

Supplementary Table 3 - List of tags for HLA alleles

Note that the listed tag SNP or haplotype test based on multiple SNPs does not necessarily represent the best test. Due to the correlations between SNPs, there are likely to exist many equivalent tags or haplotypes to capture any given HLA allele. Please check the web-based resources listed in the URL section of the manuscript for updates.

## YRI

HLA allele	frequency	tags	allele	frequency	rsquared	dprime
HLA-A*0101	0.0167	rs10807055,rs2844775	1,1	0.017	1.000	1.000
HLA-A*0201	0.0417	rs4713240,rs3132682	3,2	0.042	1.000	1.000
HLA-A*0202	0.0250	rs9261488,rs3094636	4,2	0.025	1.000	1.000
HLA-A*0205	0.0167	rs2523734,rs3132672	3,4	0.017	1.000	1.000
HLA-A*0211	0.0083	rs7452887,rs968909	2,1	0.017	0.496	1.000
HLA-A*0301	0.1250	rs2524024	1	0.125	1.000	1.000
HLA-A*2301	0.1083	rs2394186,rs1611717	2,2	0.108	1.000	1.000
HLA-A*2424	0.0083	rs1264362	2	0.017	0.496	0.992
HLA-A*2601	0.0250	rs3823339	3	0.025	1.000	1.000
HLA-A*2902	0.0167	rs7741100,rs2523807	3,2	0.017	1.000	1.000
HLA-A*3001	0.0917	rs1633005,rs2057727	4,4	0.092	1.000	1.000
HLA-A*3002	0.0500	rs2844846,rs2517671	1,2	0.050	1.000	1.000
HLA-A*3201	0.0083	rs3873243	2	0.008	1.000	1.000
HLA-A*3301	0.0250	rs7749944	4	0.025	1.000	1.000
HLA-A*3303	0.1083	rs6921921,rs2523945	1,3	0.108	1.000	1.000
HLA-A*3402	0.0417	rs1610606,rs4959036	2,3	0.042	1.000	1.000
HLA-A*3601	0.1417	rs259940,rs261943	3,3	0.142	1.000	1.000
HLA-A*6602	0.0167	rs3115592,rs2523960	1,3	0.017	1.000	1.000
HLA-A*6801	0.0167	rs2735068,rs2524198	2,2	0.017	1.000	1.000
HLA-A*6802	0.0583	rs6457116	2	0.058	1.000	1.000
HLA-A*7401	0.0417	rs9468675	2	0.042	1.000	1.000
HLA-A*8001	0.0083	rs1235162	4	0.008	1.000	1.000
HLA-B*0702	0.0750	rs2523618	4	0.075	1.000	1.000
HLA-B*0801	0.0083	rs1059612	2	0.008	1.000	1.000
HLA-B*1302	0.0250	rs397596	1	0.025	1.000	1.000
HLA-B*1401	0.0083	rs1264308	2	0.017	0.496	0.992
HLA-B*1402	0.0083	rs2734331	1	0.008	1.000	1.000
HLA-B*1403	0.0083	rs2524229	4	0.017	0.496	0.992
HLA-B*1503	0.0583	rs3819294,rs2844533	1,2	0.058	1.000	1.000
HLA-B*1510	0.0833	rs3819294,rs2523638	1,3	0.083	1.000	1.000
HLA-B*1516	0.0083	rs7776044,rs2736157	1,3	0.017	0.496	1.000
HLA-B*1801	0.0500	rs1051791	2	0.050	1.000	1.000
HLA-B*3501	0.0833	rs2249876,rs1058026,rs2844498	4,2,2	0.083	1.000	1.000
HLA-B*3903	0.0083	rs3094111,rs2233969	1,3	0.017	0.496	1.000
HLA-B*3910	0.0083	rs6929434	4	0.008	1.000	1.000
HLA-B*4201	0.0750	rs5875311,rs2273017	3,3	0.075	1.000	1.000
HLA-B*4202	0.0083	rs9469052	2	0.017	0.496	0.992
HLA-B*4403	0.0167	rs2769	2	0.017	1.000	1.000
HLA-B*4501	0.0167	rs7453631	4	0.017	1.000	1.000
HLA-B*4901	0.0500	rs9368673,rs11967289	2,4	0.050	1.000	1.000
HLA-B*5101	0.0417	rs2523451,rs4569,rs379464	4,3,3	0.033	0.793	1.000
HLA-B*5201	0.0833	rs2394401,rs7747738,rs2256965	1,1,4	0.083	1.000	1.000
HLA-B*5301	0.1583	rs2844535,rs6940467	2,3	0.150	0.938	1.000
HLA-B*5601	0.0083	rs4122190	1	0.008	1.000	1.000
HLA-B*5702	0.0083	rs2246626,rs2071278	3,3	0.017	0.496	1.000
HLA-B*5703	0.0250	rs7451258,rs3998357,rs2523586	2,3,4	0.025	1.000	1.000
HLA-B*5801	0.0583	rs1058026,rs2523608,rs6929932	1,4,4	0.067	0.867	1.000
HLA-B*7801	0.0083	rs3130116	4	0.017	0.496	0.992
HLA-B*8101	0.0083	rs9261947,rs2853925	1,2	0.017	0.496	1.000
HLA-C*0102	0.0083	rs4122190	1	0.008	1.000	1.000
HLA-C*0202	0.0917	rs6923313,rs2243868	3,3	0.092	1.000	1.000
HLA-C*0302	0.0417	rs2074488	3	0.042	1.000	1.000
HLA-C*0401	0.2500	rs4386816	4	0.250	1.000	1.000
HLA-C*0501	0.0083	rs7762619	4	0.008	1.000	1.000
HLA-C*0602	0.0083	rs12198655	3	0.017	0.496	0.992
HLA-C*0701	0.1333	rs3132499,rs2524074	1,2	0.133	1.000	1.000
HLA-C*0702	0.0583	rs9264731	1	0.058	1.000	1.000

Supplementary Table 3 - List of tags for HLA alleles

HLA-C*0802	0.0500	rs2524100,rs652888	3,1	0.050	1.000	1.000
HLA-C*0804	0.0500	rs1265180,rs2523554	1,3	0.050	1.000	1.000
HLA-C*1203	0.0083	rs6929434	4	0.008	1.000	1.000
HLA-C*1402	0.0083	rs6457259,rs2535293	2,2	0.017	0.496	1.000
HLA-C*1505	0.0167	rs3216869,rs7381371	2,4	0.017	1.000	1.000
HLA-C*1601	0.1667	rs2844603,rs2844586	3,1	0.167	0.884	0.940
HLA-C*1701	0.0833	rs2524069,rs5875311,rs3096702	1,3,2	0.075	0.892	1.000
HLA-C*1801	0.0167	rs2524040,rs2524089	3,3	0.017	1.000	1.000
HLA-DQA*0101	0.1000	rs3134605,rs2858330,rs1612904	1,1,1	0.108	0.915	1.000
HLA-DQA*0102	0.2417	rs204996,rs6457594,rs1063355	3,1,1	0.233	0.704	0.859
HLA-DQA*0103	0.0833	rs3135338,rs2858867,rs5875382	1,4,1	0.083	1.000	1.000
HLA-DQA*0201	0.1500	rs3844313,rs2647012	1,2	0.150	1.000	1.000
HLA-DQA*0301	0.0583	rs5875382,rs6457617	3,1	0.058	1.000	1.000
HLA-DQA*0401	0.1333	rs4639334,rs1061172	2,3	0.133	1.000	1.000
HLA-DQA*0501	0.2333	rs4424079,rs2284189	3,1	0.233	0.822	0.907
HLA-DQB*0201	0.2750	rs4988889	3	0.275	1.000	1.000
HLA-DQB*0301	0.1750	rs6928482,rs1056315	3,1	0.175	1.000	1.000
HLA-DQB*0302	0.0167	rs7454108	4	0.017	1.000	1.000
HLA-DQB*0402	0.1083	rs2213586,rs4947342	4,4	0.108	1.000	1.000
HLA-DQB*0501	0.1250	rs6457614	1	0.125	1.000	1.000
HLA-DQB*0502	0.0583	rs3129718	3	0.058	1.000	1.000
HLA-DQB*0503	0.0250	rs1612904,rs2856717	1,4	0.025	1.000	1.000
HLA-DQB*0602	0.1000	rs5875382,rs3134975	3,4	0.117	0.841	1.000
HLA-DQB*0603	0.0583	rs3135006,rs3918153,rs210139	4,2,3	0.067	0.867	1.000
HLA-DQB*0604	0.0167	rs3129848,rs2858867,rs1978029	4,2,4	0.017	1.000	1.000
HLA-DQB*0605	0.0417	rs419132,rs2157051,rs5021448	3,3,4	0.042	1.000	1.000
HLA-DRB*0101	0.0167	rs439844,rs3135391	3,4	0.017	1.000	1.000
HLA-DRB*0102	0.0333	rs2187818,rs14004	2,4	0.033	1.000	1.000
HLA-DRB*0301	0.0917	rs3129763,rs9275229,rs9277489	4,4,1	0.083	0.713	0.890
HLA-DRB*0302	0.0917	rs3129878,rs4599680,rs7764856	3,3,1	0.092	1.000	1.000
HLA-DRB*0403	0.0083	rs1800624	4	0.008	1.000	1.000
HLA-DRB*0701	0.1250	rs1800624,rs3828846,rs2647045	4,2,1	0.125	0.853	0.924
HLA-DRB*0804	0.0750	rs5077778,rs3129954,rs1061172	1,2,3	0.083	0.892	1.000
HLA-DRB*0901	0.0250	rs2242656,rs1061808,rs2395185	1,4,1	0.025	1.000	1.000
HLA-DRB*1101	0.0583	rs2395150,rs12191360,rs4713559	4,2,4	0.058	1.000	1.000
HLA-DRB*1102	0.0250	rs2395153,rs241424,rs2072915	2,3,1	0.025	1.000	1.000
HLA-DRB*1104	0.0750	rs558702,rs7744293	1,1	0.050	0.649	1.000
HLA-DRB*1201	0.0167	rs4248166,rs6918223	2,2	0.017	1.000	1.000
HLA-DRB*1301	0.0833	rs3134942,rs3763308,rs7451962	3,4,2	0.100	0.818	1.000
HLA-DRB*1302	0.0583	rs2157339,rs7756467	1,4	0.058	1.000	1.000
HLA-DRB*1303	0.0750	rs11756657,rs2516049,rs2856718	3,2,1	0.075	1.000	1.000
HLA-DRB*1327	0.0083	rs2894239,rs9368757	3,1	0.017	0.496	1.000
HLA-DRB*1335	0.0083	rs2982277	2	0.008	1.000	1.000
HLA-DRB*1401	0.0250	rs1612904,rs2856717	1,4	0.025	1.000	1.000
HLA-DRB*1501	0.0083	rs443623	1	0.008	1.000	1.000
HLA-DRB*1503	0.0917	rs12191360,rs4599680	2,1	0.100	0.908	1.000

## CEU

HLA allele	frequency	tags	allele	frequency	rsquared	dprime
HLA-A*0101	0.1889	rs1611635,rs10947088	4,4	0.183	0.964	1.000
HLA-A*0201	0.3278	rs2844821,rs762324	3,2	0.350	0.906	1.000
HLA-A*0205	0.0111	rs6906270	2	0.011	1.000	1.000
HLA-A*0206	0.0056	rs3116820,rs6457109	3,3	0.011	0.497	1.000
HLA-A*0301	0.0944	rs9380122,rs9259817	4,2	0.100	0.939	1.000
HLA-A*1101	0.0389	rs29233	2	0.039	1.000	1.000
HLA-A*2301	0.0167	rs3025623,rs2534825	4,3	0.017	1.000	1.000
HLA-A*2402	0.0889	rs3893538,rs2523933	2,1	0.094	0.935	1.000
HLA-A*2403	0.0056	rs362527,rs4071986	3,4	0.011	0.497	1.000
HLA-A*2501	0.0389	rs3835309,rs3094121	1,1	0.039	1.000	1.000
HLA-A*2601	0.0222	rs2301751,rs4678	4,2	0.022	1.000	1.000
HLA-A*2902	0.0167	rs7453068,rs2844659	1,1	0.017	1.000	1.000
HLA-A*3001	0.0056	rs11961013	3	0.006	1.000	1.000
HLA-A*3002	0.0056	rs29243	2	0.006	1.000	1.000

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HLA-A*3101	0.0333	rs1061235	4	0.033	1.000	1.000
HLA-A*3201	0.0278	rs1611578,rs3130244	3,2	0.028	1.000	1.000
HLA-A*6801	0.0333	rs1610714,rs2571375	3,3	0.033	1.000	1.000
HLA-B*0702	0.1833	rs2596438,rs805288	3,2	0.189	0.964	1.000
HLA-B*0801	0.1389	rs6457374,rs2844535	3,2	0.139	0.909	0.954
HLA-B*1302	0.0167	rs12191164	3	0.017	1.000	1.000
HLA-B*1401	0.0056	rs12208550	3	0.006	1.000	1.000
HLA-B*1402	0.0111	rs2524160,rs9368673	4,2	0.011	1.000	1.000
HLA-B*1501	0.0722	rs3094117,rs3819294	1,1	0.067	0.918	1.000
HLA-B*1510	0.0056	rs11969139	4	0.006	1.000	1.000
HLA-B*1801	0.0389	rs3129996,rs2523589,rs2844575	3,3,2	0.039	1.000	1.000
HLA-B*2705	0.0056	rs6919835	3	0.011	0.497	0.994
HLA-B*3501	0.0500	rs2532934,rs3905495,rs2523685	1,1,3	0.050	1.000	1.000
HLA-B*3503	0.0111	rs1264375,rs1058026,rs2857605	2,2,4	0.011	1.000	1.000
HLA-B*3701	0.0111	rs2853931,rs7772218	1,3	0.011	1.000	1.000
HLA-B*3801	0.0056	rs2734331,rs3129944	3,3	0.011	0.497	1.000
HLA-B*3905	0.0056	rs3131382	3	0.006	1.000	1.000
HLA-B*3906	0.0111	rs9468859,rs2844603	1,1	0.011	1.000	1.000
HLA-B*4001	0.0389	rs4711240,rs1265110	3,1	0.039	1.000	1.000
HLA-B*4002	0.0167	rs3819285	2	0.017	1.000	1.000
HLA-B*4101	0.0056	rs2269708	4	0.006	1.000	1.000
HLA-B*4402	0.1222	rs3130501,rs2769,rs2844533	2,4,4	0.128	0.950	1.000
HLA-B*4403	0.0222	rs12526186,rs7747738	2,1	0.022	1.000	1.000
HLA-B*4404	0.0056	rs2524180,rs7747738	4,1	0.011	0.497	1.000
HLA-B*4405	0.0056	rs2516683,rs2844685	2,4	0.011	0.497	1.000
HLA-B*4901	0.0111	rs2394985	3	0.011	1.000	1.000
HLA-B*5001	0.0167	rs915653	4	0.017	1.000	1.000
HLA-B*5101	0.0278	rs2516675,rs2844657,rs4947296	2,4,2	0.033	0.829	1.000
HLA-B*5201	0.0167	rs2517424,rs12526820	1,2	0.017	1.000	1.000
HLA-B*5601	0.0111	rs4122190	1	0.011	1.000	1.000
HLA-B*5701	0.0611	rs2395029	4	0.061	1.000	1.000
HLA-B*5801	0.0056	rs3130660,rs1063635	1,1	0.011	0.497	1.000
HLA-C*0102	0.0167	rs9380234	2	0.017	1.000	1.000
HLA-C*0202	0.0222	rs1265100,rs4122189	3,2	0.022	1.000	1.000
HLA-C*0303	0.0611	rs1265100,rs7745906	1,1	0.056	0.904	1.000
HLA-C*0304	0.0389	rs4713391,rs7745906,rs3130434	2,1,2	0.039	1.000	1.000
HLA-C*0401	0.0833	rs9461684	3	0.083	1.000	1.000
HLA-C*0501	0.1167	rs3130955,rs364415,rs4151665	2,1,2	0.117	1.000	1.000
HLA-C*0602	0.1167	rs887466,rs4379333	3,2	0.117	1.000	1.000
HLA-C*0701	0.1778	rs2524074,rs7382297	2,2	0.178	0.925	0.962
HLA-C*0702	0.2056	rs3132572,rs2001181	1,1	0.217	0.935	0.986
HLA-C*0704	0.0278	rs2524050,rs2256583	4,3	0.028	1.000	1.000
HLA-C*0802	0.0167	rs2524048,rs2442719	3,3	0.017	1.000	1.000
HLA-C*1202	0.0111	rs3869115,rs396960	2,4	0.011	1.000	1.000
HLA-C*1203	0.0167	rs3130457,rs2248902	1,4	0.017	1.000	1.000
HLA-C*1402	0.0167	rs2517439,rs2240061	1,2	0.017	1.000	1.000
HLA-C*1502	0.0278	rs3764808,rs4379333	3,2	0.028	1.000	1.000
HLA-C*1601	0.0333	rs7747738	3	0.028	0.829	0.994
HLA-C*1701	0.0056	rs2269708	4	0.006	1.000	1.000
HLA-DQA*0101	0.1333	rs6457614,rs1794265	1,3	0.133	1.000	1.000
HLA-DQA*0102	0.2389	rs14004,rs6457594	3,1	0.228	0.881	0.968
HLA-DQA*0103	0.0556	rs2273017,rs2157051	1,3	0.050	0.895	1.000
HLA-DQA*0201	0.1333	rs7745002,rs2858333,6p0315	2,3,3	0.133	0.906	0.952
HLA-DQA*0301	0.2278	rs3129883,rs7745002,rs3844313	2,2,3	0.228	1.000	1.000
HLA-DQA*0401	0.0333	rs7743506	2	0.033	1.000	1.000
HLA-DQA*0501	0.1778	rs10485326,rs2040406	4,1	0.172	0.962	0.993
HLA-DQB*0201	0.1556	rs4988889	3	0.150	0.958	0.993
HLA-DQB*0301	0.1667	rs7744001,rs2856691	1,2	0.167	1.000	1.000
HLA-DQB*0302	0.1444	rs7454108,rs2071876	2,2	0.144	1.000	1.000
HLA-DQB*0303	0.0611	rs3834857,rs2395533	2,4	0.061	1.000	1.000
HLA-DQB*0305	0.0056	rs9267532,rs707915	1,1	0.011	0.497	1.000
HLA-DQB*0402	0.0333	rs7743506	2	0.033	1.000	1.000
HLA-DQB*0501	0.0944	rs6457614	1	0.094	1.000	1.000
HLA-DQB*0502	0.0222	rs1548306,rs5875391	1,1	0.022	1.000	1.000
HLA-DQB*0503	0.0389	rs1794265	3	0.039	1.000	1.000

Supplementary Table 3 - List of tags for HLA alleles

HLA-DQB*0601	0.0056	rs2858880	1	0.006	1.000	1.000
HLA-DQB*0602	0.2000	rs3135388	3	0.206	0.966	0.993
HLA-DQB*0603	0.0500	rs2395150,rs3135461	4,3	0.050	1.000	1.000
HLA-DQB*0604	0.0167	rs10573,rs7766854	1,1	0.017	1.000	1.000
HLA-DQB*0609	0.0056	rs6901092	1	0.006	1.000	1.000
HLA-DRB*0101	0.0889	rs4947332,rs6457614	3,2	0.089	1.000	1.000
HLA-DRB*0301	0.0944	rs2040410	3	0.083	0.872	0.988
HLA-DRB*0401	0.0889	rs6910071,rs3817964,rs660895	2,1,2	0.117	0.739	1.000
HLA-DRB*0402	0.0056	rs3130071,rs416352	4,1	0.011	0.497	1.000
HLA-DRB*0403	0.0167	rs7454108,rs206765,rs399604	2,1,2	0.017	1.000	1.000
HLA-DRB*0404	0.1056	rs2736157,rs3115572,rs2395533	1,2,4	0.128	0.623	0.879
HLA-DRB*0405	0.0056	rs1057149	2	0.011	0.497	0.994
HLA-DRB*0407	0.0111	rs7774197,rs417812	3,4	0.011	1.000	1.000
HLA-DRB*0701	0.1000	rs7745002,rs2647087,rs241398	2,3,2	0.117	0.739	0.937
HLA-DRB*0801	0.0333	rs7743506	2	0.033	1.000	1.000
HLA-DRB*1001	0.0056	rs4148871,rs2071538	4,1	0.011	0.497	1.000
HLA-DRB*1101	0.0500	rs434841,rs1061172,rs5875439	3,3,3	0.050	1.000	1.000
HLA-DRB*1103	0.0111	rs4639334,rs412735,rs210180	4,1,4	0.011	1.000	1.000
HLA-DRB*1104	0.0056	rs4713607,rs12664430	1,1	0.011	0.497	1.000
HLA-DRB*1201	0.0056	rs6901541,rs6916742	2,1	0.011	0.497	1.000
HLA-DRB*1301	0.0444	rs2395173,rs2157051	3,3	0.050	0.884	1.000
HLA-DRB*1302	0.0222	rs4434496,rs6901541	4,4	0.022	1.000	1.000
HLA-DRB*1303	0.0111	rs424232,rs2050191	1,1	0.011	1.000	1.000
HLA-DRB*1401	0.0333	rs2763979,rs1794265	3,2	0.033	1.000	1.000
HLA-DRB*1404	0.0056	rs805262,rs1794265	3,2	0.011	0.497	1.000
HLA-DRB*1501	0.2000	rs3135388	3	0.206	0.966	0.993
HLA-DRB*1502	0.0056	rs2858880	1	0.006	1.000	1.000
HLA-DRB*1601	0.0222	rs7452076,rs6923504	4,3	0.022	1.000	1.000

## CHB

HLA allele	frequency	tags	allele	frequency	rsquared	dprime
HLA-A*0101	0.022	rs1264709	4	0.022	1.000	1.000
HLA-A*0201	0.233	rs892666,rs4959037,rs4678	2,1,2	0.244	0.941	1.000
HLA-A*0203	0.033	rs2844713,rs2269706	1,4	0.033	1.000	1.000
HLA-A*0206	0.056	rs6457109,rs9260988	3,1	0.056	1.000	1.000
HLA-A*0301	0.022	rs3130785	3	0.022	1.000	1.000
HLA-A*0302	0.022	rs1736924,rs1557608	3,4	0.022	1.000	1.000
HLA-A*1101	0.233	rs2517754,rs7745235	2,1	0.233	1.000	1.000
HLA-A*2402	0.156	rs2734984,rs1611589	1,1	0.156	1.000	1.000
HLA-A*2601	0.011	rs3823339	3	0.011	1.000	1.000
HLA-A*3001	0.056	rs3218822	1	0.056	1.000	1.000
HLA-A*3101	0.033	rs3823318,rs1061235	2,1	0.033	1.000	1.000
HLA-A*3201	0.022	rs9468692	2	0.022	1.000	1.000
HLA-A*3303	0.078	rs2524005,rs2855591	1,1	0.078	1.000	1.000
HLA-A*6801	0.022	rs2844800	4	0.022	1.000	1.000
HLA-B*0705	0.011	rs2523480	2	0.011	1.000	1.000
HLA-B*0801	0.022	rs4248151,rs3128982	2,2	0.022	1.000	1.000
HLA-B*1301	0.033	rs707913,rs2844586	3,1	0.033	1.000	1.000
HLA-B*1302	0.056	rs7761138,rs12212594	3,2	0.056	1.000	1.000
HLA-B*1501	0.089	rs2524178,rs3819294	3,1	0.100	0.878	1.000
HLA-B*1502	0.011	rs3909184,rs2844682	2,4	0.011	1.000	1.000
HLA-B*1511	0.011	rs2074491	4	0.011	1.000	1.000
HLA-B*1518	0.033	rs4084091,rs3819294	1,1	0.033	1.000	1.000
HLA-B*3501	0.022	rs1264307,rs3128982	1,2	0.022	1.000	1.000
HLA-B*3503	0.022	rs3130785	3	0.022	1.000	1.000
HLA-B*3701	0.011	rs4947332	3	0.011	1.000	1.000
HLA-B*3801	0.011	rs9295863	3	0.011	1.000	1.000
HLA-B*3802	0.033	rs2844725,rs3828875	1,4	0.033	1.000	1.000
HLA-B*3901	0.011	rs1811197,rs2844575	4,2	0.011	1.000	1.000
HLA-B*4001	0.122	rs2844580,rs2523694	3,2	0.111	0.898	1.000
HLA-B*4002	0.011	rs6930444,rs3130655	3,4	0.011	1.000	1.000
HLA-B*4006	0.044	rs3819299,rs8283	2,4	0.044	1.000	1.000
HLA-B*4601	0.111	rs2243868,rs2524227,rs2857595	3,1,1	0.100	0.889	1.000

Supplementary Table 3 - List of tags for HLA alleles

HLA-B*4801	0.044	rs4959069	2	0.044	1.000	1.000
HLA-B*5101	0.078	rs3905495,rs7450800,rs2471980	1,2,3	0.067	0.847	1.000
HLA-B*5201	0.044	rs1062470,rs2844586	3,1	0.044	1.000	1.000
HLA-B*5401	0.056	rs3130786,rs3819284	1,1	0.056	1.000	1.000
HLA-B*5601	0.011	rs3130977,rs1063632	3,4	0.011	1.000	1.000
HLA-B*5701	0.011	rs3093726	4	0.011	1.000	1.000
HLA-B*5801	0.044	rs3134792,rs4713518	3,1	0.044	1.000	1.000
HLA-B*5901	0.011	rs3094188,rs1063632	2,4	0.011	1.000	1.000
HLA-B*6701	0.022	rs2239523,rs4947248	3,2	0.022	1.000	1.000
HLA-B*8101	0.011	rs2507997,rs3134954	2,2	0.011	1.000	1.000
HLA-C*0102	0.178	rs3834326,rs4122190	1,1	0.178	1.000	1.000
HLA-C*0302	0.044	rs1265155,rs4713438	3,4	0.044	1.000	1.000
HLA-C*0303	0.078	rs6457350,rs2156875	2,4	0.078	1.000	1.000
HLA-C*0304	0.044	rs6457350,rs4947248	2,2	0.044	1.000	1.000
HLA-C*0401	0.044	rs7451258,rs12662501	2,1	0.044	1.000	1.000
HLA-C*0602	0.078	rs3130457	1	0.078	1.000	1.000
HLA-C*0702	0.200	rs2001181	1	0.200	1.000	1.000
HLA-C*0704	0.011	rs2395031	3	0.011	1.000	1.000
HLA-C*0801	0.144	rs2524100	1	0.144	1.000	1.000
HLA-C*1202	0.044	rs3094663,rs2073723	2,4	0.044	1.000	1.000
HLA-C*1203	0.033	rs6929434	4	0.033	1.000	1.000
HLA-C*1402	0.044	rs3095301,rs2073716	4,2	0.044	1.000	1.000
HLA-C*1502	0.056	rs7451258	2	0.056	1.000	1.000
HLA-DQA*0101	0.100	rs8365,rs482044,rs532098	2,2,2	0.089	0.878	1.000
HLA-DQA*0102	0.122	rs5875382,rs1063355	3,1	0.122	0.629	0.793
HLA-DQA*0103	0.144	rs7744001,rs1063355,rs2187686	1,1,2	0.133	0.911	1.000
HLA-DQA*0201	0.067	rs7763805,rs3844313	2,1	0.056	0.824	1.000
HLA-DQA*0301	0.322	rs2395533,rs6903433	4,3	0.300	0.901	1.000
HLA-DQA*0401	0.022	rs1694112,rs4711312	1,2	0.022	1.000	1.000
HLA-DQA*0501	0.122	rs4639334,rs6908943	2,3	0.122	1.000	1.000
HLA-DQA*0601	0.078	rs1061172,rs3129718	3,1	0.078	1.000	1.000
HLA-DQB*0201	0.111	rs4988889	3	0.111	1.000	1.000
HLA-DQB*0301	0.167	rs6928482,rs1056315	3,1	0.167	1.000	1.000
HLA-DQB*0302	0.067	rs6906021,rs9275184	4,3	0.067	1.000	1.000
HLA-DQB*0303	0.189	rs2395533,rs2856683	4,4	0.189	1.000	1.000
HLA-DQB*0401	0.067	rs2077580,rs2395533,rs2300825	2,4,1	0.067	1.000	1.000
HLA-DQB*0402	0.033	rs2076528,rs1694112,rs6937034	1,1,1	0.033	1.000	1.000
HLA-DQB*0501	0.011	rs4947332	3	0.011	1.000	1.000
HLA-DQB*0502	0.078	rs7744001,rs6906021,rs2300825	3,2,3	0.078	1.000	1.000
HLA-DQB*0503	0.044	rs1794265,rs241446	2,2	0.044	1.000	1.000
HLA-DQB*0601	0.144	rs7744001,rs6928482	1,1	0.144	1.000	1.000
HLA-DQB*0602	0.044	rs3134975,rs2621426	4,2	0.044	1.000	1.000
HLA-DQB*0603	0.011	rs3806155	4	0.011	1.000	1.000
HLA-DQB*0604	0.033	rs11758998	2	0.033	1.000	1.000
HLA-DRB*0301	0.067	rs5000803,rs7769979,rs3129299	1,4,3	0.078	0.847	1.000
HLA-DRB*0401	0.022	rs2239705,rs2395175	4,4	0.022	1.000	1.000
HLA-DRB*0403	0.033	rs2075800,rs2395175	4,4	0.033	1.000	1.000
HLA-DRB*0404	0.011	rs9404991	1	0.011	1.000	1.000
HLA-DRB*0405	0.078	rs3129878,rs2516049	3,2	0.078	1.000	1.000
HLA-DRB*0410	0.011	rs4713521,rs3130267	4,2	0.011	1.000	1.000
HLA-DRB*0701	0.067	rs3129859,rs2395177	3,2	0.056	0.824	1.000
HLA-DRB*0801	0.022	rs4713479,rs2763982	1,3	0.022	1.000	1.000
HLA-DRB*0802	0.022	rs11757862,rs1044506	1,2	0.022	1.000	1.000
HLA-DRB*0803	0.089	rs3129859,rs1041885,rs154984	2,4,2	0.100	0.878	1.000
HLA-DRB*0901	0.178	rs2395185,rs2516049	1,4	0.178	1.000	1.000
HLA-DRB*1001	0.011	rs4947332	3	0.011	1.000	1.000
HLA-DRB*1101	0.033	rs4639334,rs1383261	4,3	0.033	1.000	1.000
HLA-DRB*1201	0.056	rs2105903,rs2856718,rs206777	4,1,2	0.056	1.000	1.000
HLA-DRB*1202	0.078	rs6916742,rs646984,rs4947342	1,3,2	0.078	1.000	1.000
HLA-DRB*1301	0.011	rs3873444	2	0.011	1.000	1.000
HLA-DRB*1302	0.033	rs11758998	2	0.033	1.000	1.000
HLA-DRB*1401	0.044	rs1799964,rs3129961,rs9469185	1,3,1	0.044	1.000	1.000
HLA-DRB*1407	0.011	rs4248157	2	0.011	1.000	1.000
HLA-DRB*1444	0.011	rs429853,rs3129949	3,4	0.011	1.000	1.000
HLA-DRB*1501	0.067	rs7773756,rs6903608,rs620202	4,3,2	0.067	1.000	1.000

Supplementary Table 3 - List of tags for HLA alleles

HLA-DRB*1502	0.022	rs2858880	1	0.022	1.000	1.000
HLA-DRB*1602	0.022	rs7769073,rs2227139	4,1	0.022	1.000	1.000

## JPT

HLA allele	frequency	tags	allele	frequency	rsquared	dprime
HLA-A*0201	0.125	rs9348834,rs6457110	4,1	0.125	1.000	1.000
HLA-A*0206	0.091	rs892666,rs2517699	4,2	0.091	1.000	1.000
HLA-A*0301	0.011	rs2524172	3	0.011	1.000	1.000
HLA-A*1101	0.068	rs2893998	2	0.068	1.000	1.000
HLA-A*2402	0.341	rs1611589,rs2275854	1,2	0.341	1.000	1.000
HLA-A*2404	0.011	rs2523960,rs2240619	3,3	0.011	1.000	1.000
HLA-A*2601	0.068	rs3823339,rs1045251,rs3132571	2,4,1	0.080	0.847	1.000
HLA-A*2603	0.046	rs2745409,rs2301751	2,4	0.057	0.790	1.000
HLA-A*3001	0.011	rs3218822	1	0.011	1.000	1.000
HLA-A*3101	0.114	rs1061235,rs1150739	1,1	0.114	1.000	1.000
HLA-A*3303	0.114	rs2524005,rs1150739	1,3	0.114	1.000	1.000
HLA-B*0702	0.057	rs2523480	2	0.057	1.000	1.000
HLA-B*1301	0.011	rs1264513,rs2844573	1,3	0.011	1.000	1.000
HLA-B*1302	0.011	rs12191164	3	0.011	1.000	1.000
HLA-B*1501	0.057	rs12208824,rs6928547	4,2	0.057	1.000	1.000
HLA-B*1507	0.023	rs2532934,rs3819294	3,1	0.023	1.000	1.000
HLA-B*1518	0.011	rs1150758	2	0.011	1.000	1.000
HLA-B*3501	0.057	rs2596501,rs2844521	3,4	0.057	1.000	1.000
HLA-B*3901	0.046	rs1811197,rs3134931	4,1	0.046	1.000	1.000
HLA-B*4001	0.057	rs7381331	3	0.057	1.000	1.000
HLA-B*4002	0.148	rs3130573,rs3819299	4,2	0.148	1.000	1.000
HLA-B*4006	0.046	rs986475,rs2075788	2,3	0.046	1.000	1.000
HLA-B*4402	0.011	rs2517512	2	0.011	1.000	1.000
HLA-B*4403	0.080	rs2844523	2	0.080	1.000	1.000
HLA-B*4601	0.068	rs3873334,rs3130536,rs2251396	4,3,1	0.068	1.000	1.000
HLA-B*4801	0.011	rs4959069	2	0.011	1.000	1.000
HLA-B*5101	0.080	rs6933050,rs2596560	3,4	0.080	1.000	1.000
HLA-B*5201	0.091	rs2523608,rs2596560	4,2	0.091	1.000	1.000
HLA-B*5401	0.057	rs1634789,rs1063632	1,4	0.057	1.000	1.000
HLA-B*5601	0.011	rs2429657,rs2853926	2,3	0.011	1.000	1.000
HLA-B*5801	0.011	rs3095318	1	0.011	1.000	1.000
HLA-B*5901	0.023	rs3819284,rs2076536	1,3	0.023	1.000	1.000
HLA-B*6701	0.034	rs3828875,rs761188	4,4	0.034	1.000	1.000
HLA-C*0102	0.148	rs1264459,rs2535294,rs2524227	1,4,1	0.148	1.000	1.000
HLA-C*0103	0.011	rs660550,rs2267644	3,1	0.011	1.000	1.000
HLA-C*0302	0.011	rs7744914	3	0.011	1.000	1.000
HLA-C*0303	0.148	rs4084093,rs2853950,rs6457388	4,3,4	0.148	1.000	1.000
HLA-C*0304	0.125	rs2853950,rs3873386	1,2	0.136	0.905	1.000
HLA-C*0401	0.023	rs1632856	2	0.023	1.000	1.000
HLA-C*0501	0.011	rs2517512	2	0.011	1.000	1.000
HLA-C*0602	0.011	rs3134942	3	0.011	1.000	1.000
HLA-C*0702	0.182	rs2001181	1	0.182	1.000	1.000
HLA-C*0704	0.011	rs3093542	2	0.011	1.000	1.000
HLA-C*0801	0.057	rs2524160,rs2524227	4,3	0.057	1.000	1.000
HLA-C*1202	0.091	rs6923313,rs3873386	3,2	0.091	1.000	1.000
HLA-C*1402	0.080	rs6457300,rs130074	4,1	0.080	1.000	1.000
HLA-C*1403	0.080	rs2507997,rs2523653	2,4	0.080	1.000	1.000
HLA-C*1502	0.011	rs2240066	1	0.011	1.000	1.000
HLA-DQA*0101	0.114	rs6927022,rs2647050,rs6932517	4,1,2	0.091	0.780	1.000
HLA-DQA*0102	0.193	rs8180664,rs3134975	2,4	0.193	1.000	1.000
HLA-DQA*0103	0.182	rs7744001,rs1063355	1,1	0.171	0.925	1.000
HLA-DQA*0201	0.011	rs12191164	3	0.011	1.000	1.000
HLA-DQA*0301	0.352	rs5875382,rs2856716,rs6457617	3,1,1	0.352	1.000	1.000
HLA-DQA*0401	0.057	rs1061172,rs1056315	3,2	0.057	1.000	1.000
HLA-DQA*0501	0.080	rs7769073,rs2097432	1,4	0.080	1.000	1.000
HLA-DQA*0601	0.011	rs2736182,rs2071293	4,1	0.011	1.000	1.000
HLA-DQB*0201	0.011	rs12191164	3	0.011	1.000	1.000
HLA-DQB*0301	0.102	rs1056315	2	0.102	1.000	1.000

Supplementary Table 3 - List of tags for HLA alleles

HLA-DQB*0302	0.091	rs9275184,rs393906	3,1	0.091	1.000	1.000
HLA-DQB*0303	0.182	rs2395533,rs2300825,rs3998159	4,3,4	0.193	0.928	1.000
HLA-DQB*0401	0.091	rs2395533,rs2300825	4,1	0.091	1.000	1.000
HLA-DQB*0402	0.011	rs926594,rs7743506	2,1	0.011	1.000	1.000
HLA-DQB*0501	0.057	rs6457614	1	0.057	1.000	1.000
HLA-DQB*0502	0.011	rs6918223,rs1367731	1,4	0.011	1.000	1.000
HLA-DQB*0503	0.046	rs5000803,rs2856717	1,4	0.046	1.000	1.000
HLA-DQB*0601	0.171	rs7744001,rs1063355	1,1	0.171	1.000	1.000
HLA-DQB*0602	0.102	rs5875382,rs2647012	3,4	0.102	1.000	1.000
HLA-DQB*0603	0.011	rs2857597	1	0.011	1.000	1.000
HLA-DQB*0604	0.080	rs3892710,rs6457713	1,3	0.080	1.000	1.000
HLA-DQB*0605	0.011	rs3129267	2	0.011	1.000	1.000
HLA-DRB*0101	0.046	rs13209234,rs9276814	4,3	0.046	1.000	1.000
HLA-DRB*0401	0.011	rs1150758	2	0.011	1.000	1.000
HLA-DRB*0403	0.023	rs169494,rs3763349	4,4	0.023	1.000	1.000
HLA-DRB*0405	0.102	rs411326,rs2395185,rs4599680	2,1,1	0.102	0.768	0.876
HLA-DRB*0406	0.023	rs2395175,rs6936863	4,3	0.023	1.000	1.000
HLA-DRB*0701	0.011	rs3134942	3	0.011	1.000	1.000
HLA-DRB*0801	0.034	rs2071469,rs2116259,rs3077	4,4,1	0.034	1.000	1.000
HLA-DRB*0802	0.057	rs3129888,rs2239800	3,1	0.057	1.000	1.000
HLA-DRB*0803	0.034	rs3834856,rs412735	3,1	0.034	1.000	1.000
HLA-DRB*0812	0.011	rs2856683,rs3763350	3,1	0.011	1.000	1.000
HLA-DRB*0901	0.171	rs2187818,rs5000803,rs7756741	1,2,1	0.193	0.858	1.000
HLA-DRB*1101	0.023	rs4424079,rs1799911	1,1	0.023	1.000	1.000
HLA-DRB*1201	0.046	rs4569,rs2294881,rs1548306	1,3,1	0.046	1.000	1.000
HLA-DRB*1301	0.011	rs544167	4	0.011	1.000	1.000
HLA-DRB*1302	0.091	rs6936204,rs2157339	3,1	0.091	1.000	1.000
HLA-DRB*1401	0.034	rs4151657,rs5000803	3,1	0.034	1.000	1.000
HLA-DRB*1403	0.023	rs3819703	4	0.023	1.000	1.000
HLA-DRB*1405	0.023	rs3093953,rs440454	1,1	0.023	1.000	1.000
HLA-DRB*1501	0.102	rs7773756,rs6919855,rs6901830	4,3,3	0.102	1.000	1.000
HLA-DRB*1502	0.102	rs3135365,rs7382794	3,1	0.102	1.000	1.000