

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 3.2.5.0  
SAMPLES 4A2 06-10/2016

**Sample 4A2 06/16**

Allele	Alternative allele	Alternative allele	Alternative allele	Alternative allele	Alternative allele	Alternative allele	Alternative allele	Alternative allele	Alternative allele	Alternative allele	Alternative allele
<b>A*01:01</b>	A*01:04N	A*01:22N	A*01:32	A*01:37	A*01:46	A*01:56N	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					
<b>A*03:01</b>	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							
<b>B*08:01</b>	B*08:19N	B*08:109									
<b>B*44:02</b>	B*44:19N	B*44:27	B*44:66	B*44:118	B*44:187	B*44:243					
<b>C*05:01</b>	C*05:03	C*05:37	C*05:53	C*05:93	C*05:108						
<b>C*07:01</b>	C*07:06	C*07:18	C*07:52	C*07:153	C*07:166	C*07:337	C*07:343	C*07:419	C*07:458		

Allele	Alternative allele	Alternative allele	Alternative allele	Alternative allele	Alternative allele	Alternative allele	Alternative allele	Alternative allele	Alternative allele	Alternative allele	Alternative allele
<b>DRB1*03:01</b>	DRB1*03:124	DRB1*03:132									
<b>DRB1*15:01</b>	DRB3*01:16										
<b>DRB3*01:01</b>	DRB3*01:16										
<b>DRB5*01:01</b>	DRB5*01:16										
<b>DQA1*01:02</b>	DQA1*01:08	DQA1*01:09	DQA1*01:11								
<b>DQA1*05:01</b>	DQA1*05:03	DQA1*05:05	DQA1*05:06	DDA1*05:07	DDA1*05:08	DDA1*05:09	DDA1*05:11				
<b>DQB1*02:01</b>	DQB1*02:02	DQB1*02:04	DQB1*02:06	DQB1*02:09	DQB1*02:10	DQB1*02:48	DQB1*02:59				
<b>DQB1*06:02</b>	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		
<b>DPA1*01:03</b>											
<b>DPB1*03:01</b>	DPB1*104:01	DPB1*124:01	DPB1*351:01								
<b>DPB1*04:01</b>	DPB1*126:01	DPB1*350:01	DPB1*415:01	DPB1*459:01	DPB1*464:01	DPB1*534:01					

**Sample 4A2 07/16**

Allele	Alternative allele	Alternative allele	Alternative allele	Alternative allele	Alternative allele	Alternative allele	Alternative allele	Alternative allele	Alternative allele	Alternative allele	Alternative allele
<b>A*02:01</b>	A*02:09	A*02:43N	A*02:66	A*02:75	A*02:83N	A*02:89	A*02:97:01	A*02:97:02	A*02:132	A*02:134	
	A*02:140	A*02:241	A*02:252	A*02:256	A*02:266	A*02:291	A*02:294	A*02:305N	A*02:327	A*02:329	
	A*02:356N	A*02:357	A*02:397	A*02:411	A*02:446	A*02:455	A*02:469	A*02:481	A*02:538	A*02:559	
	A*02:607	A*02:608N	A*02:614	A*02:629							
<b>A*03:01</b>	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							
<b>B*07:02</b>	B*07:44N	B*07:49N	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>C*07:02</b>	C*07:50	C*07:86	C*07:74	C*07:159	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*07:486	C*07:500						

Allele	Alternative allele	Alternative allele	Alternative allele	Alternative allele	Alternative allele	Alternative allele	Alternative allele	Alternative allele	Alternative allele	Alternative allele	Alternative allele
<b>DRB1*15:01</b>	DRB3*01:16										
<b>DRB5*01:01</b>	DRB5*01:16										
<b>DQA1*01:02</b>	DQA1*01:08	DQA1*01:09	DQA1*01:11								
<b>DQB1*06:02</b>	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		
<b>DPA1*01:03</b>											
<b>DPB1*04:01</b>	DPB1*126:01	DPB1*350:01	DPB1*415:01	DPB1*459:01	DPB1*464:01	DPB1*534:01					

**Sample 4A2 08/16**

Allele	Alternative allele	Alternative allele	Alternative allele	Alternative allele	Alternative allele	Alternative allele	Alternative allele	Alternative allele	Alternative allele	Alternative allele	Alternative allele
<b>A*02:01</b>	A*02:09	A*02:43N	A*02:66	A*02:75	A*02:83N	A*02:89	A*02:97:01	A*02:97:02	A*02:132	A*02:134	
	A*02:140	A*02:241	A*02:252	A*02:256	A*02:266	A*02:291	A*02:294	A*02:305N	A*02:327	A*02:329	
	A*02:356N	A*02:357	A*02:397	A*02:411	A*02:446	A*02:455	A*02:469	A*02:481	A*02:538	A*02:559	
	A*02:607	A*02:608N	A*02:614	A*02:629							
<b>A*31:01</b>	A*31:14N	A*31:23	A*31:46	A*31:48	A*31:55	A*31:56	A*31:59	A*31:71	A*31:72	A*31:81	
	A*31:95	A*31:111									
<b>B*40:01</b>	B*40:55	B*40:141	B*40:150	B*40:151	B*40:179	B*40:221	B*40:236	B*40:241	B*40:247	B*40:264	
	B*40:272	B*40:278	B*40:299	B*40:301	B*40:329	B*40:338N					
<b>B*49:01</b>											
<b>C*03:04</b>	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							
<b>C*07:01</b>	C*07:06	C*07:18	C*07:52	C*07:153	C*07:166	C*07:337	C*07:343	C*07:419	C*07:458		

Allele	Alternative allele	Alternative allele	Alternative allele	Alternative allele	Alternative allele	Alternative allele	Alternative allele	Alternative allele	Alternative allele	Alternative allele	Alternative allele
<b>DRB1*01:01</b>	DRB1*01:50	DRB1*01:67									
<b>DRB1*07:01</b>	DRB1*07:34										
<b>DRB4*01:01</b>	DRB4*01:03	DRB4*01:06	DRB4*01:09								
<b>DQA1*01:02</b>	DQA1*01:08	DQA1*01:09	DQA1*01:11								
<b>DQA1*02:01</b>											
<b>DQB1*02:02</b>	DQB1*02:01	DQB1*02:04	DQB1*02:06	DQB1*02:09	DQB1*02:10	DQB1*02:48	DQB1*02:59	DQB1*02:64			
<b>DQB1*05:04</b>											
<b>DPA1*01:03</b>											
<b>DPB1*03:01</b>	DPB1*104:01	DPB1*124:01	DPB1*351:01								
<b>DPB1*04:01</b>	DPB1*126:01	DPB1*350:01	DPB1*415:01	DPB1*459:01	DPB1*464:01	DPB1*534:01					

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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	Alternative allele
<b>A*03:01</b>	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							
<b>B*35:01</b>	B*35:40N	B*35:42	B*35:57	B*35:94	B*35:134N	B*35:161	B*35:227	B*35:241	B*35:245	B*35:250	
<b>B*39:01</b>	B*39:46	B*39:59	B*39:77	B*39:86							
<b>C*04:01</b>	C*04:09N	C*04:28	C*04:30	C*04:41	C*04:79	C*04:82	C*04:84	C*04:106	C*04:144	C*04:146	
	C*04:161	C*04:162	C*04:165	C*04:195	C*04:226						
<b>C*12:03</b>	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	

Allele	Alternative allele	Alternative allele	Alternative allele	Alternative allele	Alternative allele	Alternative allele	Alternative allele	Alternative allele	Alternative allele	Alternative allele	Alternative allele
<b>DRB1*01:01</b>	DRB1*01:50	DRB1*01:67									
<b>DRB1*16:01</b>											
<b>DRB5*02:02</b>	DRB5*02:06										
<b>DQA1*01:01</b>	DQA1*01:04	DQA1*01:05	DQA1*01:12								
<b>DQA1*01:02</b>	DQA1*01:08	DQA1*01:09	DQA1*01:11								
<b>DQB1*05:01</b>	DQB1*05:103	DQB1*05:104	DQB1*05:107	DQB1*05:18	DQB1*05:27	DQB1*05:31	DQB1*05:32	DQB1*05:45	DQB1*05:84		
<b>DQB1*06:03</b>	DQB1*06:41	DQB1*06:44	DQB1*06:110	DQB1*06:185	DQB1*06:187						
<b>DPA1*01:03</b>											
<b>DPB1*02:01</b>											
<b>DPB1*03:01</b>	DPB1*104:01	DPB1*124:01	DPB1*351:01								
<b>DPB1*13:01</b>	DPB1*107:01	DPB1*133:01	DPB1*518:01	DPB1*519:01							

**Sample 4A2 10/16**

Allele	Alternative allele	Alternative allele	Alternative allele	Alternative allele	Alternative allele	Alternative allele	Alternative allele	Alternative allele	Alternative allele	Alternative allele	Alternative allele
<b>A*03:01</b>	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							
<b>A*68:01</b>	A*68:11N	A*68:33	A*68:96	A*68:144							
<b>B*07:02</b>	B*07:44N	B*07:49N	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>B*44:02</b>	B*44:19N	B*44:27	B*44:66	B*44:118	B*44:187	B*44:243					
<b>C*07:02</b>	C*07:50	C*07:86	C*07:74	C*07:159	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*07:486	C*07:500						
<b>C*07:04</b>	C*07:11	C*07:324									

Allele	Alternative allele	Alternative allele	Alternative allele	Alternative allele	Alternative allele	Alternative allele	Alternative allele	Alternative allele	Alternative allele	Alternative allele	Alternative allele
<b>DRB1*07:01</b>	DRB1*07:34										
<b>DRB1*14:54</b>	DRB1*14:01										
<b>DRB3*02:02</b>	DRB3*02:28	DRB3*02:29N	</								

**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>

**SAMPLES 4A2 06-10/2016**

**Sample 4A2 06/16**

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*	01:01	03:01	A*01:06+A*03:153	A*01:17+A*03:08	A*01:23+A*03:164	A*01:28+A*03:57	A*01:08+A*03:150	A*01:100+A*03:63	A*01:176+A*03:107	A*01:194+A*03:41	A*01:196+A*03:127	A*03:97+A*36:04				
B*	08:01	44:02	B*08:02+B*44:09	B*08:12:01+B*44:211	B*08:23+B*44:206	B*08:47+B*44:176	B*08:50+B*44:49	B*08:60+B*44:01	B*08:71+B*44:53	B*08:74+B*44:51	B*08:88+B*44:84:02	B*08:111+B*44:14	B*08:122+B*44:221	B*08:129+B*44:106		
C*	05:01	07:01	C*05:04:01+C*07:28	C*05:11+C*07:176	C*05:23+C*07:141:02	C*05:26+C*07:16	C*05:29:01+C*07:148	C*05:36+C*07:27:01	C*05:43+C*07:26:01	C*05:46+C*07:40	C*05:76+C*07:165	C*05:98+C*07:73	C*07:07+C*08:28	C*07:09+C*08:02:01G		
DRB1*	03:01	15:01	DRB1*03:15:01+DRB1*15:37:01	DRB1*03:15:02+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*	01:02	05:01														
DQB1*	02:01	06:02	DQB1*06:124+DQB1*02:05	DQB1*06:173+DQB1*02:47	DQB1*06:79:01+DQB1*02:31											
DPA1*	01:03															
DPB1*	03:01	04:01	DPB1*20:01:01+DPB1*377:01	DPB1*23:01:01G+DPB1*92:01	DPB1*25:01+DPB1*215:01	DPB1*52:01+DPB1*214:01	DPB1*56:01+DPB1*80:01	DPB1*57:01+DPB1*294:01	DPB1*72:01+DPB1*132:01	DPB1*150:01+DPB1*164:01	DPB1*209:01+DPB1*355:01	DPB1*392:01+DPB1*442:01	DPB1*398:01+DPB1*508:01			

**Sample 4A2 07/16**

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*	02:01	03:01	A*02:20:01+A*03:157:01	A*02:24:01+A*03:17:01	A*02:26+A*03:07	A*02:34+A*03:08	A*02:35:01+A*03:108	A*02:62+A*03:176	A*02:86+A*03:123:01	A*02:90+A*03:09	A*02:95+A*03:241	A*02:195+A*03:23:01	A*02:237+A*03:05:01	A*02:237+A*03:05:02	A*02:338+A*03:95	
B*	07:02															
C*	07:02															
DRB1*	15:01															
DQA1*	01:02															
DQB1*	06:02															
DPA1*	01:03															
DPB1*	04:01															

**Sample 4A2 08/16**

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*	02:01	31:01	A*02:20:01+A*31:02	A*02:24:02+A*31:68	A*02:40:01+A*31:41	A*02:92+A*31:104	A*02:243:01+A*31:21	A*02:334+A*31:99								
B*	40:01	49:01	B*40:48+B*49:18:02	B*40:63+B*49:07	B*40:87:02+B*49:40	B*40:114:01+B*49:29	B*40:117+B*50:01:01G	B*40:183+B*49:11								
C*	03:04	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+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	
DRB1*	01:01	07:01	DRB1*01:21+DRB1*07:11	DRB1*01:24:01+DRB1*07:65												
DQA1*	01:02	02:01														
DQB1*	02:02	05:04														
DPA1*	01:03															
DPB1*	03:01	04:01	DPB1*20:01:01+DPB1*377:01	DPB1*23:01:01G+DPB1*92:01	DPB1*25:01+DPB1*215:01	DPB1*52:01+DPB1*214:01	DPB1*56:01+DPB1*80:01	DPB1*57:01+DPB1*294:01	DPB1*72:01+DPB1*132:01	DPB1*150:01+DPB1*164:01	DPB1*209:01+DPB1*355:01	DPB1*392:01+DPB1*442:01	DPB1*398:01+DPB1*508:01			

**Sample 4A2 09/16**

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*	03:01															
B*	35:01	39:01	B*35:06+B*39:01	B*35:29:01+B*39:05:01	B*35:49+B*39:19:01	B*35:69:01+B*39:42	B*35:92+B*39:58	B*35:93+B*39:74	B*35:107+B*39:04	B*35:259+B*39:30						
C*	04:01	12:03	C*04:15:02+C*12:156	C*04:29+C*12:04:02	C*04:33+C*12:28	C*04:34:01+C*12:24	C*04:114+C*12:154	C*04:172+C*06:76:02	C*04:230+C*12:10:02							
DRB1*	01:01	16:01														
DQA1*	01:01	01:02														
DQB1*	05:01	06:03	DQB1*05:11:02+DQB1*06:28	DQB1*05:51+DQB1*06:31	DQB1*05:73+DQB1*06:199											
DPA1*	01:03	02:01	DPA1*01:06:01+DPA1*02:03													
DPB1*	03:01	13:01	DPB1*26:01:02+DPB1*567:01	DPB1*29:01+DPB1*412:01	DPB1*295:01+DPB1*363:01											

**Sample 4A2 10/16**

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*	03:01	68:01	A*03:05:01+A*68:19	A*03:07+A*68:42	A*03:12+A*68:71	A*03:17:01+A*68:91	A*03:24+A*68:66	A*03:50+A*68:08:02	A*03:123:01+A*68:12	A*03:215+A*68:103:01	A*03:215+A*68:103:02					
B*	07:02	44:02	B*07:04+B*44:28:02	B*07:07+B*44:211	B*07:18:02+B*44:106	B*07:20+B*44:16	B*07:24+B*44:21	B*07:25+B*44:76	B*07:28+B*44:123	B*07:54+B*44:12	B*07:57+B*44:176	B*07:68:03+B*44:53	B*07:73+B*44:84:01	B*07:91+B*44:206	B*07:96:01+B*44:51	B*07:114+B*44:22
C*	07:02	07:04	C*07:45+C*07:260:01													
DRB1*	07:01	14:54	DRB1*07:09+DRB1*14:70	DRB1*07:50+DRB1*14:26	DRB1*07:85+DRB1*14:122											
DQA1*	01:04	02:01														
DQB1*	02:02	05:03														
DPA1*	01:03															
DPB1*	02:01	03:01	DPB1*04:02:01G+DPB1*29:01	DPB1*06:01:01+DPB1*75:01	DPB1*08:01+DPB1*164:01	DPB1*16:01:01+DPB1*508:01	DPB1*20:01:01+DPB1*188:01	DPB1*25:01+DPB1*46:01:01	DPB1*37:01+DPB1*108:01	DPB1*50:01+DPB1*311:01	DPB1*57:01+DPB1*109:01	DPB1*59:01+DPB1*88:01	DPB1*73:01+DPB1*413:01	DPB1*79:01+DPB1*235:01	DPB1*132:01+DPB1*189:01	