

**Minnesota Health**  
 420 Delaware St. SE Minneapolis, MN 55455  
 HLA/Immunology Laboratory  
 Directors: David Maurer, PhD D(ABHI); Gizem Tumer, MD, Director; Claudia Cohn, MD  
 Carolynn Scalf, General Supervisor  
 Phone: 612-273-3100  
 ASHI: 08-4-MN-01-1  
 CLIA UMMC: 24D0688128 CLIA Outreach 24D0995276

### TEST INFO

Sample Date:	Amp Tech:	Kit Lot #: <b>K3641-CR</b>
Sample ID: <b>1813264</b>	Analysis Tech:	Test Date: <b>10/17/2018</b>
Patient ID: <b>AFJQ146</b>	Review Tech:	

### SUMMARY

This session includes tests for A, B, C, DR, DQA, DQB, DPA and DPB

TEST	GENOTYPE	PHENOTYPE	TEST	GENOTYPE	PHENOTYPE
HLA-A	A*30 A*36	A30 A36	HLA-C	C*07 C*07	Cw7 Cw7
HLA-B	B*07 B*49	B7 B49	Bw		Bw4 Bw6
HLA-DRB1	DRB1*08 DRB1*11	DR8 DR11	HLA-DRB345	DRB3*02	DR52
HLA-DQA1	DQA1*05 DQA1*05	DQA1*05 DQA1*05	HLA-DQB1	DQB1*03 DQB1*03	DQ7 DQ7
HLA-DPA1	DPA1*02 DPA1*03	DPA1*02 DPA1*03			

EPITYPE	ALLELES	HVR-A	HVR-B	HVR-C	HVR-D	HVR-E	HVR-F
<b>EDP01</b>	<b>DPB1* 01:01:01:01, 01:01:02:01</b> (+21 rare alleles)	VYQG	EEYA	AAE	ILEEK	V	DEAV
<b>EDP40</b>	(1 rare alleles)	LFQG	EEYA	AAE	ILEEK	M	VGPM
<i>One side of this epitope requires a RARE allele, review results to confirm assignment.            This epitope was MANUALLY chosen.</i>							

The HLA-DPB1 test result requires a RARE allele assignment.

(Notice: Cannot exclude other combinations. Review all results.)  
 All test results are based on IMGT/HLA release: version 3.29.0 - July 2017

For research use only. Not for use in diagnostic procedures.

## LABORATORY ASSIGNMENT

HLA-A: **A30 A36**  
HLA-C: **Cw7 Cw7**  
HLA-DQA1: **DQA1\*05 DQA1\*05**  
HLA-DPA1: **DPA1\*02 DPA1\*03**

HLA-B: **B7 B49**  
HLA-DRB1: **DR8 DR11**  
HLA-DQB1: **DQ7 DQ7**  
HLA-DPB1: **DPB1\*01:01**  
**DPB1\*40:01**

Bw: **Bw4 Bw6**  
HLA-DRB345: **DR52**

## HLA-A

GROUP	ALLELES	ANTIGEN
<b>A*30</b>	<b>A* 30:01:01, 30:02:01:01, 30:04:01;</b> <i>A* 30:15d;</i> A* 30:01:02e-30:01:11e, 30:02:01:02e-30:02:09e, 30:02:11e-30:02:19e, 30:04:02e, 30:14Le, 30:17e-30:18e	<b>A30</b>
	<i>A* 30:08d-30:10d, 30:16d;</i> A* 30:06e, 30:12e-30:13e, 30:19e-30:20e, 30:23e-30:25e, 30:27Ne-30:51e, 30:53e-30:54e, 30:56e-30:60e, 30:62e-30:70Ne, 30:72e-30:73Ne, 30:75e-30:88e, 30:90e-30:98e, 30:100e-30:119e	-
<b>A*36</b>	<b>A* 36:01;</b> <i>A* 36:04d</i>	<b>A36</b>
	<i>A* 36:02d;</i> A* 36:05e	-
<i>This genotype was MANUALLY chosen.</i>		
<b>This genotype was chosen as the most likely; cannot exclude one or more rare genotypes.</b>		

## HLA-B

GROUP	ALLELES	ANTIGEN
<b>B*07</b>	<b>B* 07:02:01:01;</b> <i>B* 07:09d, 07:15d, 07:26d, 07:46d;</i> B* 07:02:01:02e-07:02:10e, 07:02:12e-07:02:25e, 07:02:27e-07:02:52e, 07:11e, 07:17e, 07:30e, 07:57e-07:58e	<b>B7</b>
	B* 07:49Ne	Null
	<i>B* 07:20d, 07:23d, 07:42d;</i> B* 07:21e-07:22e, 07:28e, 07:35e, 07:39e, 07:41e, 07:44Ne-07:45e, 07:47e, 07:52e, 07:54e-07:55e, 07:59e, 07:61e-07:64e, 07:66e-07:67Ne, 07:68:03e, 07:70e-07:71e, 07:74e, 07:76e, 07:82e, 07:87e-07:89e, 07:92e-07:96e, 07:98e-07:99e, 07:101e-07:104e, 07:106e-07:111Ne, 07:113e-07:114e, 07:116e-07:122e, 07:124e-07:130e, 07:132e-07:133e, 07:135Ne-07:136e, 07:139e, 07:141e-07:145e, 07:147e-07:148e, 07:150e-07:161Ne, 07:165e-07:175e, 07:177e-07:179e, 07:181Ne, 07:184e-07:192e, 07:194e, 07:196e, 07:198e-07:200e, 07:203e, 07:205e, 07:208e, 07:211e-07:212e, 07:215e-07:217e, 07:221e, 07:224e, 07:229e-07:234e, 07:238e, 07:240e-07:247e, 07:250e-07:254e, 07:256e-07:257e, 07:259e, 07:263e, 07:265e-07:268e, 07:271e-07:272Ne, 07:274e-07:277e, 07:280e-07:282e, 07:285Ne-07:286e, 07:288e-07:292e, 07:294e-07:296e	-
<b>B*49</b>	<b>B* 49:01:01:01;</b> B* 49:01:01:02e-49:01:10e	<b>B49</b>
	B* 49:06e-49:10e, 49:12e-49:17e, 49:19Ne, 49:21e-49:24e, 49:27e-49:30e, 49:32e-49:41e, 49:43e-49:44e, 49:46e-49:48e	-
	ALLELES	ANTIGEN
<b>Bw4</b>	<b>B* 49:01:01:01;</b> B* 49:01:01:02e-49:01:10e, 49:06e-49:10e, 49:12e-49:17e, 49:19Ne, 49:21e-49:24e, 49:27e-49:30e, 49:32e-49:41e, 49:43e-49:44e, 49:46e-49:48e	<b>Bw4</b>

	ALLELES	ANTIGEN
<b>Bw6</b>	<b>B* 07:02:01:01;</b> <i>B* 07:09d, 07:15d, 07:20d, 07:23d, 07:26d, 07:42d, 07:46d;</i> <b>B* 07:02:01:02e-07:02:10e, 07:02:12e-07:02:25e, 07:02:27e-07:02:52e, 07:11e, 07:17e, 07:21e-07:22e, 07:28e, 07:30e, 07:35e, 07:39e, 07:41e, 07:44Ne-07:45e, 07:47e, 07:49Ne, 07:52e, 07:54e-07:55e, 07:57e-07:59e, 07:61e-07:64e, 07:66e-07:67Ne, 07:68:03e, 07:70e-07:71e, 07:74e, 07:76e, 07:82e, 07:87e-07:89e, 07:92e-07:96e, 07:98e-07:99e, 07:101e-07:104e, 07:106e-07:111Ne, 07:113e-07:114e, 07:116e-07:122e, 07:124e-07:130e, 07:132e-07:133e, 07:135Ne-07:136e, 07:139e, 07:141e-07:145e, 07:147e-07:148e, 07:150e-07:161Ne, 07:165e-07:175e, 07:177e-07:179e, 07:181Ne, 07:184e-07:192e, 07:194e, 07:196e, 07:198e-07:200e, 07:203e, 07:205e, 07:208e, 07:211e-07:212e, 07:215e-07:217e, 07:221e, 07:224e, 07:229e-07:234e, 07:238e, 07:240e-07:243e, 07:245e-07:247e, 07:250e-07:254e, 07:256e-07:257e, 07:259e, 07:263e, 07:265e-07:268e, 07:271e-07:272Ne, 07:274e-07:277e, 07:280e-07:282e, 07:285Ne-07:286e, 07:288e-07:292e, 07:294e-07:296e</b>	<b>Bw6</b>

### HLA-C

GROUP	ALLELES	ANTIGEN
<b>C*07</b>	<b>C* 07:01:01:01, 07:02:01:01, 07:04:01:01, 07:06;</b> <i>C* 07:01:02d, 07:02:01:03d, 07:05d, 07:12d, 07:40d;</i> <b>C* 07:01:01:02e-07:01:01:13e, 07:01:01:15e-07:01:01:18e, 07:01:03e-07:01:59e, 07:02:01:02e, 07:02:01:04e-07:02:08e, 07:02:10e-07:02:31e, 07:02:33e-07:02:80e, 07:04:01:02e-07:04:11e, 07:14e, 07:16e, 07:36e-07:38e, 07:44e-07:45e, 07:49e</b>	<b>Cw7</b>
	<i>C* 07:32Nd;</i> <b>C* 07:33Ne</b>	Null
	<b>C* 07:18;</b> <i>C* 07:07d, 07:10d, 07:13d, 07:17:01d, 07:19d, 07:21d-07:22d, 07:24d-07:26:01d, 07:27:01d, 07:29:01d, 07:35d, 07:43:01d, 07:46d, 07:56:01d, 07:60d-07:61Nd, 07:66d-07:67d, 07:72d, 07:104Nd;</i> <b>C* 07:01:01:14Qe, 07:03e, 07:08e-07:09e, 07:11e, 07:15e, 07:17:02e, 07:23e, 07:26:02e, 07:27:02e-07:28e, 07:29:02e, 07:31:02e, 07:39e, 07:42e, 07:43:02e, 07:47e-07:48e, 07:50e-07:55Ne, 07:56:02e-07:59e, 07:62e-07:63e, 07:65e, 07:68e-07:71e, 07:74e-07:91e, 07:93e-07:94e, 07:97e-07:100e, 07:102e-07:103e, 07:105e-07:137e, 07:139e, 07:141e-07:147e, 07:149e-07:160e, 07:162e-07:164Ne, 07:166e-07:171e, 07:173e-07:240e, 07:243e-07:264Ne, 07:266e-07:303e, 07:305e-07:306e, 07:308e-07:314:01e, 07:314:03e-07:341e, 07:343e-07:346e, 07:348e-07:363e, 07:365e-07:389e, 07:391e-07:446e, 07:448e-07:486e, 07:488e-07:511e, 07:513Qe, 07:515e-07:577e, 07:579e-07:582Qe, 07:584e-07:598e</b>	-

GROUP	ALLELES	ANTIGEN
C*07	<b>C* 07:01:01:01, 07:02:01:01, 07:04:01:01, 07:06;</b> C* 07:01:02d, 07:02:01:03d, 07:05d, 07:12d, 07:40d; C* 07:01:01:02e-07:01:01:13e, 07:01:01:15e-07:01:01:18e, 07:01:03e-07:01:48e, 07:01:50e-07:01:59e, 07:02:01:02e, 07:02:01:04e-07:02:08e, 07:02:10e-07:02:31e, 07:02:33e-07:02:54e, 07:02:56e-07:02:74e, 07:02:76e-07:02:80e, 07:04:01:02e-07:04:10e, 07:14e, 07:16e, 07:36e-07:38e, 07:44e-07:45e, 07:49e	Cw7
	C* 07:32Nd; C* 07:33Ne	Null
	<b>C* 07:18;</b> C* 07:07d, 07:10d, 07:13d, 07:17:01d, 07:19d, 07:21d-07:22d, 07:24d-07:26:01d, 07:27:01d, 07:29:01d, 07:35d, 07:43:01d, 07:46d, 07:56:01d, 07:60d-07:61Nd, 07:66d-07:67d, 07:72d, 07:104Nd; C* 07:01:01:14Qe, 07:03e, 07:08e-07:09e, 07:11e, 07:15e, 07:20e, 07:23e, 07:26:02e, 07:27:02e-07:28e, 07:31:02e, 07:39e, 07:42e, 07:43:02e, 07:47e-07:48e, 07:50e-07:55Ne, 07:56:02e-07:59e, 07:62e-07:65e, 07:68e-07:71e, 07:73e-07:94e, 07:97e-07:100e, 07:102e-07:103e, 07:105e-07:137e, 07:139e, 07:141:02e-07:147e, 07:149e-07:160e, 07:162e-07:164Ne, 07:166e-07:240e, 07:243e-07:264Ne, 07:266e-07:303e, 07:305e-07:306e, 07:308e-07:314:01e, 07:314:03e-07:341e, 07:343e-07:346e, 07:348e-07:363e, 07:365e-07:392e, 07:394e-07:446e, 07:448e-07:486e, 07:488e-07:511e, 07:513Qe, 07:515e-07:577e, 07:579e-07:582Qe, 07:584e-07:598e	-

#### HLA-DR

#### HLA-DRB1

GROUP	ALLELES	ANTIGEN
DRB1*08	<b>DRB1* 08:04:01, 08:04:04;</b> DRB1* 08:02:02e, 08:04:03e, 08:04:05e-08:04:07e	DR8
	DRB1* 08:24:01e, 08:30:01e-08:30:02e, 08:59e, 08:67e	-
DRB1*11	<b>DRB1* 11:02:01;</b> DRB1* 11:14:01d; DRB1* 11:02:02e-11:02:04e, 11:14:02e, 11:21e	DR11
	DRB1* 11:48e, 11:65e, 11:70e, 11:86e, 11:98e, 11:127e, 11:171e	-

*This genotype was MANUALLY chosen.*

**This genotype was chosen as the most likely; cannot exclude one or more rare genotypes.**

*Cannot exclude RARE alleles from another locus.*

#### HLA-DRB345

GROUP	ALLELES	ANTIGEN
DRB3*02	DRB3* 02:01, 02:02:01:01, 02:10; DRB3* 02:02:02d, 02:03d, 02:11d; DRB3* 02:02:01:02e, 02:02:03e, 02:02:04e, 02:02:05e, 02:02:06e, 02:02:07e, 02:02:08e, 02:02:09e, 02:07e, 02:08e, 02:09e	DR52
	DRB3* 02:06d, 02:17d; DRB3* 02:04e, 02:05e, 02:12e, 02:13e, 02:14e, 02:15e, 02:16e, 02:18e, 02:19e, 02:20e, 02:21e, 02:22:01e, 02:22:02e, 02:23e, 02:24e, 02:25e, 02:26e, 02:27e, 02:28e, 02:29Ne, 02:30e, 02:31:01e, 02:31:02e, 02:32e, 02:33e, 02:34e, 02:35e, 02:36e, 02:37e, 02:39e, 02:40e, 02:41e, 02:43e, 02:44e, 02:45e, 02:46e, 02:47e, 02:48e, 02:49e, 02:51e, 02:52e, 02:53e, 02:54e, 02:55Ne, 02:56e, 02:57e, 02:58e, 02:59e, 02:60e, 02:61Qe, 02:62e, 02:63e, 02:64e, 02:65e	-

Cannot exclude RARE alleles from another locus.

### HLA-DQA1

GROUP	ALLELES	ANTIGEN
DQA1*05	DQA1* 05:01:01:01, 05:03:01:01, 05:05:01:01, 05:08; DQA1* 05:02d, 05:09d; DQA1* 05:01:01:02e-05:01:02e, 05:03:01:02e-05:04e, 05:05:01:02e-05:07e, 05:11e	-
DQA1*05	DQA1* 05:01:01:01, 05:03:01:01, 05:05:01:01, 05:08; DQA1* 05:02d, 05:09d; DQA1* 05:01:01:02e-05:01:02e, 05:03:01:02e-05:04e, 05:05:01:02e-05:07e, 05:11e	-

### HLA-DQB1

GROUP	ALLELES	ANTIGEN
DQB1*03	DQB1* 03:01:01:01; DQB1* 03:01:03d-03:01:04d; DQB1* 03:01:01:02e-03:01:02e, 03:01:05e-03:01:39e	DQ7
	DQB1* 03:02:06e, 03:10:02e	DQ8
	DQB1* 03:09, 03:19:01; DQB1* 03:13d; DQB1* 03:16e, 03:19:02e, 03:21e-03:22e, 03:24e, 03:27e-03:29e, 03:35e-03:36e, 03:42e, 03:44e, 03:46e-03:60e, 03:69e, 03:71e, 03:73e, 03:75e-03:78e, 03:82e-03:84Ne, 03:92e-03:94e, 03:101e-03:103e, 03:108e-03:109e, 03:114e-03:116e, 03:118Ne-03:122e, 03:127e-03:131e, 03:133e-03:135e, 03:139e-03:140e, 03:142e-03:144e, 03:147e-03:148e, 03:150e-03:152e, 03:154e, 03:157e-03:160e, 03:162e-03:167e, 03:169e-03:173e, 03:182e-03:183e, 03:186e-03:188e, 03:191e-03:194e, 03:196e-03:198e, 03:201e-03:202e, 03:206e-03:208e, 03:216e, 03:218e-03:219e, 03:231e-03:232e, 03:235e-03:236e, 03:241e-03:243e, 03:246e, 03:252e-03:257e, 03:260e, 03:264e, 03:266e-03:268e	-

GROUP	ALLELES	ANTIGEN
DQB1*03	DQB1* 03:01:01:01; DQB1* 03:01:03d-03:01:04d; DQB1* 03:01:01:02e-03:01:02e, 03:01:05e-03:01:39e	DQ7
	DQB1* 03:09, 03:19:01; DQB1* 03:13d; DQB1* 03:19:02e, 03:21e-03:22e, 03:24e, 03:27e-03:29e, 03:35e-03:36e, 03:42e, 03:44e, 03:46e-03:60e, 03:69e, 03:71e, 03:73e, 03:75e-03:78e, 03:82e-03:84Ne, 03:92e-03:94e, 03:101e-03:103e, 03:108e-03:109e, 03:114e-03:116e, 03:118Ne-03:122e, 03:127e-03:131e, 03:133e-03:135e, 03:139e-03:140e, 03:142e-03:144e, 03:147e-03:148e, 03:150e-03:152e, 03:154e, 03:157e-03:160e, 03:162e-03:167e, 03:169e-03:171e, 03:173e, 03:182e, 03:186e-03:188e, 03:191e-03:194e, 03:196e-03:198e, 03:201e-03:202e, 03:206e-03:208e, 03:216e, 03:218e-03:219e, 03:231e-03:232e, 03:235e-03:236e, 03:241e-03:243e, 03:246e, 03:252e-03:257e, 03:260e, 03:264e, 03:266e-03:268e	-

#### HLA-DPA1

GROUP	ALLELES	ANTIGEN
DPA1*02	DPA1* 02:01:01:01, 02:07:01:01; DPA1* 02:01:01:02e-02:06e, 02:07:01:02e-02:08e	-
DPA1*03	DPA1* 03:01; DPA1* 03:02e-03:03e	-
<i>This genotype was MANUALLY chosen.</i>		
<b>This genotype was chosen as the most likely; cannot exclude one or more rare genotypes.</b>		

#### HLA-DPB1

EPITYPE	ALLELES	HVR-A	HVR-B	HVR-C	HVR-D	HVR-E	HVR-F
EDP01	DPB1* 01:01:01:01, 01:01:02:01; DPB1* 01:01:01:02e-01:01:01:04e, 01:01:02:02e-01:01:04e, 01:01:06e / DPB1* 118:01e / DPB1* 127:01e / DPB1* 159:01Ne / DPB1* 220:01e / DPB1* 267:01e / DPB1* 326:01e / DPB1* 327:01e / DPB1* 346:01e / DPB1* 481:01e / DPB1* 483:01e / DPB1* 542:01e / DPB1* 543:01e / DPB1* 616:01e / DPB1* 632:01e	VYQG	EEYA	AAE	ILEEK	V	DEAV
EDP40	DPB1* 40:01d	LFQG	EEYA	AAE	ILEEK	M	VGPM
<i>One side of this epitope requires a RARE allele, review results to confirm assignment. This epitope was MANUALLY chosen.</i>							
<b>This genotype was selected.</b>							