

SCHEME 4A2 - SEQUENCES IDENTICAL
over exons 2 and 3 for HLA Class I and exon 2 for HLA Class II
please refer to - <http://www.ebi.ac.uk/ipd/imgt/hla/ambig.html>
Release 3.30.0
SAMPLES 4A2 06-10/2017

Sample 4A2 06/17

Allele	Alternative allele	Alternative allele	Alternative allele	Alternative allele	Alternative allele	Alternative allele	Alternative allele	Alternative allele	Alternative allele	Alternative allele	Alternative allele
A*01:01	A*01:04N	A*01:22N	A*01:141	A*01:142	A*01:145	A*01:58N	A*01:81	A*01:87N	A*01:103	A*01:107	A*01:237
	A*01:109	A*01:132	A*01:141	A*01:142	A*01:155	A*01:177	A*01:212	A*01:217	A*01:234	A*01:237	
A*68:01	A*68:163										
B*15:01	B*15:102	B*15:104	B*15:140	B*15:146	B*15:201	B*15:227	B*15:228	B*15:247	B*15:320	B*15:321Q	
B*37:01	B*37:23	B*37:43	B*37:45	B*37:46	B*37:47	B*37:68					
	C*03:20N	C*03:62	C*03:171	C*03:205	C*03:206	C*03:207	C*03:227	C*03:237	C*03:312	C*03:327	
C*03:03	C*03:341	C*03:357									
C*06:02	C*06:46N	C*06:55	C*06:73	C*06:83	C*06:111	C*06:146	C*06:176	C*06:201			

Allele	Alternative allele	Alternative allele	Alternative allele	Alternative allele	Alternative allele	Alternative allele	Alternative allele	Alternative allele	Alternative allele	Alternative allele
DRB1*10:01	DRB1*10:19									
DRB1*15:01	DRB1*15:141	DRB1*15:145	DRB1*15:146							
DRB3*01:01	DRB3*01:16									
DQA1*01:02	DQA1*01:08	DQA1*01:09	DQA1*01:11							
DQA1*01:05	DQA1*01:01	DQA1*01:04	DQA1*01:05:02	DQA1*01:12						
DQB1*06:01	DQB1*06:18	DQB1*06:27	DQB1*06:31	DQB1*06:32	DQB1*06:45	DQB1*06:84	DQB1*06:103	DQB1*06:104	DQB1*06:107	DQB1*06:133
	DQB1*06:137	DQB1*06:139	DQB1*06:144	DQB1*06:148	DQB1*06:150	DQB1*06:152	DQB1*06:152	DQB1*06:152	DQB1*06:152	DQB1*06:152
DQB1*06:02	DQB1*06:47	DQB1*06:84	DQB1*06:109	DQB1*06:111	DQB1*06:116	DQB1*06:117	DQB1*06:127	DQB1*06:188	DQB1*06:200	DQB1*06:216N
	DQB1*06:219	DQB1*06:224	DQB1*06:226	DQB1*06:227	DQB1*06:228	DQB1*06:237	DQB1*06:240			
DPA1*01:03	DPA1*01:14									
DPB1*04:01	DPB1*126:01:01.01	DPB1*126:01:01.02	DPB1*350:01	DPB1*415:01	DPB1*459:01	DPB1*464:01	DPB1*534:01	DPB1*615:01	DPB1*618:01	DPB1*670:01

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Allele	Alternative allele	Alternative allele	Alternative allele	Alternative allele	Alternative allele	Alternative allele	Alternative allele	Alternative allele	Alternative allele	Alternative allele
A*03:01	A*03:20	A*03:21N	A*03:26	A*03:37	A*03:45	A*03:78	A*03:112	A*03:118	A*03:129N	A*03:132
	A*03:134	A*03:162N	A*03:182	A*03:220	A*03:279N					
A*24:02	A*24:09N	A*24:11N	A*24:40N	A*24:76	A*24:79	A*24:83N	A*24:144	A*24:153	A*24:153	A*24:154
	A*24:158N	A*24:163N	A*24:163N	A*24:221	A*24:249	A*24:250	A*24:251	A*24:263	A*24:264	A*24:265
	A*24:286	A*24:287	A*24:288	A*24:289	A*24:270	A*24:271	A*24:352	A*24:353	A*24:354	A*24:383
	A*24:385	A*24:388N								
B*38:01	B*38:68Q									
B*51:07										
	C*12:23	C*12:109	C*12:110	C*12:111	C*12:125	C*12:143	C*12:160	C*12:167	C*12:171	C*12:172
C*12:03	C*12:201	C*12:209	C*12:210	C*12:211	C*12:216					
C*14:02	C*14:23	C*14:31	C*14:57	C*14:60						

Allele	Alternative allele	Alternative allele	Alternative allele	Alternative allele	Alternative allele	Alternative allele	Alternative allele	Alternative allele	Alternative allele	Alternative allele
DRB1*07:01	DRB1*07:34	DRB1*07:72	DRB1*07:79	DRB1*07:81						
DRB1*13:02	DRB1*13:208	DRB1*13:236	DRB1*13:239							
DRB3*01:01	DRB3*01:16									
DRB4*01:03	DRB4*01:01									
DQA1*01:02	DQA1*01:08	DQA1*01:09	DQA1*01:11							
DQA1*02:01	DQA1*02:01	DQA1*02:04	DQA1*02:06	DQA1*02:09	DQA1*02:10	DQA1*02:48	DQA1*02:59	DQA1*02:64	DQA1*02:79	DQA1*02:80
DQB1*02:02	DQB1*02:81	DQB1*02:82	DQB1*02:89	DQB1*02:96N	DQB1*02:97	DQB1*02:98	DQB1*02:99			
	DQB1*02:88	DQB1*02:189								
DQB1*06:09	DQB1*06:88	DQB1*06:189								
DPA1*01:03	DPA1*01:14									
DPB1*04:01	DPB1*126:01:01.01	DPB1*126:01:01.02	DPB1*350:01	DPB1*415:01	DPB1*459:01	DPB1*464:01	DPB1*534:01	DPB1*615:01	DPB1*618:01	DPB1*670:01

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Allele	Alternative allele	Alternative allele	Alternative allele	Alternative allele	Alternative allele	Alternative allele	Alternative allele	Alternative allele	Alternative allele	Alternative allele
A*03:01	A*03:20	A*03:21N	A*03:26	A*03:37	A*03:45	A*03:78	A*03:112	A*03:118	A*03:129N	A*03:132
	A*03:134	A*03:162N	A*03:182	A*03:220	A*03:279N					
A*30:02	A*30:33									
B*07:02	B*07:44N	B*07:46N	B*07:58	B*07:59	B*07:61	B*07:120	B*07:128	B*07:129	B*07:130	B*07:156
	B*07:161N	B*07:169	B*07:271	B*07:282	B*07:291	B*07:294	B*07:295	B*07:298		
B*18:01	B*18:17N	B*18:83	B*18:81	B*18:119	B*18:124	B*18:131:01:01	B*18:131:01:02	B*18:135		
C*05:01	C*05:03	C*05:37	C*05:53	C*05:93	C*05:108	C*05:145	C*05:153N			
	C*07:50	C*07:86	C*07:74	C*07:189	C*07:160	C*07:167	C*07:245	C*07:308	C*07:348	C*07:349
	C*07:350N	C*07:359	C*07:446	C*07:466	C*07:500	C*07:533	C*07:544	C*07:566	C*07:592	C*07:593N
C*07:02	C*07:594	C*07:595	C*07:596							

Allele	Alternative allele	Alternative allele	Alternative allele	Alternative allele	Alternative allele	Alternative allele	Alternative allele	Alternative allele	Alternative allele	Alternative allele
DRB1*03:01	DRB1*03:124	DRB1*03:132	DRB1*03:137							
DRB1*15:01	DRB1*15:141	DRB1*15:145	DRB1*15:146							
DRB3*02:02	DRB3*02:28	DRB3*02:29N								
DRB3*01:01	DRB3*01:16									
DQA1*01:02	DQA1*01:08	DQA1*01:09	DQA1*01:11							
DQA1*05:01	DQA1*05:03	DQA1*05:05	DQA1*05:06	DQA1*05:07	DQA1*05:08	DQA1*05:09	DQA1*05:11			
DQA1*02:01	DQA1*02:02	DQA1*02:04	DQA1*02:06	DQA1*02:09	DQA1*02:10	DQA1*02:48	DQA1*02:59	DQA1*02:64	DQA1*02:79	DQA1*02:80
	DQA1*02:81	DQA1*02:82	DQA1*02:89	DQA1*02:96N	DQA1*02:97	DQA1*02:98	DQA1*02:99			
DQB1*06:02	DQB1*06:47	DQB1*06:84	DQB1*06:109	DQB1*06:111	DQB1*06:116	DQB1*06:117	DQB1*06:127	DQB1*06:188	DQB1*06:200	DQB1*06:216N
	DQB1*06:219	DQB1*06:224	DQB1*06:226	DQB1*06:227	DQB1*06:228	DQB1*06:237	DQB1*06:240			
DPA1*01:03	DPA1*01:14									
DPB1*04:01	DPB1*126:01:01.01	DPB1*126:01:01.02	DPB1*350:01	DPB1*415:01	DPB1*459:01	DPB1*464:01	DPB1*534:01	DPB1*615:01	DPB1*618:01	DPB1*670:01

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Allele	Alternative allele	Alternative allele	Alternative allele	Alternative allele	Alternative allele	Alternative allele	Alternative allele	Alternative allele	Alternative allele	Alternative allele
A*01:01	A*01:04N	A*01:22N	A*01:141	A*01:142	A*01:145	A*01:58N	A*01:81	A*01:87N	A*01:103	A*01:107
	A*01:109	A*01:132	A*01:141	A*01:142	A*01:155	A*01:177	A*01:212	A*01:217	A*01:234	A*01:237
A*68:01	A*68:163	A*68:11N	A*68:33	A*68:96	A*68:144	A*68:152	A*68:164	A*68:167		
B*08:01	B*08:189	B*08:109	B*08:173	B*08:173	B*08:182	B*08:183	B*08:183			
B*15:01	B*15:102	B*15:104	B*15:140	B*15:146	B*15:201	B*15:227	B*15:228	B*15:247	B*15:320	B*15:321Q
C*03:04	C*03:100	C*03:101	C*03:105	C*03:106	C*03:211:01	C*03:211:02	C*03:212	C*03:213	C*03:218	C*03:219
	C*03:236	C*03:252	C*03:294	C*03:303	C*03:354	C*03:358	C*03:359	C*03:362	C*03:366N	
C*07:01	C*07:56	C*07:18	C*07:52	C*07:153	C*07:166	C*07:337	C*07:343	C*07:419	C*07:458	C*07:588
	C*07:591									

Allele	Alternative allele	Alternative allele	Alternative allele	Alternative allele	Alternative allele	Alternative allele	Alternative allele	Alternative allele	Alternative allele	Alternative allele
DRB1*03:01	DRB1*03:124	DRB1*03:132	DRB1*03:137							
DRB1*13:01	DRB1*13:117	DRB1*13:190	DRB1*13:215	DRB1*13:233						
DRB3*01:01	DRB3*01:16	DRB3*01:43								
DQA1*01:03	DQA1*01:03									
DQA1*05:01	DQA1*05:03	DQA1*05:05	DQA1*05:06:01:01	DQA1*05:07	DQA1*05:08	DQA1*05:09	DQA1*05:11			
DQB1*02:01	DQB1*02:02	DQB1*02:04	DQB1*02:06	DQB1*02:09	DQB1*02:10	DQB1*02:48	DQB1*02:59	DQB1*02:64	DQB1*02:79	DQB1*02:80
	DQB1*02:81	DQB1*02:82	DQB1*02:89	DQB1*02:96N	DQB1*02:97	DQB1*02:98	DQB1*02:99			
DQB1*06:03	DQB1*06:41	DQB1*06:44	DQB1*06:110	DQB1*06:185	DQB1*06:187	DQB1*06:218	DQB1*06:221	DQB1*06:223		
DPA1*01:03	DPA1*01:14									
DPB1*02:01	DPB1*141:01	DPB1*152:01	DPB1*141:01:01:01	DPB1*141:01:01:02	DPB1*141:01:01:01	DPB1*141:01:01:02	DPB1*141:01:01:02	DPB1*141:01:01:01	DPB1*141:01:01:01	DPB1*141:01:01:02
DPB1*04:02	DPB1*105:01:01:01	DPB1*105:01:01:02	DPB1*105:01:01:03	DPB1*105:01:01:04	DPB1*105:01:01:05	DPB1*105:01:01:06	DPB1*105:01:01:07	DPB1*105:01:01:08	DPB1*105:01:01:09	DPB1*105:01:01:10
	DPB1*463:01:01:03	DPB1*571:01	DPB1*647:01	DPB1*665:01						

SCHEME 4A2 - AMBIGUOUS TYPING COMBINATIONS
over exons 2 and 3 for HLA Class I and exon 2 for HLA Class II
please refer to - <http://www.ebi.ac.uk/ipd/imgt/hla/ambig.html>

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Locus	Combination 1 (consensus)	Combination 2	Combination 3	Combination 4	Combination 5	Combination 6	Combination 7	Combination 8	Combination 9	Combination 10	Combination 11	Combination 12	Combination 13	Combination 14	Combination 15
A*	A*01:01	A*68:02	A*01:17+A*68:31	A*01:88:02+A*68:140	A*01:197+A*68:27:01										
B*	B*15:01	B*37:01	B*15:43+B*37:11	B*15:50+B*37:49	B*15:71+B*37:55										
C*	C*03:03	C*06:02	C*03:03:12+C*06:02:10	C*03:03:32+C*06:02:08	C*03:04:01+C*06:53:01	C*03:13:01+C*06:14	C*03:21+C*06:197	C*03:39+C*06:132:01	C*03:43:01+C*06:107	C*03:49+C*06:04:02	C*03:55+C*06:96	C*03:67+C*06:03:02	C*03:69+C*06:138	C*03:116:01+C*06:106:02	C*03:243+C*06:122
DRB1*	DRB1*10:01	DRB1*15:01	DRB1*10:02+DRB1*15:02:01G	DRB1*10:10+DRB1*15:05	DRB1*10:13+DRB1*15:07:01										
DQA1*	DQA1*01:02	DQA1*01:05													
DQB1*	DQB1*05:01	DQB1*06:02	DQB1*05:01:14+DQB1*06:02:09	DQB1*05:11:02+DQB1*06:79:01	DQB1*05:51+DQB1*06:20	DQB1*05:62+DQB1*06:11:01	DQB1*05:73+DQB1*06:146:02	DQB1*05:127+DQB1*06:24							
DPA1*	DPA1*01:03														
DPB1*	DPB1*04:01														

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Locus	Combination 1 (consensus)	Combination 2	Combination 3	Combination 4	Combination 5	Combination 6	Combination 7	Combination 8	Combination 9	Combination 10	Combination 11	Combination 12	Combination 13	Combination 14	Combination 15	
A*	A*03:01	A*24:02	A*03:02:01G+A*24:355	A*03:05:01+A*24:213	A*03:07:01+A*24:56	A*03:08+A*24:07:01	A*03:15+A*24:53	A*03:17:01+A*24:21:01	A*03:19+A*24:296	A*03:30+A*24:191	A*03:65+A*24:13:01	A*03:69N+A*24:13:02	A*03:72+A*24:104	A*03:97+A*24:03:01G	A*03:122+A*24:204	A*03:157:01+A*24:145
B*	B*38:01	B*51:07														
C*	C*12:03	C*14:02	C*12:03:04+C*14:02:03	C*12:03:08+C*14:02:08	C*12:24+C*14:16	C*12:156+C*14:05										
DRB1*	DRB1*07:01	DRB1*13:02	DRB1*07:09+DRB1*13:243	DRB1*07:11+DRB1*13:220												
DQA1*	DQA1*01:02	DQA1*02:01														
DQB1*	DQB1*02:02	DQB1*06:09	DQB1*02:54+DQB1*06:142													
DPA1*	DPA1*01:03															
DPB1*	DPB1*04:01															

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Locus	Combination 1 (consensus)	Combination 2	Combination 3	Combination 4	Combination 5	Combination 6	Combination 7	Combination 8	Combination 9	Combination 10	Combination 11	Combination 12	Combination 13	Combination 14	Combination 15	
A*	A*03:01	A*30:02	A*03:08+A*30:25													
B*	B*07:02	B*18:01	B*07:02:13+B*18:01:10	B*07:07+B*18:14	B*07:26+B*18:13	B*07:31+B*18:50	B*07:48+B*18:30	B*07:68:03+B*18:40	B*07:91+B*18:03	B*07:109+B*18:72:01	B*07:143+B*18:43	B*07:218+B*18:11	B*07:261+B*18:15			
C*	C*05:01	C*07:02	C*05:01:02+C*07:02:35	C*05:01:12+C*07:02:09	C*05:01:17+C*07:02:04	C*05:09:01+C*07:260:01	C*05:09:02+C*07:260:02	C*05:11+C*07:37	C*05:18:01+C*07:130	C*05:23+C*07:17:01	C*05:25+C*07:51	C*05:29:01+C*07:161	C*05:43+C*07:314:01	C*05:46+C*07:39	C*05:76+C*07:241	C*05:98+C*07:172:01
DRB1*	DRB1*03:01	DRB1*15:01	DRB1*03:01:12+DRB1*15:01:04	DRB1*03:01:25+DRB1*15:01:24	DRB1*03:15:01+DRB1*15:37:01	DRB1*03:19+DRB1*15:05	DRB1*03:25+DRB1*15:32	DRB1*03:84+DRB1*15:91	DRB1*13:129+DRB1*15:25							
DQA1*	DQA1*01:02	DQA1*05:01														
DQB1*	DQB1*02:01	DQB1*06:02	DQB1*02:05+DQB1*06:124	DQB1*02:31+DQB1*06:79:01	DQB1*02:47+DQB1*06:173											
DPA1*	DPA1*01:03															
DPB1*	DPB1*02:02	DPB1*04:01	DPB1*33:01:01G+DPB1*1100:01	DPB1*112:01+DPB1*302:01												

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Locus	Combination 1 (consensus)	Combination 2	Combination 3	Combination 4	Combination 5	Combination 6	Combination 7	Combination 8	Combination 9	Combination 10	Combination 11	Combination 12	Combination 13	Combination 14	Combination 15	
A*	A*01:01	A*68:01	A*01:03:01G+A*68:103:01	A*01:17+A*68:03:03	A*01:43+A*68:71	A*01:98+A*68:113	A*01:221+A*68:119:01									
B*	B*08:01	B*15:01	B*08:04:01+B*15:56	B*08:12:01+B*15:07:01G	B*08:21+B*15:50	B*08:23+B*15:70	B*08:26:01+B*15:429	B*08:35+B*15:63	B*08:37+B*15:30:01G	B*08:50+B*15:142	B*08:53:01+B*15:415	B*08:56:02+B*15:251	B*08:71+B*15:78:01	B*08:89+B*15:324	B*08:110+B*15:236	
C*	C*03:04	C*07:01	C*03:08+C*07:27:01	C*03:09+C*07:257:01	C*03:32+C*07:16	C*03:35:01+C*07:196	C*03:37:02+C*07:20	C*03:38:02+C*07:40	C*03:40:01G+C*07:248	C*03:41:01+C*07:330:01	C*03:41:02+C*07:330:02	C*03:64:02+C*07:263	C*03:92+C*07:212	C*03:162+C*07:304	C*03:309+C*07:165	C*03:344+C*07:96:01
DRB1*	DRB1*03:01	DRB1*13:01	DRB1*03:07+DRB1*13:27	DRB1*03:15:01+DRB1*13:61:02	DRB1*03:19+DRB1*13:20											
DQA1*	DQA1*01:03	DQA1*05:01														
DQB1*	DQB1*02:01	DQB1*06:03	DQB1*02:31+DQB1*06:28													
DPA1*	DPA1*01:03															
DPB1*	DPB1*02:01	DPB1*04:02														

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Locus	Combination 1 (consensus)	Combination 2	Combination 3	Combination 4	Combination 5	Combination 6	Combination 7	Combination 8	Combination 9	Combination 10	Combination 11	Combination 12	Combination 13	Combination 14	Combination 15	
A*	A*01:01	A*02:01	A*01:01:13+A*02:01:02	A*01:01:21+A*02:01:09	A*01:01:68+A*02:01:52	A*01:14+A*02:101:01	A*01:26+A*02:576	A*01:30+A*02:246	A*01:66+A*02:338	A*01:88:02+A*02:24:01	A*01:98+A*02:262	A*01:100+A*02:346	A*01:104+A*02:90	A*01:126+A*02:590	A*01:191+A*02:609	A*01:229+A*02:146
B*	B*07:02	B*08:01	B*07:02:03+B*08:01:11	B*07:02:13+B*08:01:33	B*07:02:14+B*08:01:13	B*07:02:33+B*08:01:21	B*07:02:35+B*08:01:02	B*07:05:01G+B*08:07	B*07:08:01+B*08:132	B*07:29+B*08:94	B*07:31+B*08:165					
C*	C*07:01	C*07:02	C*07:19+C*07:27:01													
DRB1*	DRB1*03:01	DRB1*15:01	DRB1*03:01:12+DRB1*15:01:04	DRB1*03:01:25+DRB1*15:01:24	DRB1*03:15:01+DRB1*15:37:01	DRB1*03:19+DRB1*15:05	DRB1*03:25+DRB1*15:32	DRB1*03:84+DRB1*15:91	DRB1*13:129+DRB1*15:25							
DQA1*	DQA1*01:02	DQA1*05:01														
DQB1*	DQB1*02:01	DQB1*06:02	DQB1*02:05+DQB1*06:124	DQB1*02:31+DQB1*06:79:01	DQB1*02:47+DQB1*06:173											
DPA1*	DPA1*01:03															
DPB1*	DPB1*02:01	DPB1*04:02														