DQB1 high resolution for frequent alleles 101.221-12 – including *Taq* pol. Release Note

101.221-12u – without *Taq* pol.

Lot No.: **2F4**

Olerup SSP® DQB1 high resolution for frequent alleles

Product number: 101.221-12 – including *Taq* polymerase

101.221-12u - without *Taq* polymerase

Lot number: 2F4

Expiry date: 2020-01-01 Number of tests: 12 tests Number of wells per test: 95+ 1

CHANGES COMPARED TO THE PREVIOUS DQB1 HIGH RESOLUTION LOT (9D8):

Well	5'-primer	3'-primer	rationale		
5	Added	-	5'-primer added for the DQB1*05:106 allele.		
10	Modified	Modified	5'-and 3'-primers modified for the increased yield and		
			improved HLA-specific amplification.		
12	Added	Added	5'-primer added for the DQB1*06:210 allele, 3'-primer added		
			for the DQB1*03:239 allele.		
13	Added	-	5'-primer added for the DQB1*02:62 allele.		
15	-	Added	3'-primer added for the DQB1*02:78 allele.		
17	-	Added	3'-primers added for the DQB1*03:232 and DQB1*04:32 alleles.		
18	Added	-	5'-primer added for the DQB1*03:237N allele.		
25	-	Removed, added	3'-primer removed for decreased tendency of primer oligomer formation, 3'-primers added for the DQB1*05:03:14 and DQB1*05:128N allele.		
30	-	Added	3'-primer added for the DQB1*02:67N allele.		
33	Added	-	5'-primer added for the DQB1*03:199 allele.		
34	Added	-	5'-primer added for the DQB1*05:112 allele.		
35	Added	Added	5'-primer added for the DQB1*06:212 allele, 3'-primer added for the DQB1*05:103 allele.		
38	Added	Added	5'-primer added for the DQB1*06:194 allele, 3'-primer added for the DQB1*04:33 and DQB1*06:188 alleles.		
39	Added	Added, modified	5'-primers added for the DQB1*05:111 and DQB1*06:202 alleles, 3'-primer added for the DQB1*03:191 allele, 3'-primer modified for improved HLA-specific amplification.		
40	Added	-	5'-primers added for the DQB1*03:245 and DQB1*05:133 alleles.		
41	Removed	Added	5'-primer removed for improved HLA-specific amplification, 3'-primer added for the DQB1*03:212 allele.		
42	-	Added	3'-primer added for the DQB1*03:239 allele.		
44	-	Modified, added	3'-primer modified for decreased tendency of primer oligomer formation, 3'-primer added for the DQB1*03:191 allele.		
45	Added	Added	5'-primer added for the DQB1*06:212 allele, 3'-primers added for the DQB1*06:216N and DQB1*06:224 alleles.		
49	Added	-	5'-primer added for the DQB1*03:246 allele.		
50	Added	=	5'-primer added for the DQB1*03:201 allele.		
51	Modified, moved	Moved	5'-primer modified, 5'-primer moved to well 91 and 3'-primer moved to well 90 for decreased tendency of primer oligomer formation.		
54	-	Added	3'-primer added for the DQB1*04:36N allele.		
56	-	Added	3'-primer added for the DQB1*06:224 allele.		
58	-	Added	3'-primer added for the DQB1*03:228 allele.		
61	-	Added	3'-primer added for the DQB1*05:128N allele.		
62	Added	-	5'-primer added for the DQB1*03:205 allele.		



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66 Added - 5'-primer added for the DQB1*03:243 and DQB1*05:133 alleles. 67 Added - 5'-primer added for the DQB1*03:243 and DQB1*05:133 alleles. 68 Added, - 5'-primer added for the DQB1*03:225 allele, 5'-primers modified for improved HLA-specific amplification. 71 Added, Modified Exchanged Modified Primer added for the DQB1*03:207 allele, 5'-primer modified and 3'-primer exchanged for improved HLA-specific amplification and decreased tendency of primer oligomer formation. 72 Added Added S'-primer added for the DQB1*03:150 and DQB1*03:201 alleles, 3'-primer added for the DQB1*06:218 allele. 73 Added - 5'-primer added for the DQB1*06:218 allele. 74 - Added 3'-primer added for the DQB1*06:202 allele. 75 Added, Modified Modified, S'-and 3'-primer added for the DQB1*06:202 allele, 5'-primer modified for improved HLA-specific amplification, 3'-primer added for the DQB1*06:202 allele, 5'-primer modified for improved HLA-specific amplification, 3'-primer added for the DQB1*06:122 allele. 76 Modified Modified, S'-and 3'-primers modified for improved HLA-specific amplification, 3'-primer added for the DQB1*06:190:01 allele, 3'-primer modified for the DQB1*06:190:01 allele. 77 - Added Added S'-primer added for the DQB1*06:190:01 allele. 88 Added Added Primer pair added for the DQB1*06:217 allele. 89 Added - 5'-primer added for the DQB1*06:184 allele. 80 Added - 5'-primer added for the DQB1*06:184 allele. 81 Added - 5'-primer added for the DQB1*06:184 allele. 82 Added - 5'-primer added for the DQB1*06:184 allele. 83 Added - 5'-primer added for the DQB1*06:184 allele. 84 Added - 5'-primer added for the DQB1*06:184 allele. 85 Added - 5'-primer added for the DQB1*06:184 allele. 86 Added - 5'-primer added for the DQB1*06:184 allele. 87 Added - 5'-primer added for the DQB1*06:184 allele. 88 Added - 5'-primer added for the DQB1*06:184 allele. 99 - Added - 5'-primer added for the DQB1*06:184 allele. 90 - Added - 5'-primer added for the DQB1*06:184 allele. 91 Added - 5'-primer added for the DQB1*06:184 allele. 92 - Added - 5'-prime				
alleles. 67 Added 69 Added, modified 71 Added, modified 72 Added, modified 73 Added 74 Added 75 -primer added for the DQB1*03:225 allele, 5'-primer modified for improved HLA-specific amplification. 76 Added 77 Added 78 Added 79 Added 70 Added 70 Added 71 Added 70 Added 71 Added 71 Added 71 Added 72 Added 73 Added 74 - Added 75 -primer added for the DQB1*03:150 and DQB1*03:201 alleles, 3'-primer added for the DQB1*05:181 allele. 76 Added 77 - Added 78 Added 79 Added 70 Added 70 Added 71 Added 72 Added 73 Added 74 - Added 75 -primer added for the DQB1*06:218 allele. 75 Added 76 Modified 77 Added 78 Added 79 Added 79 Added 70 Added 70 Added 71 Added 72 Added 73 -primer added for the DQB1*06:190:01 allele, 3'-primer modified for improved HLA-specific amplification, 3'-primer modified for improved HLA-specific amplification. 78 Added 79 Added 79 Added 70 Added 71 Added 72 - Added 73 - primer added for the DQB1*06:190:01 allele, 3'-primer modified for improved HLA-specific amplification. 78 Added 79 Added 79 Added 70 - Added 71 - Added 72 - Frimer added for the DQB1*06:190:01 allele, 3'-primer added for the DQB1*06:190:01 allele. 79 Added 70 - Added 71 - Frimer added for the DQB1*06:187 allele. 79 Added 70 - Frimer added for the DQB1*06:187 allele. 70 Added 71 - Frimer added for the DQB1*06:184 allele. 71 - Added 72 - Frimer added for the DQB1*06:184 allele. 73 Added 74 - Frimer added for the DQB1*06:184 allele. 74 - Added 75 -Primer added for the DQB1*06:184 allele. 75 -Primer added for the DQB1*06:184 allele. 76 Added 77 - Frimer added for the DQB1*06:184 allele. 78 Added 80 Added 90 - Added 90 - Added 90 - Added 90 - Added 91 - Frimer added for the DQB1*06:184 allele. 90 - Added 91 - Frimer added for the DQB1*06:184 allele. 90 - Added 91 - Frimer added for the DQB1*06:184 allele. 90 - Added 91 - Frimer added for the DQB1*06:184 allele. 90 - Added 91 - Frimer added for the DQB1*06:184 allele. 91 Added 92 - Added 93 - Frimer added for the DQB1*06:184 allele. 93 - Frimer added for the DQB1*06:184	63	-	Added	3'-primer added for the DQB1*03:240 allele.
69 Added, modified 71 Added, modified 72 Added, modified 73 Added			-	alleles.
modified by the control of the part of the	67	Added	-	5'-primer added for the DQB1*02:26 allele.
modified modified and 3'-primer exchanged for improved HLA-specific amplification and decreased tendency of primer oligomer formation. 72 Added Added 5'-primers added for the DQB1*03:150 and DQB1*03:201 alleles, 3'-primer added for the DQB1*06:218 allele. 73 Added - 5'-primer added for the DQB1*05:97 allele. 75 Added, Added 5'-primer added for the DQB1*06:202 allele, 5'-primer modified for improved HLA-specific amplification, 3'-primer added for the DQB1*06:122 allele. 76 Modified Modified, 5'-and 3'-primer modified for improved HLA-specific amplification, 3'-primer added for the DQB1*06:122 allele. 77 - Added, 3'-primer added for the DQB1*06:190:01 allele, 3'-primer modified modified for improved HLA-specific amplification. 78 Added Added 5'-primer added for the DQB1*06:190:01 allele, 3'-primer modified for the DQB1*06:190:01 allele, 3'-primer added for the DQB1*06:232 allele, 3'-primer added for the DQB1*06:217 allele. 79 Added - 5'-primer added for the DQB1*06:217 allele. 84 Added Added Primer pair added for the DQB1*06:184 allele. 85 Added - 5'-primer added for the DQB1*06:184 allele. 86 Added, - 5'-primer added for the DQB1*06:184 allele. 87 Added - 5'-primer added for the DQB1*06:184 allele. 88 Added - 5'-primer added for the DQB1*06:184 allele. 89 - Added - 5'-primer added for the DQB1*06:184 allele. 90 - Added - 5'-primer added for the DQB1*06:184 allele. 91 Added - 5'-primer added for the DQB1*06:184 allele. 92 - Added - 5'-primer added for the DQB1*06:184 allele. 93 - Added - 5'-primer added for the DQB1*06:184 allele. 94 - 5'-primer added for the DQB1*06:184 allele. 95 - Primer added for the DQB1*06:184 allele. 96 - Added - 5'-primer added for the DQB1*06:217 allele, 5'-primer added for the DQB1*06:2184 allele.	69		-	modified for improved HLA-specific amplification.
alleles, 3'-primer added for the DQB1*06:218 allele. 73 Added - 5'-primer added for the DQB1*03:150 allele. 74 - Added 3'-primer added for the DQB1*05:97 allele. 75 Added, Added 5'-primer added for the DQB1*06:202 allele, 5'-primer modified modified modified for improved HLA-specific amplification, 3'-primer added for the DQB1*06:122 allele. 76 Modified Modified, 5'-and 3'-primers modified for improved HLA-specific amplification, 3'-primer added for the DQB1*06:53:02 allele. 77 - Added, 3'-primer added for the DQB1*06:190:01 allele, 3'-primer modified for improved HLA-specific amplification. 78 Added Added 5'-primer added for the DQB1*06:190:01 allele, 3'-primer added for the DQB1*06:187 allele. 79 Added Added Primer pair added for the DQB1*06:217 allele. 84 Added Added Primer pair added for the DQB1*06:184 allele. 85 Added - 5'-primer added for the DQB1*06:210 allele, 5'-primer modified modified for improved HLA-specific amplification. 86 Added, - 5'-primer added for the DQB1*06:210 allele, 5'-primer modified for improved HLA-specific amplification. 87 Added - 5'-primer added for the DQB1*06:184 allele. 90 - Added 3'-primer added for the DQB1*06:194 allele. 91 Added - 5'-primer added for the DQB1*06:195 allele, 3'-primer added from well 51 for decreased tendency of primer oligomer formation. 92 - Added 3'-primer added from well 51 for decreased tendency of primer oligomer formation.	71	•	Exchanged	modified and 3'-primer exchanged for improved HLA- specific amplification and decreased tendency of primer
74 - Added 3'-primer added for the DQB1*05:97 allele. 75 Added, Added 5'-primer added for the DQB1*06:202 allele, 5'-primer modified modified for improved HLA-specific amplification, 3'-primer added for the DQB1*06:122 allele. 76 Modified Modified, 5'-and 3'-primers modified for improved HLA-specific amplification, 3'-primer added for the DQB1*06:53:02 allele. 77 - Added, 3'-primer added for the DQB1*06:190:01 allele, 3'-primer modified modified for improved HLA-specific amplification. 78 Added Added 5'-primer added for the DQB1*06:190:01 allele, 3'-primer added for the DQB1*06:190:01 allele. 79 Added - 5'-primer added for the DQB1*06:187 allele. 84 Added Added Primer pair added for the DQB1*06:184 allele. 85 Added - 5'-primer added for the DQB1*06:10 allele, 5'-primer modified modified for improved HLA-specific amplification. 86 Added - 5'-primer added for the DQB1*06:184 allele. 87 Added - 5'-primer added for the DQB1*06:184 allele. 88 Added - 5'-primer added for the DQB1*06:184 allele. 89 - Added - 5'-primer added for the DQB1*03:247 allele, 3'-primer added from well 51 for decreased tendency of primer oligomer formation. 91 Added - 5'-primer added from well 51 for decreased tendency of primer oligomer formation. 92 - Added 3'-primer added for the DQB1*02:78 allele.	72	Added	Added	
75 Added, modified 5'-primer added for the DQB1*06:202 allele, 5'-primer modified for improved HLA-specific amplification, 3'-primer added for the DQB1*06:122 allele. 76 Modified Modified, added 3'-primers modified for improved HLA-specific amplification, 3'-primer added for the DQB1*06:53:02 allele. 77 - Added, 3'-primer added for the DQB1*06:190:01 allele, 3'-primer modified for improved HLA-specific amplification. 78 Added Added 5'-primer added for the DQB1*02:232 allele, 3'-primer added for the DQB1*06:190:01 allele. 79 Added - 5'-primer added for the DQB1*06:217 allele. 84 Added Added Primer pair added for the DQB1*06:217 allele. 85 Added - 5'-primer added for the DQB1*06:210 allele, 5'-primer modified modified for improved HLA-specific amplification. 86 Added, - 5'-primer added for the DQB1*06:184 allele. 87 Added - 5'-primer added for the DQB1*06:184 allele. 88 Added - 5'-primer added for the DQB1*06:184 allele. 90 - Added - 5'-primer added for the DQB1*03:247 allele, 3'-primer added from well 51 for decreased tendency of primer oligomer formation. 91 Added - 5'-primer added from well 51 for decreased tendency of primer oligomer formation. 92 - Added 3'-primer added for the DQB1*02:78 allele.	73	Added	-	5'-primer added for the DQB1*03:150 allele.
modified modified for improved HLA-specific amplification, 3'-primer added for the DQB1*06:122 allele. 76 Modified Modified, added amplification, 3'-primers modified for improved HLA-specific amplification, 3'-primer added for the DQB1*06:53:02 allele. 77 - Added, 3'-primer added for the DQB1*06:190:01 allele, 3'-primer modified for improved HLA-specific amplification. 78 Added Added 5'-primer added for the DQB1*02:232 allele, 3'-primer added for the DQB1*06:190:01 allele. 79 Added - 5'-primer added for the DQB1*06:187 allele. 84 Added Added Primer pair added for the DQB1*06:217 allele. 85 Added - 5'-primer added for the DQB1*06:184 allele. 86 Added, 5'-primer added for the DQB1*06:210 allele, 5'-primer modified modified for improved HLA-specific amplification. 87 Added - 5'-primer added for the DQB1*06:184 allele. 90 - Added 3'-primer added for the DQB1*03:247 allele, 3'-primer added from well 51 for decreased tendency of primer oligomer formation. 91 Added - 5'-primer added from well 51 for decreased tendency of primer oligomer formation. 92 - Added 3'-primer added for the DQB1*02:78 allele.	74	-	Added	3'-primer added for the DQB1*05:97 allele.
added amplification, 3'-primer added for the DQB1*06:53:02 allele. 77 - Added, 3'-primer added for the DQB1*06:190:01 allele, 3'-primer modified for improved HLA-specific amplification. 78 Added Added 5'-primer added for the DQB1*02:232 allele, 3'-primer added for the DQB1*06:190:01 allele. 79 Added - 5'-primer added for the DQB1*06:187 allele. 84 Added Added Primer pair added for the DQB1*06:217 allele. 85 Added - 5'-primer added for the DQB1*06:210 allele. 86 Added, - 5'-primer added for the DQB1*06:210 allele, 5'-primer modified modified for improved HLA-specific amplification. 87 Added - 5'-primer added for the DQB1*06:184 allele. 90 - Added 3'-primer added for the DQB1*03:247 allele, 3'-primer added from well 51 for decreased tendency of primer oligomer formation. 91 Added - 5'-primer added from well 51 for decreased tendency of primer oligomer formation. 92 - Added 3'-primer added for the DQB1*02:78 allele.	75	•	Added	modified for improved HLA-specific amplification, 3'-primer
modified modified for improved HLA-specific amplification. Added 5'-primer added for the DQB1*02:232 allele, 3'-primer added for the DQB1*06:190:01 allele. Added - 5'-primer added for the DQB1*06:187 allele. Added Added Primer pair added for the DQB1*06:217 allele. Added - 5'-primer added for the DQB1*06:184 allele. Added - 5'-primer added for the DQB1*06:210 allele, 5'-primer modified for improved HLA-specific amplification. Added - 5'-primer added for the DQB1*06:184 allele. Added - 5'-primer added for the DQB1*06:184 allele. Added - 5'-primer added for the DQB1*03:247 allele, 3'-primer added from well 51 for decreased tendency of primer oligomer formation. Added - 5'-primer added from well 51 for decreased tendency of primer oligomer formation. Added - 5'-primer added from well 51 for decreased tendency of primer oligomer formation.	76	Modified	•	
for the DQB1*06:190:01 allele. 79 Added - 5'-primer added for the DQB1*06:187 allele. 84 Added Added Primer pair added for the DQB1*06:217 allele. 85 Added - 5'-primer added for the DQB1*06:184 allele. 86 Added, - 5'-primer added for the DQB1*06:210 allele, 5'-primer modified for improved HLA-specific amplification. 87 Added - 5'-primer added for the DQB1*06:184 allele. 90 - Added 3'-primer added for the DQB1*03:247 allele, 3'-primer added from well 51 for decreased tendency of primer oligomer formation. 91 Added - 5'-primer added from well 51 for decreased tendency of primer oligomer formation. 92 - Added 3'-primer added for the DQB1*02:78 allele.	77	-	,	
Added Added Primer pair added for the DQB1*06:217 allele. Added - 5'-primer added for the DQB1*06:184 allele. Added, - 5'-primer added for the DQB1*06:210 allele, 5'-primer modified modified for improved HLA-specific amplification. Added - 5'-primer added for the DQB1*06:184 allele. Added - 5'-primer added for the DQB1*03:247 allele, 3'-primer added from well 51 for decreased tendency of primer oligomer formation. Added - 5'-primer added from well 51 for decreased tendency of primer oligomer formation. Added - 5'-primer added from well 51 for decreased tendency of primer oligomer formation.	78	Added	Added	
Added - 5'-primer added for the DQB1*06:184 allele. Added, - 5'-primer added for the DQB1*06:210 allele, 5'-primer modified modified for improved HLA-specific amplification. Added - 5'-primer added for the DQB1*06:184 allele. Added - 5'-primer added for the DQB1*03:247 allele, 3'-primer added from well 51 for decreased tendency of primer oligomer formation. Added - 5'-primer added from well 51 for decreased tendency of primer oligomer formation. Added - 5'-primer added from well 51 for decreased tendency of primer oligomer formation.	79	Added	-	5'-primer added for the DQB1*06:187 allele.
86 Added, - 5'-primer added for the DQB1*06:210 allele, 5'-primer modified modified for improved HLA-specific amplification. 87 Added - 5'-primer added for the DQB1*06:184 allele. 90 - Added 3'-primer added for the DQB1*03:247 allele, 3'-primer added from well 51 for decreased tendency of primer oligomer formation. 91 Added - 5'-primer added from well 51 for decreased tendency of primer oligomer formation. 92 - Added 3'-primer added for the DQB1*02:78 allele.	84	Added	Added	Primer pair added for the DQB1*06:217 allele.
modified modified for improved HLA-specific amplification. 87 Added - 5'-primer added for the DQB1*06:184 allele. 90 - Added 3'-primer added for the DQB1*03:247 allele, 3'-primer added from well 51 for decreased tendency of primer oligomer formation. 91 Added - 5'-primer added from well 51 for decreased tendency of primer oligomer formation. 92 - Added 3'-primer added for the DQB1*02:78 allele.	85	Added	-	5'-primer added for the DQB1*06:184 allele.
90 - Added 3'-primer added for the DQB1*03:247 allele, 3'-primer added from well 51 for decreased tendency of primer oligomer formation. 91 Added - 5'-primer added from well 51 for decreased tendency of primer oligomer formation. 92 - Added 3'-primer added for the DQB1*02:78 allele.	86	•	-	
from well 51 for decreased tendency of primer oligomer formation. 91 Added - 5'-primer added from well 51 for decreased tendency of primer oligomer formation. 92 - Added 3'-primer added for the DQB1*02:78 allele.	87	Added	-	5'-primer added for the DQB1*06:184 allele.
primer oligomer formation. 92 - Added 3'-primer added for the DQB1*02:78 allele.	90	-	Added	from well 51 for decreased tendency of primer oligomer
92 - Added 3'-primer added for the DQB1*02:78 allele.	91	Added	-	
	92	-	Added	
	94	Modified	-	

THE NUMBER OF WELLS is unchanged.

ALLELE COVERAGE:

All the currently recognized DQB1 alleles give rise to unique amplification patterns^{1,2}; www.ebi.ac.uk/imgt/hla, 2017-January-20, release 3.27.0.



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The following DQB1 alleles can be distinguished by the different sizes of the specific PCR product:

Alleles	Primer mix	Alleles	Primer mix
DQB1*02:15, 02:30	67	DQB1*05:13, 05:24	59
DQB1*02:16, 02:20N	64	DQB1*05:17, 05:47	54
DQB1*02:23, 02:28	68	DQB1*05:25, 05:112	34
DQB1*02:29, 02:31	69	DQB1*06:02:04, 06:02:16	47
DQB1*03:31, 03:87	35	DQB1*06:02:19, 06:48	62
DQB1*03:35, 03:246	49	DQB1*06:31, 06:145	35
DQB1*03:59, 03:71	43	DQB1*06:35, 06:45	35
DQB1*03:66N, 03:224	42	DQB1*06:70, 06:76	80
DQB1*03:116, 03:243	66	DQB1*06:75N, 06:80	84
DQB1*04:05, 04:15	30	DQB1*06:102N, 06:104 90	90
DQB1*05:10, 05:23	54		

¹Alleles 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.

RESOLUTION IN DQB1 HOMOZYGOTES AND HETEROZYGOTES: Very good.

MODIFICATIONS MADE DUE TO COMMENTS FROM CUSTOMERS:

In primer mix 94, a 5'-primer was modified for increased yield.



²The DQB1 high primer set cannot separate the DQB1*05:03:14 from the DQB1*05:43:01 alleles. These alleles can be distinguished by the DQB1*05 kit.