Olerup SSP[®] DQB1 high resolution for frequent alleles

Product number:	101.221-12 – including <i>Taq</i> polymerase
	101.221-12u – without <i>Taq</i> polymerase
Lot number:	2F4
Expiry date:	2021-07-01
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,	3'-primer removed for decreased tendency of primer	
		added	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.	

LERUP SSP^{*}

DQB1 high resolution for frequent alleles 101.221-12 – including *Taq* pol. Release Note 101.221-12u – without *Taq* pol. Lot No.: **2F4**

63 - Added 3'-primer added for the DQB1'03:240 allele. 66 Added - 5'-primers added for the DQB1'03:243 and DQB1'05:133 alleles. 67 Added - 5'-primer added for the DQB1'02:26 allele. 69 Added, - 5'-primer added for the DQB1'02:26 allele. 69 Added, - 5'-primer added for the DQB1'03:226 allele. 69 Added, - 5'-primer added for the DQB1'03:226 allele. 71 Added, Exchanged 5'-primer added for the DQB1'03:207 allele. 72 Added Added 5'-primer added for the DQB1'03:150 and DQB1'03:201 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 DQB1'06:120 allele. 76 Modified Modified, 5'-and 3'-primer added for the DQB1'06:130 allele. 77 - Added, 3'-primer added for the DQB1'06:120 allele. 78 Added Added, 5'-primer added for the DQB1'06:100 allele. 77 - Added, 5'-pri				
alleles. 67 Added - 5'-primer added for the DQB1*02:26 allele. 69 Added, - 5'-primer added for the DQB1*03:225 allele, 5'-primers modified for improved HLA-specific amplification. 71 Added, modified Exchanged 5'-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 5'-primers added for the DQB1*03:150 and DQB1*03:201 alleles, 3'-primer added for the DQB1*03:150 allele. 73 Added - 5'-primer added for the DQB1*03:150 allele. 74 - Added 3'-primer added for the DQB1*03:201 allele. 75 Added - 5'-primer added for the DQB1*03:150 allele. 74 - Added 3'-primer added for the DQB1*06:27 allele. 75 Added, added 5'-primer added for the DQB1*06:20 allele, 5'-primer added for the DQB1*06:122 allele. 76 Modified Modified, added 5'-primer added for the DQB1*06:190:01 allele, 3'-primer modified for improved HLA-specific amplification. 77 - Added 3'-primer added for the DQB1*06:192 allele. 77 - Added 5'-primer added for the DQB1*06:192 allele.	63	-	Added	
69 Added, modified - 5'-primer added for the DQB1*03:225 allele, 5'-primers modified for improved HLA-specific amplification. 71 Added, modified Exchanged 5'-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 5'-primer added for the DQB1*03:150 and DQB1*03:201 alleles, 3'-primer added for the DQB1*03:150 allele. 73 Added - 5'-primer added for the DQB1*03:150 allele. 74 - Added 3'-primer added for the DQB1*03:150 allele. 75 Added, modified Added 5'-primer added for the DQB1*06:22 allele, 5'-primer modified for improved HLA-specific amplification, 3'-primer added for the DQB1*06:122 allele. 76 Modified Modified, added 5'-primer added for the DQB1*06:122 allele. 77 - Added, added 3'-primer added for the DQB1*06:120 allele, 3'-primer modified for improved HLA-specific amplification. 78 Added Added 5'-primer added for the DQB1*06:122 allele. 79 Added - 5'-primer added for the DQB1*06:217 allele. 86 Added - 5'-primer added for the DQB1*06:217 allele. 87 Added -			-	alleles.
modifiedmodified for improved HLA-specific amplification.71Added, modifiedExchanged5'-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.72AddedAdded5'-primer added for the DQB1*03:150 and DQB1*03:201 alleles, 3'-primer added for the DQB1*06:218 allele.73Added-5'-primer added for the DQB1*05:150 allele.74-Added3'-primer added for the DQB1*05:202 allele, 5'-primer modified75Added, modifiedAdded3'-primer added for the DQB1*06:202 allele, 5'-primer added for the DQB1*06:122 allele.76ModifiedModified, added5'-and 3'-primer added for the DQB1*06:53:02 allele.77-Added3'-primer added for the DQB1*06:190:01 allele, 3'-primer modified for improved HLA-specific added for the DQB1*06:190:01 allele, 3'-primer modified for improved HLA-specific amplification.78AddedAdded5'-primer added for the DQB1*06:187 allele.79Added-5'-primer added for the DQB1*06:187 allele.84AddedAddedPrimer pair added for the DQB1*06:217 allele.85Added-5'-primer added for the DQB1*06:187 allele.86Added-5'-primer added for the DQB1*06:184 allele.87Added-5'-primer added for the DQB1*06:184 allele.86Added- </td <td>67</td> <td>Added</td> <td>-</td> <td></td>	67	Added	-	
modifiedmodified and 3'-primer exchanged for improved HLA- specific amplification and decreased tendency of primer oligomer formation.72AddedAdded5'-primers added for the DQB1*03:150 and DQB1*03:201 alleles, 3'-primer added for the DQB1*06:218 allele.73Added-5'-primer added for the DQB1*05:97 allele.74-Added3'-primer added for the DQB1*06:202 allele, 5'-primer modified75Added, modifiedAdded5'-primer added for the DQB1*06:202 allele, 5'-primer modified for the DQB1*06:122 allele.76ModifiedModified, added5'-and 3'-primers modified for improved HLA-specific added for the DQB1*06:122 allele.77-Added, modified3'-primer added for the DQB1*06:190:01 allele, 3'-primer modified for improved HLA-specific amplification.78AddedAddedS'-primer added for the DQB1*06:190:01 allele, 3'-primer modified79Added-5'-primer added for the DQB1*06:187 allele.79Added-5'-primer added for the DQB1*06:187 allele.86Added-5'-primer added for the DQB1*06:187 allele.87Added-5'-primer added for the DQB1*06:184 allele.80Added-5'-primer added for the DQB1*06:184 allele.80Added-5'-primer added for the DQB1*06:184 allele.81Added-5'-primer added for the DQB1*06:184 allele.82Added-5'-primer added for the DQB1*06:184 allele.84Added-5'-primer added for the DQB1*06:184 allele. <td>69</td> <td></td> <td>-</td> <td>modified for improved HLA-specific amplification.</td>	69		-	modified for improved HLA-specific amplification.
Added-Si-primer added for the DQB1*06:218 allele.73Added-Si-primer added for the DQB1*03:150 allele.74-Added3'-primer added for the DQB1*05:97 allele.75Added, modifiedAdded5'-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.76ModifiedModified, added5'-animer modified for improved HLA-specific amplification, 3'-primer added for the DQB1*06:53:02 allele.77-Added, added3'-primer added for the DQB1*06:190:01 allele, 3'-primer modified for improved HLA-specific amplification.78AddedAddedS'-primer added for the DQB1*06:190:01 allele, of the DQB1*06:190:01 allele.79AddedAddedS'-primer added for the DQB1*06:197 allele.79Added-S'-primer added for the DQB1*06:187 allele.86Added-S'-primer added for the DQB1*06:217 allele.86Added, added, added-S'-primer added for the DQB1*06:184 allele.90-Added-S'-primer added for the DQB1*06:184 allele.90-Added-S'-primer added for the DQB1*06:184 allele.91Added-S'-primer added for the DQB1*06:184 allele.92-Added3'-primer added for the DQB1*02:178 allele.	71	,	Exchanged	modified and 3'-primer exchanged for improved HLA- specific amplification and decreased tendency of primer
74-Added3'-primer added for the DQB1*05:97 allele.75Added, modifiedAdded5'-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.76ModifiedModified, 	72	Added	Added	
75Added, modifiedAdded5'-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.76Modified added5'-and 3'-primers modified for improved HLA-specific amplification, 3'-primer added for the DQB1*06:53:02 allele.77-Added, modified3'-primer added for the DQB1*06:190:01 allele, 3'-primer modified for improved HLA-specific amplification.78AddedAdded5'-primer added for the DQB1*02:232 allele, 3'-primer added for the DQB1*06:190:01 allele.79Added-5'-primer added for the DQB1*06:217 allele.84AddedAddedPrimer pair added for the DQB1*06:210 allele, 5'-primer modified85Added-5'-primer added for the DQB1*06:210 allele, 5'-primer modified for improved HLA-specific amplification.87Added-5'-primer added for the DQB1*06:210 allele, 5'-primer modified for improved HLA-specific amplification.87Added-5'-primer added for the DQB1*06:210 allele, 3'-primer modified for improved HLA-specific amplification.87Added-5'-primer added for the DQB1*06:184 allele.90-Added3'-primer added for the DQB1*03:247 allele, 3'-primer added from well 51 for decreased tendency of primer oligomer formation.91Added-5'-primer added from well 51 for decreased tendency of primer oligomer formation.92-Added3'-primer added for the DQB1*02:78 allele.	73	Added	-	5'-primer added for the DQB1*03:150 allele.
modifiedmodified for improved HLA-specific amplification, 3'-primer added for the DQB1*06:122 allele.76Modified added5'-and 3'-primers modified for improved HLA-specific amplification, 3'-primer added for the DQB1*06:53:02 allele.77-Added, modified3'-primer added for the DQB1*06:190:01 allele, 3'-primer modified for improved HLA-specific amplification.78AddedAdded5'-primer added for the DQB1*02:232 allele, 3'-primer added for the DQB1*06:190:01 allele.79Added-5'-primer added for the DQB1*06:187 allele.84AddedAddedPrimer pair added for the DQB1*06:187 allele.85Added-5'-primer added for the DQB1*06:217 allele.86Added-5'-primer added for the DQB1*06:210 allele, 5'-primer modified87Added-5'-primer added for the DQB1*06:210 allele, 5'-primer modified for improved HLA-specific amplification.87Added-5'-primer added for the DQB1*06:210 allele, 5'-primer modified for improved HLA-specific amplification.80-Added3'-primer added for the DQB1*06:210 allele, 5'-primer modified for improved HLA-specific amplification.87Added-5'-primer added for the DQB1*06:210 allele, 5'-primer modified for improved HLA-specific amplification.90-Added-91Added-92-Added3'-primer added for the DQB1*02:78 allele.	74	-	Added	3'-primer added for the DQB1*05:97 allele.
addedamplification, 3'-primer added for the DQB1*06:53:02 allele.77-Added, modified3'-primer added for the DQB1*06:190:01 allele, 3'-primer modified for improved HLA-specific amplification.78AddedAdded5'-primer added for the DQB1*02:232 allele, 3'-primer added for the DQB1*06:190:01 allele.79Added-5'-primer added for the DQB1*06:187 allele.84AddedAddedPrimer pair added for the DQB1*06:217 allele.85Added-5'-primer added for the DQB1*06:210 allele, 5'-primer modified86Added,-5'-primer added for the DQB1*06:210 allele, 5'-primer modified for improved HLA-specific amplification.87Added-5'-primer added for the DQB1*06:184 allele.90-Added3'-primer added for the DQB1*03:247 allele, 3'-primer added from well 51 for decreased tendency of primer oligomer formation.91Added-5'-primer added for the DQB1*02:78 allele.92-Added3'-primer added for the DQB1*02:78 allele.	75	,	Added	modified for improved HLA-specific amplification, 3'-primer
modifiedmodified for improved HLA-specific amplification.78AddedAdded5'-primer added for the DQB1*02:232 allele, 3'-primer added for the DQB1*06:190:01 allele.79Added-5'-primer added for the DQB1*06:187 allele.84AddedAddedPrimer pair added for the DQB1*06:217 allele.85Added-5'-primer added for the DQB1*06:210 allele, 5'-primer86Added,-5'-primer added for the DQB1*06:210 allele, 5'-primer modified87Added-5'-primer added for the DQB1*06:184 allele.90-Added3'-primer added for the DQB1*03:247 allele, 3'-primer added from well 51 for decreased tendency of primer oligomer formation.91Added-5'-primer added for the DQB1*03:247 allele, 3'-primer added from well 51 for decreased tendency of primer oligomer formation.92-Added3'-primer added for the DQB1*02:78 allele.	76	Modified		
for the DQB1*06:190:01 allele.79Added-5'-primer added for the DQB1*06:187 allele.84AddedAddedPrimer pair added for the DQB1*06:217 allele.85Added-5'-primer added for the DQB1*06:184 allele.86Added, modified-5'-primer added for the DQB1*06:210 allele, 5'-primer modified for improved HLA-specific amplification.87Added-5'-primer added for the DQB1*06:184 allele.90-Added3'-primer added for the DQB1*06:184 allele.90-Added3'-primer added for the DQB1*03:247 allele, 3'-primer added from well 51 for decreased tendency of primer oligomer formation.91Added-5'-primer added for the DQB1*02:78 allele.92-Added3'-primer added for the DQB1*02:78 allele.	77	-	,	
84AddedAddedPrimer pair added for the DQB1*06:217 allele.85Added-5'-primer added for the DQB1*06:184 allele.86Added, modified-5'-primer added for the DQB1*06:210 allele, 5'-primer modified for improved HLA-specific amplification.87Added-5'-primer added for the DQB1*06:184 allele.90-Added3'-primer added for the DQB1*06:184 allele.90-Added3'-primer added for the DQB1*03:247 allele, 3'-primer added from well 51 for decreased tendency of primer oligomer formation.91Added-5'-primer added from well 51 for decreased tendency of primer oligomer formation.92-Added3'-primer added for the DQB1*02:78 allele.	78	Added	Added	
85Added-5'-primer added for the DQB1*06:184 allele.86Added, modified-5'-primer added for the DQB1*06:210 allele, 5'-primer modified for improved HLA-specific amplification.87Added-5'-primer added for the DQB1*06:184 allele.90-Added3'-primer added for the DQB1*06:184 allele.90-Added3'-primer added for the DQB1*03:247 allele, 3'-primer added from well 51 for decreased tendency of primer oligomer formation.91Added-5'-primer added from well 51 for decreased tendency of primer oligomer formation.92-Added3'-primer added for the DQB1*02:78 allele.	79	Added	-	5'-primer added for the DQB1*06:187 allele.
86 Added, modified - 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.	84	Added	Added	Primer pair added for the DQB1*06:217 allele.
modifiedmodified for improved HLA-specific amplification.87Added-90-Added90-Added91Added-92-Added92-Added93-Added94-95-96-97-98-99-90-91-92-92-93-94-95-96-97-98-99-90-91-92-92-93-94-95-96-97-98-99-90-91-92-92-93-94-94-95-96-97-97-98-98-99-99-90-90-91-92-92-93-94-94-95-96-97-97-<	85	Added	-	5'-primer added for the DQB1*06:184 allele.
90-Added3'-primer added for the DQB1*03:247 allele, 3'-primer added from well 51 for decreased tendency of primer oligomer formation.91Added-5'-primer added from well 51 for decreased tendency of primer oligomer formation.92-Added3'-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.
92-Added3'-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	-	5'-primer modified for increased yield.

THE NUMBER OF WELLS is unchanged.

ALLELE COVERAGE:

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

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
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 <u>http://hla.alleles.org/alleles/deleted.html</u>.

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.

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.

Change in revision R01 compared to R00:

1. The expiration date has been altered due to extension of shelf-life.