-CAT 3'	34(169) 5'-AGC 3'	59(245) 5'-CCg 3'	21(131) 5'-TCC 3'	-14(31) 5'-ggA 3'	-14(31) 5'-ggA 3'	160(548) 5'-TgC 3'	25(143) 5'-gTA 3'	-14(31) 5'-ggA 3'
3'-primer(s) ³	52(224) 5'-TgT 3'	55(232) 5'-TCT 3'	75(293) 5'-gAC 3'	75(293) 5'-gAC 3'	75(293) 5'-gAC 3'	1 st I 5'-TgC 3'	1(70) 5'-TTT 3'	174(591) 5'-TCA 3'	69(274) 5'-TgC 3'	1(70) 5'-TTC 3'
Well No.	1	2	3	4	5	6	7	8	9	10

DQB1 PRIMER SPECIFICATION

Well No.	11	12	13	14	15	16	17	18	19	20	21
Length of spec. PCR product	210	140	145	135	135	105	135	145	175	220	130
Length of int. pos. control ¹	515	515	515	515	515	430	515	515	430	515	515
5'-primer(s) ²	30(184) 5'-gAg 3'	102(400) 5'-TCT 3'	135(500) 5'-TgA 3'	26(173) 5'-TCT 3'	26(173) 5'-TCT 3'	26(173) 5'-TCT 3'	14(136) 5'-gCC 3'	38(210) 5'-gCA 3'	140(516) 5'-ACC 3'	26(173) 5'-TTA 3'	28(179) 5'-gAC 3'
3'-primer(s) ³	86(353) 5'-gCT 3'	135(500) 5'-ggC 3'	170(604) 5'-gAC 3'	57(266) 5'-CgT 3'	57(266) 5'-Cgg 3'	47(237) 5'-CgA 3'	57(266) 5'-Cgg 3'	86(353) 5'-gCT 3'	185(650) 5'-CgA 3'	86(353) 5'-gCT 3'	57(266) 5'-Cgg 3'
Well No.	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 internal positive control bands are 430 or 515 base pairs respectively, well distribution as outlined in the table. Well number 1 contains the shorter, 430 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.

²The 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.

³The 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.



101.903-24 – including *Taq* polymerase, IFU-01

101.903-24u – without *Taq* polymerase, IFU-02

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Lot No.: **6F0**

Lot-specific information

CELL LINE VALIDATION SHEET														
DQA1*02,05;DQB1*02,03:02 typing kit ²														
					Well									
					1	2	3	4	5	6	7	8	9	10
				Prod. No.:	201784101	201549002	201784103	201784104	201784105	201784106	201784107	201784108	201784109	201784121
	IHWC cell line ¹		DQA1*											
1	9001	SA	*01:01		-	-	-	-	-	-	-	-	+	-
2	9280	LK707	*01:03	*03:03	-	+	-	-	-	-	-	-	+	-
3	9011	E4181324	*01:03		-	-	-	-	-	-	-	-	+	-
4	9275	GU373	*05:01		-	-	+	-	+	-	-	-	-	-
5	9009	KAS011	*01:02		-	-	-	-	-	-	-	-	+	-
6	9353	SM	*01:03	*03:01	-	+	-	-	-	-	-	+	+	-
7	9020	QBL	*05:01		-	-	+	-	+	-	-	-	-	-
8	9025	DEU	*03		-	+	-	-	-	-	-	-	-	-
9	9026	YAR	*03:01		-	+	-	-	-	-	-	+	-	-
10	9107	LKT3	*03:03		-	+	-	-	-	-	-	-	-	-
11	9051	PITOUT	*02:01		+	-	-	-	-	-	-	+	-	-
12	9052	DBB	*02:01		+	-	-	-	-	-	-	+	-	-
13	9004	JESTHOM	*01:01		-	-	-	-	-	-	-	-	+	-
14	9071	OLGA	*04:01		-	-	-	-	-	-	-	-	-	-
15	9075	DKB	*03:02		-	+	-	-	-	-	-	-	-	-
16	9037	SWEIG007	*05:05		-	-	+	-	+	+	-	-	-	+
17	9282	CTM3953540	*01:03	*05:01	-	-	+	-	+	-	-	-	+	-
18	9257	32367	*01:02	*03:03	-	+	-	-	-	-	-	-	+	-
19	9038	BM16	*05:05		-	-	+	-	+	+	-	-	-	+
20	9059	SLE005	*01:02		-	-	-	-	-	-	-	-	+	-
21	9064	AMALA	*05:03		-	-	+	+	+	-	-	-	-	-
22	9056	KOSE	*01:02	*01:04	-	-	-	-	-	-	-	-	+	-
23	9124	IHL	*01:03	*01:04	-	-	-	-	-	-	-	-	+	-
24	9035	JBUSH	*05:05		-	-	+	-	+	+	-	-	-	+
25	9049	IBW9	*02:01		+	-	-	-	-	-	-	+	-	-
26	9285	WT49	*05:01		-	-	+	-	+	-	-	-	-	-
27	9191	CH1007	*03:03	*01:05	-	+	-	-	-	-	-	-	+	-
28	9320	BEL5GB	*02:01	*03:03	+	+	-	-	-	-	-	+	-	-
29	9050	MOU	*02:01		+	-	-	-	-	-	-	+	-	-
30	9021	RSH	*04:01		-	-	-	-	-	-	-	-	-	-
31	9019	DUCAF	*05:01		-	-	+	-	+	-	-	-	-	-
32	9297	HAG	*05:05		-	-	+	-	+	+	-	-	-	+
33	9098	MT14B	*03:01		-	+	-	-	-	-	-	+	-	-
34	9104	DHIF	*05:05		-	-	+	-	+	+	-	-	-	+
35	9302	SSTO	*03:01		-	+	-	-	-	-	-	+	-	-
36	9024	KT17	*03:01		-	+	-	-	-	-	-	+	-	-
37	9065	HHKB	*01:03		-	-	-	-	-	-	-	-	+	-
38	9099	LZL	*05:03		-	-	+	+	+	-	-	-	-	-
39	9315	CML	*03:03	*05:01	-	+	+	-	+	-	-	-	-	-
40	9134	WHONP199	*02:01	*03:02	+	+	-	-	-	-	-	+	-	-
41	9055	H0301	*01:02		-	-	-	-	-	-	-	-	+	-
42	9066	TAB089	*01:03		-	-	-	-	-	-	-	-	+	-
43	9076	T7526	*03:02		-	+	-	-	-	-	-	-	-	-
44	9057	TEM	*01:04		-	-	-	-	-	-	-	-	+	-
45	9239	SHJO	*02:01	*03:03	+	+	-	-	-	-	-	+	-	-
46	9013	SCHU	*01:02		-	-	-	-	-	-	-	-	+	-
47	9045	TUBO	*05:05		-	-	+	-	+	+	-	-	-	+
48	9303	TER-ND	*01:01		-	-	-	-	-	-	-	-	+	-

101.903-24 – including *Taq* polymerase, IFU-01

101.903-24u – without *Taq* polymerase, IFU-02

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Lot No.: 6F0

Lot-specific information

CELL LINE VALIDATION SHEET																
DQA1*02,05;DQB1*02,03:02 typing kit ²																
					Well											
						11	12	13	14	15	16	17	18	19	20	21
				Production No.		201784110	201784111	201784112	201784113	201784114	201784115	201784116	201784117	201784118	201784119	201784120
	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	SWIEG007	*03:01		-	-	+	-	-	-	-	-	+	-	+	-
17	9282	CTM3953540	*02:01	*0603	+	-	+	-	+	-	-	-	-	-	-	-
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		-	-	+	-	-	-	-	-	-	-	-	-

101.903-24 – including *Taq* polymerase, IFU-01

101.903-24u – without *Taq* polymerase, IFU-02

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Lot No.: **6F0**

Lot-specific information

¹The 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.

²The 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.

In primer solutions 4, 11 and 21 one 5'-primer were not possible to test, and in primer solutions 16 to 18 and 21 one or two 3'-primers were not possible to test.

Additional primers in primer solutions 4 and 17 were tested by separately adding either one 5'-primer, or two 3'-primers.

101.903-24 – including *Taq* polymerase, IFU-01

101.903-24u – without *Taq* polymerase, IFU-02

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Lot No.: **6F0**

Lot-specific information

101.903-24 – including *Taq* polymerase, IFU-01
101.903-24u – without *Taq* polymerase, IFU-02

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“Instructions for Use” (IFU)

Lot No.: **6F0**

Lot-specific information

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