Supporting tables

Supporting Table S1: Expanded supertype classification of HLA-A alleles

Allele	Supertype	Support	Allele	Supertype	Support	Allele	Supertype	Support
A*0101	A01	Binding assay	A*0214	A02	Published motif	A*0242	A02	Structural prediction
A*0102	A01	Structural prediction	A*0215	A02	Structural prediction	A*0243	A02	Structural prediction
A*0103	A01	Structural prediction	A*0216	A02	Structural prediction	A*0244	A02	Structural prediction
A*0104	A01	Structural prediction	A*0217	A02	Structural prediction	A*0245	A02	Structural prediction
A*0106	A01	Structural prediction	A*0218	A02	Structural prediction	A*0246	A02	Structural prediction
A*0107	A01	Structural prediction	A*0219	A02	Structural prediction	A*0247	A02	Structural prediction
A*0108	A01	Structural prediction	A*0220	A02	Structural prediction	A*0248	A02	Structural prediction
A*0109	A01	Structural prediction	A*0221	A02	Structural prediction	A*0249	A02	Structural prediction
A*0110	A01	Structural prediction	A*0222	A02	Structural prediction	A*0250	A02	Structural prediction
A*0111	A01	Structural prediction	A*0224	A02	Structural prediction	A*0251	A02	Structural prediction
A*0112	A01	Structural prediction	A*0225	A02	Structural prediction	A*0254	A02	Structural prediction
A*0113	A03	Structural prediction	A*0226	A02	Structural prediction	A*0256	A02	Structural prediction
A*0114	A01	Structural prediction	A*0227	A02	Structural prediction	A*0257	A02	Structural prediction
A*0115	A01	Structural prediction	A*0228	A02	Structural prediction	A*0258	A02	Structural prediction
A*0201	A02	Binding assay	A*0229	A02	Structural prediction	A*0259	A02	Structural prediction
A*0202	A02	Binding assay	A*0230	A02	Structural prediction	A*0260	A02	Structural prediction
A*0203	A02	Binding assay	A*0231	A02	Structural prediction	A*0261	A02	Structural prediction
A*0204	A02	Published motif	A*0232	A02	Structural prediction	A*0262	A02	Structural prediction
A*0205	A02	Binding assay	A*0233	A02	Structural prediction	A*0263	A02	Structural prediction
A*0206	A02	Binding assay	A*0234	A02	Structural prediction	A*0264	A02	Structural prediction
A*0207	A02	Binding assay	A*0235	A02	Structural prediction	A*0266	A02	Structural prediction
A*0208	A02	Structural prediction	A*0236	A02	Structural prediction	A*0267	A02	Structural prediction
A*0209	A02	Structural prediction	A*0237	A02	Structural prediction	A*0268	A02	Structural prediction
A*0210	A02	Structural prediction	A*0238	A02	Structural prediction	A*0269	A02	Structural prediction
A*0211	A02	Structural prediction	A*0239	A02	Structural prediction	A*0270	A02	Structural prediction
A*0212	A02	Structural prediction	A*0240	A02	Structural prediction	A*0271	A02	Structural prediction
A*0213	A02	Structural prediction	A*0241	A02	Structural prediction	A*0272	A02	Structural prediction
A*0273	A02	Structural prediction	A*1102	A03	Structural prediction	A*2402	A24	Binding assay
A*0274	A02	Structural prediction	A*1103	A03	Structural prediction	A*2403	A24	Structural prediction
A*0275	A02	Structural prediction	A*1104	A03	Structural prediction	A*2404	A24	Structural prediction
A*0276	A02	Structural prediction	A*1105	A03	Structural prediction	A*2405	A24	Structural prediction
A*0277	A02	Structural prediction	A*1107	A03	Structural prediction	A*2406	A24	Structural prediction
A*0278	A02	Structural prediction	A*1108	A03	Structural prediction	A*2407	A24	Structural prediction
A*0279	A02	Structural prediction	A*1109	A03	Structural prediction	A*2408	A24	Structural prediction
A*0281	A02	Structural prediction	A*1112	A03	Structural prediction	A*2409	A24	Structural prediction
A*0282	A02	Structural prediction	A*1113	A03	Structural prediction	A*2410	A24	Structural prediction

Allele	Supertype	Support	Allele	Supertype	Support	Allele	Supertype	Support
A*0283	A02	Structural prediction	A*1114	A03	Structural prediction	A*2411	A24	Structural prediction
A*0284	A02	Structural prediction	A*1115	A03	Structural prediction	A*2413	A24	Structural prediction
A*0285	A02	Structural prediction	A*1116	A03	Structural prediction	A*2414	A24	Structural prediction
A*0286	A02	Structural prediction	A*1117	A01	Structural prediction	A*2415	A24	Structural prediction
A*0301	A03	Binding assay	A*1119	A03	Structural prediction	A*2417	A24	Structural prediction
A*0302	A03	Structural prediction	A*1120	A03	Structural prediction	A*2418	A24	Structural prediction
A*0304	A03	Structural prediction	A*1121	A03	Structural prediction	A*2420	A24	Structural prediction
A*0305	A03	Structural prediction	A*1122	A03	Structural prediction	A*2421	A24	Structural prediction
A*0306	A03	Structural prediction	A*1123	A03	Structural prediction	A*2422	A24	Structural prediction
A*0307	A03	Structural prediction	A*2301	A24	Binding assay	A*2423	A24	Structural prediction
A*0308	A03	Structural prediction	A*2302	A24	Structural prediction	A*2425	A24	Structural prediction
A*0310	A03	Structural prediction	A*2303	A24	Structural prediction	A*2426	A24	Structural prediction
A*0311	A03	Structural prediction	A*2304	A24	Structural prediction	A*2427	A24	Structural prediction
A*0312	A03	Structural prediction	A*2305	A24	Structural prediction	A*2429	A24	Structural prediction
A*0313	A03	Structural prediction	A*2306	A24	Structural prediction	A*2430	A24	Structural prediction
A*0314	A03	Structural prediction	A*2307	A24	Structural prediction	A*2432	A24	Structural prediction
A*0315	A03	Structural prediction	A*2308	A24	Structural prediction	A*2433	A24	Structural prediction
A*0316	A03	Structural prediction	A*2309	A24	Structural prediction	A*2434	A24	Structural prediction
A*0317	A03	Structural prediction	A*2310	A24	Structural prediction	A*2435	A24	Structural prediction
A*1101	A03	Binding assay	A*2312	A24	Structural prediction	A*2437	A24	Structural prediction
A*2438	A24	Structural prediction	A*2614	A01	Structural prediction	A*3007	A01	Structural prediction
A*2439	A24	Structural prediction	A*2615	A01	Structural prediction	A*3008	A01**	Structural prediction
A*2440	A24	Structural prediction	A*2616	A01	Structural prediction	A*3009	A01	Structural prediction
A*2441	A24	Structural prediction	A*2617	A01	Structural prediction	A*3010	A01	Structural prediction
A*2442	A24	Structural prediction	A*2618	A01	Structural prediction	A*3011	A01**	Structural prediction
A*2443	A24	Structural prediction	A*2619	A01	Structural prediction	A*3012	A01	Structural prediction
A*2446	A24	Structural prediction	A*2620	A01	Structural prediction	A*3014	A01**	Structural prediction
A*2447	A24	Structural prediction	A*2622	A01	Structural prediction	A*3015	A01**	Structural prediction
A*2448	A24	Structural prediction	A*2623	A01	Structural prediction	A*3101	A03	Binding assay
A*2449	A24	Structural prediction	A*2624	A01	Structural prediction	A*3102	A03	Structural prediction
A*2450	A24	Structural prediction	A*2626	A01	Structural prediction	A*3103	A03	Structural prediction
A*2451	A24	Structural prediction	A*2901	A01*	Structural prediction	A*3104	A03	Structural prediction
A*2452	A24	Structural prediction	A*2902	A01*	Binding assay	A*3105	A03	Structural prediction
A*2453	A24	Structural prediction	A*2903	A01*	Structural prediction	A*3106	A03	Structural prediction
A*2501	A01	Structural prediction	A*2904	A01*	Structural prediction	A*3107	A01	Structural prediction
A*2502	A01	Structural prediction	A*2905	A01*	Structural prediction	A*3108	A01	Structural prediction
A*2503	A01	Structural prediction	A*2906	A01*	Structural prediction	A*3109	A03	Structural prediction
A*2504	A01	Structural prediction	A*2907	A01	Structural prediction	A*3110	A01	Structural prediction
A*2601	A01	Binding assay	A*2909	A01*	Structural prediction	A*3111	A03	Structural prediction

Allele	Supertype	Support	Allele	Supertype	Support	Allele	Supertype	Support
A*2602	A01	Published motif	A*2910	A01*	Structural prediction	A*3112	A03	Structural prediction
A*2604	A01	Structural prediction	A*2911	A01*	Structural prediction	A*3201	A01	Binding assay
A*2605	A01	Structural prediction	A*2912	A01*	Structural prediction	A*3202	A01	Structural prediction
A*2607	A01	Structural prediction	A*2913	A01*	Structural prediction	A*3203	A01	Structural prediction
A*2608	A01	Structural prediction	A*2914	A01	Structural prediction	A*3204	A01	Structural prediction
A*2609	A01	Structural prediction	A*3001	A01**	Binding assay	A*3205	A01	Structural prediction
A*2610	A01	Structural prediction	A*3002	A01	Binding assay	A*3206	A01	Structural prediction
A*2611	A01	Structural prediction	A*3003	A01	Structural prediction	A*3207	A01	Structural prediction
A*2612	A01	Structural prediction	A*3004	A01	Structural prediction	A*3208	A01	Structural prediction
A*2613	A01	Structural prediction	A*3006	A01	Structural prediction	A*3209	A01	Structural prediction
A*3210	A01	Structural prediction	A*6601	A03	Published motif	A*6822	A03	Structural prediction
A*3301	A03	Binding assay	A*6602	A03	Published motif	A*6823	A03	Structural prediction
A*3302	A03	Published motif	A*6603	A03	Structural prediction	A*6824	A03	Structural prediction
A*3303	A03	Published motif	A*6604	A03	Structural prediction	A*6825	A03	Structural prediction
A*3304	A03	Structural prediction	A*6801	A03	Binding assay	A*6826	A03	Structural prediction
A*3305	A03	Structural prediction	A*68011	A03	Binding assay	A*6827	A02	Structural prediction
A*3306	A03	Structural prediction	A*68012	A03	Binding assay	A*6828	A02	Structural prediction
A*3307	A03	Structural prediction	A*6802	A02	Binding assay	A*6901	A02	Published motif
A*3308	A03	Structural prediction	A*6803	A03	Structural prediction	A*74	A03	Binding assay
A*3401	A03	Structural prediction	A*6804	A03	Structural prediction	A*7401	A03	Structural prediction
A*3402	A03	Structural prediction	A*6808	A03	Structural prediction	A*7402	A03	Structural prediction
A*3403	A03	Structural prediction	A*6809	A03	Structural prediction	A*7403	A03	Structural prediction
A*3404	A03	Structural prediction	A*6810	A03	Structural prediction	A*7404	A03	Structural prediction
A*3405	A03	Structural prediction	A*6812	A03	Structural prediction	A*7405	A03	Structural prediction
A*3406	A03	Structural prediction	A*6813	A03	Structural prediction	A*7407	A03	Structural prediction
A*3601	A01	Structural prediction	A*6814	A03	Structural prediction	A*7408	A03	Structural prediction
A*3602	A01	Structural prediction	A*6815	A02	Structural prediction	A*7409	A03	Structural prediction
A*3603	A01	Structural prediction	A*6816	A03	Structural prediction	A*7410	A03	Structural prediction
A*3604	A01	Structural prediction	A*6819	A03	Structural prediction	A*7411	A03	Structural prediction
A*4301	A01	Structural prediction	A*6821	A03	Structural prediction	A*8001	A01	Structural prediction

A01*: A01 (and A24)

A01**: A01 (and A03)

Supporting Table S2: Expanded supertype assignments for HLA-B alleles

Allele	Supertype	Support	Allele	Supertype	Support	Allele	Supertype	Support
B*0702	B07	Binding assay	B*0735	B07	Structural prediction	B*1503	B27	Binding assay
B*0703	B07	Published motif	B*0736	B07	Structural prediction	B*1504	B62	Published motif
B*0704	B07	Published motif	B*0737	B07	Structural prediction	B*1505	B62	Published motif
B*0705	B07	Published motif	B*0738	B07	Structural prediction	B*1506	B62	Structural prediction
B*0706	B07	Structural prediction	B*0739	B07	Structural prediction	B*1507	B62	Published motif
B*0707	B07	Structural prediction	B*0740	B07	Structural prediction	B*1508	B07	Published motif
B*0708	B07	Structural prediction	B*0741	B07	Structural prediction	B*1509	B27	Published motif
B*0709	B07	Structural prediction	B*0742	B07	Structural prediction	B*1510	B27	Structural prediction
B*0711	B07	Structural prediction	B*0743	B07	Structural prediction	B*1511	B07	Structural prediction
B*0712	B07	Structural prediction	B*1301	B62	Structural prediction	B*1512	B62	Structural prediction
B*0714	B07	Structural prediction	B*1302	B62	Structural prediction	B*1513	B62	Published motif
B*0715	B07	Structural prediction	B*1303	B62	Structural prediction	B*1514	B62	Structural prediction
B*0716	B07	Structural prediction	B*1304	B62	Structural prediction	B*1515	B62	Structural prediction
B*0717	B07	Structural prediction	B*1306	B62	Structural prediction	B*1516	B58	Published motif
B*0718	B07	Structural prediction	B*1308	B62	Structural prediction	B*1517	B58	Published motif
B*0719	B07	Structural prediction	B*1309	B62	Structural prediction	B*1518	B27	Structural prediction
B*0720	B07	Structural prediction	B*1310	B62	Structural prediction	B*1519	B62	Structural prediction
B*0721	B07	Structural prediction	B*1311	B62	Structural prediction	B*1520	B62	Published motif
B*0722	B07	Structural prediction	B*1312	B62	Structural prediction	B*1523	B27	Structural prediction
B*0723	B07	Structural prediction	B*1313	B62	Structural prediction	B*1524	B62	Structural prediction
B*0724	B07	Structural prediction	B*1401	B27	Published motif	B*1525	B62	Structural prediction
B*0725	B07	Structural prediction	B*1402	B27	Published motif	B*1527	B62	Structural prediction
B*0726	B07	Structural prediction	B*1403	B27	Structural prediction	B*1528	B62	Structural prediction
B*0730	B07	Structural prediction	B*1405	B27	Structural prediction	B*1530	B62	Structural prediction
B*0731	B07	Structural prediction	B*1406	B27	Structural prediction	B*1531	B62	Structural prediction
B*0732	B07	Structural prediction	B*1407	B27	Structural prediction	B*1533	B62	Structural prediction
B*0733	B07	Structural prediction	B*1501	B62	Binding assay	B*1534	B62	Structural prediction
B*0734	B07	Structural prediction	B*1502	B62	Published motif	B*1535	B62	Structural prediction
B*1536	B62	Structural prediction	B*1572	B27	Structural prediction	B*1806	B44	Structural prediction
B*1537	B27	Structural prediction	B*1573	B62	Structural prediction	B*1809	B44	Structural prediction
B*1538	B62	Structural prediction	B*1574	B27	Structural prediction	B*1810	B44	Structural prediction
B*1539	B62	Structural prediction	B*1575	B62	Structural prediction	B*1811	B44	Structural prediction
B*1540	B62	Structural prediction	B*1577	B62	Structural prediction	B*1813	B44	Structural prediction
B*1542	B62	Structural prediction	B*1578	B62	Structural prediction	B*1814	B44	Structural prediction
B*1543	B62	Structural prediction	B*1580	B27	Structural prediction	B*1815	B44	Structural prediction
B*1545	B62	Structural prediction	B*1581	B62	Structural prediction	B*1819	B44	Structural prediction
B*1547	B27	Structural prediction	B*1582	B62	Structural prediction	B*1820	B44	Structural prediction
B*1548	B62	Structural prediction	B*1583	B62	Structural prediction	B*2701	B27	Structural prediction

Allele	Supertype	Support	Allele	Supertype	Support	Allele	Supertype	Support
B*1549	B27	Structural prediction	B*1584	B62	Structural prediction	B*2702	B27	Published motif
B*1550	B62	Structural prediction	B*1585	B62	Structural prediction	B*2703	B27	Published motif
B*1551	B27	Structural prediction	B*1586	B62	Structural prediction	B*2704	B27	Published motif
B*1552	B27	Structural prediction	B*1587	B62	Structural prediction	B*2705	B27	Binding assay
B*1553	B44	Structural prediction	B*1588	B62	Structural prediction	B*2706	B27	Published motif
B*1554	B27	Structural prediction	B*1589	B62	Structural prediction	B*2707	B27	Structural prediction
B*1555	B62	Structural prediction	B*1590	B27	Structural prediction	B*2708	B27	Structural prediction
B*1557	B62	Structural prediction	B*1591	B27	Structural prediction	B*2710	B27	Structural prediction
B*1558	B62	Structural prediction	B*1592	B62	Structural prediction	B*2711	B27	Structural prediction
B*1560	B62	Structural prediction	B*1593	B27	Structural prediction	B*2713	B27	Structural prediction
B*1561	B27	Structural prediction	B*1595	B58	Structural prediction	B*2714	B27	Structural prediction
B*1562	B27	Structural prediction	B*1596	B62	Structural prediction	B*2715	B27	Structural prediction
B*1563	B62	Structural prediction	B*1597	B62	Structural prediction	B*2717	B27	Structural prediction
B*1565	B62	Structural prediction	B*1598	B27	Structural prediction	B*2719	B27	Structural prediction
B*1567	B58	Structural prediction	B*1801	B44	Binding assay	B*2720	B27	Structural prediction
B*1568	B27	Structural prediction	B*1802	B44	Structural prediction	B*2721	B27	Structural prediction
B*1569	B27	Structural prediction	B*1803	B44	Structural prediction	B*2724	B27	Structural prediction
B*1570	B62	Structural prediction	B*1804	B44	Structural prediction	B*2725	B27	Structural prediction
B*1571	B62	Structural prediction	B*1805	B44	Structural prediction	B*2727	B27	Structural prediction
B*2728	B27	Structural prediction	B*3533	B07	Structural prediction	B*3706	B44	Structural prediction
B*2730	B27	Structural prediction	B*3534	B07	Structural prediction	B*3709	B44	Structural prediction
B*3501	B07	Binding assay	B*3535	B07	Structural prediction	B*3801	B27	Published motif
B*3502	B07	Published motif	B*3536	B07	Structural prediction	B*3802	B27	Published motif
B*3503	B07	Binding assay	B*3537	B07	Structural prediction	B*3803	B27	Structural prediction
B*3504	B07	Published motif	B*3538	B07	Structural prediction	B*3804	B27	Structural prediction
B*3505	B07	Published motif	B*3539	B07	Structural prediction	B*3805	B27	Structural prediction
B*3506	B07	Published motif	B*3540	B07	Structural prediction	B*3808	B27	Structural prediction
B*3507	B07	Published motif	B*3541	B07	Structural prediction	B*3809	B27	Structural prediction
B*3508	B07	Binding assay	B*3542	B07	Structural prediction	B*3810	B27	Structural prediction
B*3509	B07	Structural prediction	B*3543	B07	Structural prediction	B*3811	B27	Structural prediction
B*35091	B07	Structural prediction	B*3544	B07	Structural prediction	B*3901	B27	Published motif
B*35092	B07	Structural prediction	B*3545	B07	Structural prediction	B*3902	B27	Published motif
B*3511	B07	Structural prediction	B*3546	B07	Structural prediction	B*3903	B27	Published motif
B*3512	B07	Structural prediction	B*3551	B07	Structural prediction	B*3904	B27	Published motif
B*3514	B07	Structural prediction	B*3552	B07	Structural prediction	B*3905	B27	Published motif
B*3515	B07	Structural prediction	B*3553	B07	Structural prediction	B*3906	B27	Structural prediction
B*3517	B07	Structural prediction	B*3554	B07	Structural prediction	B*3907	B27	Structural prediction
B*3518	B07	Structural prediction	B*3555	B07	Structural prediction	B*3908	B27	Structural prediction
B*3521	B07	Structural prediction	B*3556	B07	Structural prediction	B*3909	B27	Structural prediction

Allele	Supertype	Support	Allele	Supertype	Support	Allele	Supertype	Support
B*3522	B07	Structural prediction	B*3557	B07	Structural prediction	B*3910	B07	Structural prediction
B*3523	B07	Structural prediction	B*3558	B07	Structural prediction	B*3911	B27	Structural prediction
B*3524	B07	Structural prediction	B*3560	B07	Structural prediction	B*3912	B27	Structural prediction
B*3527	B07	Structural prediction	B*3561	B07	Structural prediction	B*3913	B27	Structural prediction
B*3528	B62	Structural prediction	B*3701	B44	Published motif	B*3914	B27	Structural prediction
B*3529	B07	Structural prediction	B*3702	B44	Structural prediction	B*3915	B27	Structural prediction
B*3530	B07	Structural prediction	B*3703	B44	Structural prediction	B*3916	B07	Structural prediction
B*3531	B07	Structural prediction	B*3704	B44	Structural prediction	B*3917	B07	Structural prediction
B*3532	B07	Structural prediction	B*3705	B44	Structural prediction	B*3918	B27	Structural prediction
B*3920	B07	Structural prediction	B*4016	B44	Structural prediction	B*4050	B44	Structural prediction
B*3922	B27	Structural prediction	B*4018	B44	Structural prediction	B*4051	B44	Structural prediction
B*3923	B27	Structural prediction	B*4019	B44	Structural prediction	B*4052	B44	Structural prediction
B*3924	B27	Structural prediction	B*4020	B44	Structural prediction	B*4053	B44	Structural prediction
B*3925	B27	Structural prediction	B*4021	B62	Structural prediction	B*4054	B44	Structural prediction
B*3926	B27	Structural prediction	B*4022	B44	Structural prediction	B*4055	B44	Structural prediction
B*3927	B27	Structural prediction	B*4023	B44	Structural prediction	B*4056	B44	Structural prediction
B*3928	B27	Structural prediction	B*4024	B44	Structural prediction	B*4057	B44	Structural prediction
B*3929	B27	Structural prediction	B*4025	B44	Structural prediction	B*4058	B44	Structural prediction
B*3930	B27	Structural prediction	B*4026	B44	Structural prediction	B*4059	B44	Structural prediction
B*3931	B27	Structural prediction	B*4027	B44	Structural prediction	B*4060	B44	Structural prediction
B*3932	B27	Structural prediction	B*4028	B44	Structural prediction	B*4061	B44	Structural prediction
B*3933	B27	Structural prediction	B*4029	B44	Structural prediction	B*4101	B44	Structural prediction
B*3934	B27	Structural prediction	B*4030	B44	Structural prediction	B*4102	B44	Structural prediction
B*4001	B44	Binding assay	B*4033	B44	Structural prediction	B*4103	B44	Structural prediction
B*4002	B44	Binding assay	B*4034	B44	Structural prediction	B*4104	B44	Structural prediction
B*4003	B44	Structural prediction	B*4035	B44	Structural prediction	B*4105	B44	Structural prediction
B*4004	B44	Structural prediction	B*4036	B44	Structural prediction	B*4106	B44	Structural prediction
B*4005	B44	Structural prediction	B*4037	B44	Structural prediction	B*4107	B44	Structural prediction
B*4006	B44	Published motif	B*4038	B44	Structural prediction	B*4201	B07	Binding assay
B*4007	B44	Structural prediction	B*4039	B44	Structural prediction	B*4202	B07	Structural prediction
B*4008	B44	Structural prediction	B*4040	B44	Structural prediction	B*4204	B07	Structural prediction
B*4009	B44	Structural prediction	B*4042	B44	Structural prediction	B*4205	B07	Structural prediction
B*4010	B44	Structural prediction	B*4043	B44	Structural prediction	B*4206	B07	Structural prediction
B*4011	B44	Structural prediction	B*4044	B44	Structural prediction	B*4402	B44	Binding assay
B*4012	B27	Structural prediction	B*4045	B44	Structural prediction	B*4403	B44	Binding assay
B*4013	B44	Structural prediction	B*4047	B44	Structural prediction	B*44031	B44	Binding assay
B*4014	B44	Structural prediction	B*4048	B44	Structural prediction	B*44032	B44	Binding assay
B*4015	B44	Structural prediction	B*4049	B44	Structural prediction	B*4404	B44	Published motif
B*4405	B44	Structural prediction	B*4436	B44	Structural prediction	B*4807	B27	Structural prediction

Allele	Supertype	Support	Allele	Supertype	Support	Allele	Supertype	Support
B*4406	B07	Structural prediction	B*4437	B44	Structural prediction	B*4808	B27	Structural prediction
B*4407	B44	Structural prediction	B*4438	B44	Structural prediction	B*4809	B27	Structural prediction
B*4409	B44	Structural prediction	B*4439	B44	Structural prediction	B*4810	B27	Structural prediction
B*4410	B44	Structural prediction	B*4440	B44	Structural prediction	B*4811	B27	Structural prediction
B*4411	B44	Structural prediction	B*4441	B44	Structural prediction	B*4812	B27	Structural prediction
B*4412	B44	Structural prediction	B*4442	B44	Structural prediction	B*4813	B27	Structural prediction
B*4413	B44	Structural prediction	B*4501	B44	Binding assay	B*4901	B44	Structural prediction
B*4414	B44	Structural prediction	B*4502	B44	Structural prediction	B*4902	B44	Structural prediction
B*4415	B44	Structural prediction	B*4503	B44	Structural prediction	B*4904	B44	Structural prediction
B*4416	B44	Structural prediction	B*4504	B44	Structural prediction	B*5001	B44	Structural prediction
B*4417	B44	Structural prediction	B*4505	B44	Structural prediction	B*5002	B44	Structural prediction
B*4418	B44	Structural prediction	B*4506	B44	Structural prediction	B*5004	B44	Structural prediction
B*4420	B44	Structural prediction	B*4507	B44	Structural prediction	B*5101	B07	Binding assay
B*4421	B44	Structural prediction	B*4601	multiple	Published motif	B*5102	B07	Published motif
B*4422	B44	Structural prediction	B*4602	multiple	Structural prediction	B*5103	B07	Published motif
B*4423	B44	Structural prediction	B*4603	multiple	Structural prediction	B*5104	B07	Published motif
B*4424	B44	Structural prediction	B*4604	multiple	Structural prediction	B*5105	B07	Published motif
B*4425	B44	Structural prediction	B*4605	multiple	Structural prediction	B*5106	B07	Structural prediction
B*4426	B44	Structural prediction	B*4701	B44	Structural prediction	B*5108	B07	Structural prediction
B*4427	B44	Structural prediction	B*4702	B44	Structural prediction	B*5109	B07	Structural prediction
B*4428	B44	Structural prediction	B*4703	B44	Structural prediction	B*5110	B07	Structural prediction
B*4429	B44	Structural prediction	B*4704	B44	Structural prediction	B*5111	B07	Structural prediction
B*4430	B44	Structural prediction	B*4705	B44	Structural prediction	B*5112	B07	Structural prediction
B*4431	B44	Structural prediction	B*4801	B27	Structural prediction	B*5113	B07	Structural prediction
B*4432	B44	Structural prediction	B*4802	B27	Structural prediction	B*5114	B07	Structural prediction
B*4433	B44	Structural prediction	B*4803	B27	Structural prediction	B*5115	B07	Structural prediction
B*4434	B44	Structural prediction	B*4804	B27	Structural prediction	B*5116	B07	Structural prediction
B*4435	B44	Structural prediction	B*4805	B27	Structural prediction	B*5117	B07	Structural prediction
B*5118	B07	Structural prediction	B*5304	B07	Structural prediction	B*5602	B07	Published motif
B*5119	B07	Structural prediction	B*5305	B07	Structural prediction	B*5603	B07	Structural prediction
B*5120	B07	Structural prediction	B*5306	B07	Structural prediction	B*5604	B07	Structural prediction
B*5121	B07	Structural prediction	B*5308	B07	Structural prediction	B*5605	B07	Structural prediction
B*5123	B07	Structural prediction	B*5309	B07	Structural prediction	B*5607	B07	Structural prediction
B*5124	B07	Structural prediction	B*5310	B07	Structural prediction	B*5609	B07	Structural prediction
B*5126	B07	Structural prediction	B*5401	B07	Binding assay	B*5610	B07	Structural prediction
B*5127	B07	Structural prediction	B*5403	B07	Structural prediction	B*5611	B07	Structural prediction
B*5128	B07	Structural prediction	B*5404	B07	Structural prediction	B*5612	B07	Structural prediction
B*5129	B07	Structural prediction	B*5406	B07	Structural prediction	B*5613	B07	Structural prediction
B*5130	B07	Structural prediction	B*5407	B07	Structural prediction	B*5615	B07	Structural prediction

Allele	Supertype	Support	Allele	Supertype	Support	Allele	Supertype	Support
B*5131	B07	Structural prediction	B*5501	B07	Published motif	B*5616	B07	Structural prediction
B*5132	B07	Structural prediction	B*5502	B07	Published motif	B*5701	B58	Binding assay
B*5133	B07	Structural prediction	B*5503	B07	Structural prediction	B*5702	B58	Published motif
B*5134	B07	Structural prediction	B*5504	B07	Structural prediction	B*5703	B58	Published motif
B*5135	B07	Structural prediction	B*5505	B07	Structural prediction	B*5704	B58	Structural prediction
B*5136	B07	Structural prediction	B*5507	B07	Structural prediction	B*5705	B58	Structural prediction
B*5137	B07	Structural prediction	B*5508	B07	Structural prediction	B*5706	B58	Structural prediction
B*5138	B07	Structural prediction	B*5509	B07	Structural prediction	B*5707	B58	Structural prediction
B*5201	B62	Published motif	B*5510	B07	Structural prediction	B*5708	B58	Structural prediction
B*5202	B62	Structural prediction	B*5511	B07	Structural prediction	B*5709	B58	Structural prediction
B*5203	B62	Structural prediction	B*5512	B07	Structural prediction	B*5801	B58	Binding assay
B*5204	B62	Structural prediction	B*5513	B07	Structural prediction	B*5802	B58	Binding assay
B*5205	B62	Structural prediction	B*5514	B07	Structural prediction	B*5804	B58	Structural prediction
B*5207	B62	Structural prediction	B*5515	B07	Structural prediction	B*5805	B58	Structural prediction
B*5208	B62	Structural prediction	B*5516	B07	Structural prediction	B*5806	B58	Structural prediction
B*5301	B07	Binding assay	B*5517	B07	Structural prediction	B*5807	B58	Structural prediction
B*5302	B07	Structural prediction	B*5519	B07	Structural prediction	B*5808	B58	Structural prediction
B*5303	B07	Structural prediction	B*5601	B07	Published motif	B*5809	B58	Structural prediction
B*5811	B58	Structural prediction	B*7804	B07	Structural prediction	B*8301	B07	Structural prediction
B*5901	B07	Structural prediction	B*7805	B62	Structural prediction	B*9502	B62	Structural prediction
B*6701	B07	Published motif	B*8101	B07	Structural prediction	B*9503	B27	Structural prediction
B*7301	B27	Structural prediction	B*8102	B07	Structural prediction	B*9504	B62	Structural prediction
B*7801	B07	Published motif	B*8201	B07	Structural prediction			
B*7802	B07	Structural prediction	B*8202	B07	Structural prediction			

Multiple: A01, B58 and B62

Supporting Table S3: binding motifs for HLA alleles and supertypes

HLA binding motif	supertype binding motif
A01: xx[DE]xxxxx[Y]	A1: x[TI(SVLM)]xxxxxx[WFY]
A02: x[LVMQ(A)]xxxxxx[LV(M)]	A2: x[LIVMATQ]xxxxxx[LIVMAT]
A03: x[LVM(IAST)]xxxxxx[KYF(R)]	A3: x[AILMVST]xxxxxx[RK]
A11: xxxxxxxx[KR]	A3: x[AILMVST]xxxxxx[RK]
A23: xxxxxxxxx	A24: x[YF(WIVLMT)]xxxxxx[FI(YWLM)]
A24: x[YF]xxxxxx[FWIL]	A24: x[YF(WIVLMT)]xxxxxx[FI(YWLM)]
A25: xxxxxxxxx	A1: x[TI(SVLM)]xxxxxx[WFY]
A26: x[VTILF]xxxxxx[YFML]	A1: x[TI(SVLM)]xxxxxx[WFY]
A29: x[E(M)]xxxxxx[Y(L)]	A1: x[TI(SVLM)]xxxxxx[WFY] or A24: x[YF(WIVLMT)]xxxxxx[FI(YWLM)]
A30: x[YFVLI(MT)]xxxxxx[LYM(F)]	A1: x[TI(SVLM)]xxxxxx[WFY]
A31: xxxxxxxx[R]	A3: x[AILMVST]xxxxxx[RK]
A32: xxxxxxxxx	A1: x[TI(SVLM)]xxxxxx[WFY]
A33: xxxxxxxx[R]	A3: x[AILMVST]xxxxxx[RK]
A34: xxxxxxxxx	A34: ; A3: x[AILMVST]xxxxxx[RK]
A36: xxxxxxxxx	A1: x[TI(SVLM)]xxxxxx[WFY]
A66: x[TV(APLIC)]xxxxxx[RK]	A3: x[AILMVST]xxxxxx[RK]
A6801: x[57]xxxxxx[RK]	A3: x[AILMVST]xxxxxx[RK]
A6802: xxxxxxxxx	A2: x[LIVMATQ]xxxxxx[LIVMAT]
A74: xxxxxxxxx	A1: x[TI(SVLM)]xxxxxx[WFY]
A80: xxxxxxxxx	A1: x[TI(SVLM)]xxxxxx[WFY]
B07: x[P(NDV)]xxxxxx[LF]	B7: x[P]xxxxxx[ALIMVFWY]
B08: xx[K(RY)]x[KR(H)]xxx[L(FM)]	B8: xx[K(RY)]x[KR(H)]xxx[L(FM)]
B13: xxxxxxxxx	B62: x[QL(IVMP)]xxxxxx[FWY(MIV)]
B14: x[RK]xx[RH]xxx[L]	B27: x[RQMKH]xxxxxx[LFYRHKILWMV]
B1501: x[Q(LMVP)]xxxxxx[YF]	B62: x[QL(IVMP)]xxxxxx[FWY(MIV)]
B1503: x[QK]xxxxxx[YF]	B27: x[RQMKH]xxxxxx[LFYRHKILWMV]
B1510: x[H]xxxxxx[L(F)]	B27: x[RQMKH]xxxxxx[LFYRHKILWMV]
B1516: x[ST(F)]xxxxxx[IVYF(M)]	B58: x[AST]xxxxxx[FWY(LIV)]
B1517: x[TS]xxxxxx[YFLI]	B58: x[AST]xxxxxx[FWY(LIV)]
B1518: x[H]xxxxxx[Y(F)]	B27: x[RQMKH]xxxxxx[LFYRHKILWMV]
B18: x[E]xxxxxxx	B44: x[E(D)]xxxxxx[FWYLIMVA]
B27: x[RQMK]xxxxxx[LFYRHKILWMV]	B27: x[RQMKH]xxxxxx[LFYRHKILWMV]
B35: x[P(AVYRDMILF)]xxxxxx[YFMLI]	B7: x[P]xxxxxx[ALIMVFWY]
B37: x[DE(HPGSL)]xxxxx[FML(QKYL)]|[IL(TENDQGH)]	B44: x[E(D)]xxxxxx[FWYLIMVA]
B38: xxxxxxxx[FL(I)]	B27: x[RQMKH]xxxxxx[LFYRHKILWMV]
B39: x[KQRH]xxxxxx[L(FVIM)]	B27: x[RQMKH]xxxxxx[LFYRHKILWMV]
B40: x[E(P)]xxxxxx[LWMATRV(AP)]	B44: x[E(D)]xxxxxx[FWYLIMVA]
B41: xxxxxxxxx	B44: x[E(D)]xxxxxx[FWYLIMVA]
B42: xxxxxxxxx	B7: x[P]xxxxxx[ALIMVFWY]
B44: x[E(MILVD)]xxxxxx[YF]	B44: x[E(D)]xxxxxx[FWYLIMVA]
B45: xxxxxxxxx	B44: x[E(D)]xxxxxx[FWYLIMVA]
B46: x[M(I)]xxxxxx[YF]	B62: x[QL(IVMP)]xxxxxx[FWY(MIV)]
B49: xxxxxxxxx	B44: x[E(D)]xxxxxx[FWYLIMVA]

HLA binding motif	supertype binding motif
B51: x[APG(WF)]xxxxxx[VIF(WMVL)]	B7: x[P]xxxxxx[ALIMVFWY]
B52: xxxxxxx[IV(MF)][IV(MF)]	B62: x[QL(IVMP)]xxxxxx[FWY(MIV)]
B53: x[P]xxxxxx[WFL]	B7: x[P]xxxxxx[ALIMVFWY]
B55: x[P]xxxxxxx	B7: x[P]xxxxxx[ALIMVFWY]
B57: x[ATS]xxxxxx[FWY]	B58: x[AST]xxxxxx[FWY(LIV)]
B58: x[AST(G)]xxx[R]xx[FW(Y)]	B58: x[AST]xxxxxx[FWY(LIV)]
Cw01: x[AL][P]xxxxx[L]	no HLA-Cw supertypes
Cw02: x[A]xxxxxx[L]	no HLA-Cw supertypes
Cw03: x[A]xxxxxx[LFM]	no HLA-Cw supertypes
Cw04: x[YPF]xxxxxx[LFM]	no HLA-Cw supertypes
Cw05: x[A]xxxxxx[LF]	no HLA-Cw supertypes
Cw06: x[ALPRQ]xxxxxx[LIVY]	no HLA-Cw supertypes
Cw07: x[RHKYPQ]xxxxxx[YFL]	no HLA-Cw supertypes
Cw08: x[A]xxxxxx[LM]	no HLA-Cw supertypes
Cw12: x[A]xxxxxx[FWY]	no HLA-Cw supertypes
Cw14: x[YP]xxxxxx[FWY]	no HLA-Cw supertypes
Cw15: x[A]xxxxxx[LMYFY]	no HLA-Cw supertypes
Cw16: x[A]xxxxxx[FWYL]	no HLA-Cw supertypes
Cw17: x[A]xxxxxx[L]	no HLA-Cw supertypes
Cw18: x[RQ]xxxxxx[LY]	no HLA-Cw supertypes

Supporting Table S4: Associations of epitopes with alterntative alleles detected with both algorithms

pathogen	peptide	original HLA	alternative HLA	p-value LANL	p-value MSR	q-value MSR
HIV	AENLWVTVY	B44	B39	2.0E-02	3.8E-04	0.06
HIV	AENLWVTVY	B44	B52	2.1E-02	9.5E-03	0.47
HIV	AEQASQDVKNW	B44	B53	7.1E-05	2.2E-05	0.00
HIV	AEQASQDVKNW	B44	B45	2.6E-04	1.6E-04	0.03
HIV	AEQASQDVKNW	B44	B58	1.0E-02	7.7E-03	0.45
HIV	AIFQSSMTK	A03 / A11	A02	2.3E-02	5.8E-03	0.38
HIV	AIIRILQQL	A02	A11	6.5E-02	1.6E-02	0.63
HIV	ALVEICTEM	A02	A6801	3.1E-02	6.9E-03	0.44
HIV	AVDLSHFLK	A03 / A11	Cw08	1.3E-02	3.5E-03	0.30
HIV	AVDLSHFLK	A03 / A11	A6801	1.0E-02	3.5E-03	0.30
HIV	AVDLSHFLK	A03 / A11	B07	1.3E-02	5.5E-03	0.38
EBV	AVFDRKSDAK	A11	Cw04	1.8E-02	4.7E-03	0.46
HIV	AVFIHNFKRK	A03 / A11	A74	6.0E-03	3.6E-03	0.31
HIV	AVFIHNFKRK	A03 / A11	B47	1.0E-02	7.1E-03	0.44
EBV	AVLLHEESM	B35	A31	3.3E-02	8.0E-03	0.54
HIV	AVRHFPRIW	B57	B14	7.4E-03	3.8E-03	0.33
HIV	AVRHFPRIW	B57	B52	4.1E-02	4.8E-03	0.36
HIV	AVRHFPRIW	B57	A6802	4.2E-02	3.5E-02	0.86
EBV	AYSSWMYSY	A30	B49	6.3E-02	1.8E-02	0.72
HIV	CCFHCQVC	Cw12	B45	6.1E-02	1.7E-02	0.67
HIV	CCFHCQVC	Cw12	B55	8.7E-02	3.0E-02	0.81
HIV	CCFHCQVC	Cw12	B14	7.9E-02	4.6E-02	0.92
EBV	CLGGLLTMV	A02	B57	5.1E-02	9.0E-03	0.58
HIV	DCKTILKAL	B08	B1503	5.7E-03	1.2E-04	0.03
EBV	DEVEFLGHY	B18	A30	9.7E-03	2.2E-03	0.35
HIV	DTVLEEMNL	A6802	Cw17	5.4E-03	7.7E-03	0.45
HIV	DTVLEEMNL	A6802	A6801	2.7E-02	9.6E-03	0.48
HIV	DTVLEEMNL	A6802	A36	6.7E-02	4.1E-02	0.91
EBV	DYCNVLNKEF	A24	B45	5.2E-02	1.6E-02	0.70
EBV	DYCNVLNKEF	A24	B35	6.7E-02	4.4E-02	1.01
EBV	EENLLDFVRF	B44	B35	1.4E-02	4.0E-03	0.42
EBV	EGGVGWRHW	B44	Cw14	1.8E-02	9.6E-03	0.58
HIV	EIYKRWII	B08	B50	4.2E-02	4.0E-03	0.34
HIV	EKEGKISKI	B51	B49	1.6E-02	1.2E-03	0.16
HIV	EKEGKISKI	B51	Cw15	5.2E-02	2.2E-02	0.73
HIV	EPVDPRLEPW	B53	A25	4.5E-02	1.9E-02	0.71
HIV	ERILSTYLGR	A03	B1517	2.0E-02	3.7E-03	0.32
HIV	ERYLKDQQL	B14	A24	6.2E-05	6.5E-06	0.00
HIV	ERYLKDQQL	B14	A23	2.1E-04	3.0E-04	0.05
HIV	ETINEEAAEW	A25	B53	2.1E-03	1.3E-03	0.16
HIV	ETINEEAAEW	A25	B45	2.5E-02	1.9E-02	0.71

pathogen	peptide	original HLA	alternative HLA	p-value LANL	p-value MSR	q-value MSR
HIV	EVIPMFSAL	A26	B46	2.0E-02	3.8E-03	0.33
HIV	EVIPMFSAL	A26	B08	7.1E-02	2.4E-02	0.73
HIV	EYRKILRQR	A33	B1516	4.1E-02	1.3E-02	0.56
HIV	FLGKIWPSYK	A02	B1517	2.6E-02	1.1E-02	0.51
HIV	FLGKIWPSYK	A02	B58	2.2E-02	1.1E-02	0.51
HIV	FLGKIWPSYK	A02	A31	5.3E-02	2.3E-02	0.73
HIV	FLKEKGGL	B08	B50	6.2E-02	4.9E-02	0.94
EBV	FLRGRAYGL	B08	Cw15	5.7E-02	2.3E-02	0.80
EBV	FMVFLQTHI	A02	B35	3.6E-02	7.1E-04	0.16
HIV	FPRIWLHGL	B07 / B81	B42	1.6E-04	1.8E-04	0.03
HIV	FPRIWLHGL	B07 / B81	B1517	2.2E-02	2.3E-02	0.73
HIV	FPVTPQVPL	B07	A6801	1.2E-02	8.8E-03	0.47
HIV	FPVTPQVPL	B07	Cw01	9.2E-02	3.9E-02	0.90
HIV	FPVTPQVPLR	B07	B45	6.3E-02	2.1E-02	0.73
HIV	FQTKGLGISY	B1503	B58	9.0E-03	5.5E-03	0.37
HIV	FQTKGLGISY	B1503	A74	7.4E-02	2.2E-02	0.73
EBV	FRKAQIQGL	B27	Cw06	2.9E-06	8.3E-06	0.03
EBV	FRKAQIQGL	B27	B50	4.6E-02	3.4E-03	0.41
HIV	GGKKKYKL	B08	Cw15	5.2E-02	2.1E-02	0.73
HIV	GHQAAMQML	B39	B38	1.2E-04	1.7E-05	0.00
HIV	GHQAAMQML	B39	B1510	6.0E-03	1.2E-03	0.15
HIV	GHQAAMQML	B39	A03	2.0E-03	1.6E-03	0.20
HIV	GLNKIVRMY	B1501	Cw15	5.2E-02	2.0E-02	0.72
HIV	GPGHKARVL	B07	B40	1.7E-07	5.1E-08	0.00
HIV	GPGHKARVL	B07	B42	3.5E-03	7.8E-04	0.10
EBV	GQGGSPTAM	B1501	B40	7.9E-04	2.4E-04	0.09
EBV	GQGGSPTAM	B1501	B39	4.2E-02	2.0E-02	0.76
HIV	GRRGWEALKY	B27	A30	5.5E-02	1.4E-02	0.61
HIV	GRRGWEALKY	B27	B1517	8.1E-02	2.2E-02	0.73
EBV	HHIWQNLL	B39	B1510	3.2E-03	6.2E-04	0.15
HIV	HPDIVIYQY	B35	Cw15	4.3E-02	9.9E-03	0.49
HIV	HPRVSSEVHI	B07	A36	4.2E-02	2.3E-02	0.73
HIV	HPRVSSEVHI	B07	A29	4.2E-02	2.9E-02	0.79
HIV	HPRVSSEVHI	B07	B42	4.1E-02	3.7E-02	0.88
EBV	HPVGEADYFEY	B35	Cw01	8.3E-02	1.1E-02	0.62
HIV	HPVHAGPIA	B07	B35	4.4E-03	3.1E-05	0.01
HIV	HPVHAGPIA	B07	B55	7.9E-04	2.8E-04	0.05
EBV	HRCQAIRK	B27	B50	3.3E-02	8.3E-03	0.54
EBV	HRCQAIRK	B27	A30	3.0E-02	1.7E-02	0.71
HIV	HTQGYFPDWQ	B57	A29	1.9E-03	7.9E-04	0.10
HIV	HTQGYFPDWQ	B57	B58	7.4E-03	4.3E-03	0.35
HIV	HTQGYFPDWQ	B57	B49	9.7E-02	3.8E-02	0.89
EBV	IEDPPFNSL	B40	B45	5.4E-02	1.5E-02	0.68

pathogen	peptide	original HLA	alternative HLA	p-value LANL	p-value MSR	q-value MSR
HIV	IEELRQHLL	B40	B37	1.3E-04	1.9E-05	0.00
HIV	IEELRQHLL	B40	A74	1.3E-02	1.9E-02	0.71
HIV	IEELRQHLL	B40	B1517	2.1E-02	1.9E-02	0.71
HIV	IEIKDTKEAL	B40	B08	8.9E-06	2.7E-06	0.00
EBV	ILIYNGWYA	A02	B35	1.5E-02	8.0E-06	0.03
HIV	ILKEPVHGV	A02	B50	2.5E-02	3.0E-02	0.81
HIV	ILKEPVHGVY	B1501	B1503	8.1E-03	4.4E-02	0.92
EBV	IPQCRLTPL	B07	A31	3.1E-02	7.9E-03	0.54
EBV	IPQCRLTPL	B07	Cw05	4.3E-02	1.6E-02	0.70
HIV	IPRRIRQGL	B07	B42	4.3E-03	2.9E-03	0.29
HIV	IRLRPGGKK	B27	B58	9.6E-03	6.3E-03	0.39
HIV	IRLRPGGKK	B27	Cw17	1.1E-02	7.9E-03	0.46
HIV	IRLRPGGKK	B27	B37	3.3E-02	9.2E-03	0.47
HIV	ISKKAKGWF	B57	B58	5.1E-02	5.3E-03	0.37
HIV	ISKKAKGWF	B57	A36	2.0E-02	3.3E-02	0.85
HIV	ISPRTLNAW	B57	B1516	1.3E-02	7.4E-03	0.45
HIV	ISPRTLNAW	B57	A6802	4.3E-02	5.0E-02	0.94
HIV	ITLWQRPLV	A6802 / A74	A29	5.2E-03	2.1E-04	0.03
HIV	ITLWQRPLV	A6802 / A74	B1517	6.4E-02	4.0E-02	0.90
HIV	IVLPEKDSW	B57	B58	2.6E-04	5.4E-05	0.02
HIV	IVNRNRQGY	A30	Cw08	1.9E-02	1.8E-03	0.22
HIV	IVNRNRQGY	A30	B27	4.1E-03	2.6E-03	0.27
HIV	IVNRNRQGY	A30	B07	8.2E-03	3.6E-03	0.32
EBV	IVTDFSVIK	A11	Cw04	9.3E-03	6.6E-03	0.53
EBV	IVTDFSVIK	A11	B1501	6.9E-02	2.3E-02	0.79
HIV	IYQEPFKNLK	A11	A24	1.5E-05	2.3E-06	0.00
HIV	IYQEPFKNLK	A11	A23	2.3E-03	3.2E-03	0.30
HIV	IYQEPFKNLK	A11	B07	4.3E-02	2.0E-02	0.72
HIV	KAAVDLSHFL	Cw08	Cw03	3.4E-04	1.1E-04	0.03
HIV	KAAVDLSHFL	Cw08	A74	8.6E-03	7.1E-03	0.44
HIV	KAAVDLSHFL	Cw08	B46	3.5E-02	9.2E-03	0.47
HIV	KAFSPEVIPMF	B57	Cw14	7.8E-03	2.1E-03	0.23
HIV	KAVRLIKFLY	B57 / B58	A29	2.5E-02	7.0E-03	0.44
HIV	KAVRLIKFLY	B57 / B58	B13	4.6E-02	3.2E-02	0.84
HIV	KAVRLIKFLY	B57 / B58	B07	2.0E-02	4.1E-02	0.91
EBV	KEHVIQNAF	B44	Cw17	2.6E-03	2.3E-03	0.35
HIV	KEKGGLEGL	B40	B49	5.8E-07	1.5E-07	0.00
HIV	KEKGGLEGL	B40	Cw15	4.4E-02	1.7E-02	0.66
HIV	KIRLRPGGK	A03	B27	6.7E-03	3.9E-03	0.33
HIV	KIRLRPGGK	A03	A02	1.0E-02	2.9E-02	0.79
HIV	KLNWASQIY	A30	B58	4.4E-02	1.4E-02	0.60
HIV	KLNWASQIY	A30	A6801	3.3E-02	2.3E-02	0.73
HIV	KLVDFRELNK	A03	B1510	2.0E-02	3.7E-03	0.32

pathogen	peptide	original HLA	alternative HLA	p-value LANL	p-value MSR	q-value MSR
HIV	KQNPDIVIY	A30	A6801	9.2E-04	6.0E-04	0.09
HIV	KQNPDIVIY	A30	B39	4.3E-02	2.4E-02	0.73
HIV	KRWIILGLNK	B27	B35	1.8E-03	1.0E-04	0.03
HIV	KRWIILGLNK	B27	B45	6.5E-02	2.1E-02	0.72
HIV	KTAVQMAVF	B57	B81	1.8E-02	1.2E-02	0.55
HIV	KTKPPLPSVKK	A03	B42	4.8E-04	2.4E-04	0.04
HIV	KTKPPLPSVKK	A03	A31	3.1E-02	4.5E-04	0.08
HIV	KYCWNLLQY	A30	B1517	2.1E-02	2.1E-02	0.73
HIV	KYKLKHIVW	A24	A23	1.5E-03	1.1E-03	0.15
HIV	KYKLKHIVW	A24	Cw01	3.3E-02	1.0E-02	0.49
HIV	LADQLIHLHY	B18	Cw05	7.1E-03	5.3E-03	0.37
EBV	LDFVRFMGV	B37	B35	9.6E-04	2.0E-04	0.08
EBV	LEKARGSTY	B1501	A23	1.6E-03	3.9E-04	0.13
EBV	LEKARGSTY	B1501	B40	1.7E-03	6.4E-04	0.15
HIV	LFCASDAKAY	A24	B39	4.0E-02	2.2E-03	0.24
HIV	LFCASDAKAY	A24	B82	4.0E-02	7.4E-03	0.45
EBV	LIPETVPYI	A02	A80	2.6E-02	3.8E-03	0.41
EBV	LLDFVRFMGV	A02	B45	4.5E-02	1.7E-02	0.71
EBV	LLSAWILTA	A02	A80	4.1E-02	4.1E-03	0.42
EBV	LLSAWILTA	A02	B45	1.2E-02	6.3E-03	0.50
EBV	LLWAARPRL	A02	B35	6.8E-02	7.5E-05	0.03
EBV	LLWAARPRL	A02	A80	2.8E-02	9.6E-03	0.58
EBV	LLWTLVVLL	A02	B14	4.3E-02	1.4E-02	0.68
EBV	LMIIPLINV	A02	B27	1.9E-02	2.3E-03	0.35
HIV	LPCRIKQII	B51	B1516	4.0E-02	1.0E-02	0.49
HIV	LPCRIKQII	B51	B39	4.0E-02	1.7E-02	0.66
EBV	LPCVLWPVL	B07	B45	2.6E-04	7.2E-05	0.03
EBV	LPCVLWPVL	B07	B46	1.1E-02	8.8E-04	0.18
EBV	LRGKWQRRYR	B27	A23	1.5E-02	4.6E-03	0.46
EBV	LRGKWQRRYR	B27	A30	5.2E-02	4.2E-02	1.01
EBV	LTAGFLIFL	A02	B45	4.4E-02	1.5E-02	0.68
HIV	LVGKLNWASQIY	B1501	B39	5.7E-03	1.2E-03	0.15
HIV	LVGKLNWASQIY	B1501	A30	3.6E-02	2.3E-03	0.25
HIV	LVGKLNWASQIY	B1501	A6801	9.3E-02	1.3E-02	0.57
HIV	PIQKETWETW	A32	A24	2.0E-03	4.8E-05	0.01
HIV	PLRPMTYK	A11	A34	4.0E-02	9.9E-03	0.49
HIV	PLRPMTYK	A11	B1517	3.9E-02	1.7E-02	0.66
HIV	QAISPRTLNAW	A25	B57	7.3E-05	3.8E-05	0.01
HIV	QAISPRTLNAW	A25	B53	9.2E-03	2.2E-02	0.73
HIV	QAISPRTLNAW	A25	B58	2.6E-02	3.7E-02	0.88
EBV	QAKWRLQTL	B08	B45	5.6E-02	1.8E-02	0.71
EBV	QAKWRLQTL	B08	A33	5.2E-02	3.5E-02	0.94
HIV	QASQEVKNW	B53 / B57 / Cw04	B58	1.8E-04	7.7E-05	0.03

pathogen	peptide	original HLA	alternative HLA	p-value LANL	p-value MSR	q-value MSR
HIV	QELKNSAVSL	B40	A32	1.7E-02	1.2E-03	0.15
HIV	QIYAGIKVK	A11 / A03	B1517	4.1E-02	4.9E-03	0.36
HIV	QIYAGIKVK	A11 / A03	B18	4.1E-02	2.2E-02	0.73
HIV	QIYPGIKVR	A03 / A11	B14	6.9E-03	3.2E-03	0.30
HIV	QIYPGIKVR	A03 / A11	B1517	4.0E-02	4.0E-03	0.34
HIV	QIYPGIKVR	A03 / A11	B18	4.0E-02	1.8E-02	0.68
EBV	QPRAPIRPI	B07	B35	1.3E-02	1.2E-02	0.62
EBV	QPRAPIRPI	B07	B57	6.4E-02	2.5E-02	0.81
HIV	QVPLRPMTYK	A03 / A11	A34	1.4E-04	2.8E-05	0.01
HIV	QVPLRPMTYK	A03 / A11	B14	3.3E-02	2.6E-02	0.75
HIV	RAIEAQQHL	Cw03 / Cw15	B58	3.7E-03	6.7E-04	0.10
HIV	RAIEAQQHL	Cw03 / Cw15	A25	4.4E-02	1.6E-02	0.65
HIV	RDYVDRFFKTL	A24	B1510	3.7E-03	5.4E-03	0.37
HIV	RDYVDRFFKTL	A24	A74	1.0E-02	7.8E-03	0.46
HIV	RDYVDRFFKTL	A24	B57	1.0E-02	9.2E-03	0.47
HIV	RDYVDRFFKTL	A24	B41	8.9E-03	1.2E-02	0.55
HIV	RDYVDRFYKTL	B44	B1510	3.7E-03	5.9E-03	0.38
HIV	RDYVDRFYKTL	B44	A74	1.0E-02	1.0E-02	0.51
HIV	RDYVDRFYKTL	B44	B57	1.0E-02	1.4E-02	0.61
HIV	RIKQIINMW	A32	A29	4.9E-03	2.0E-03	0.23
HIV	RIKQIINMW	A32	A30	2.0E-02	6.0E-03	0.38
EBV	RKIYDLIEL	B27	A30	3.1E-03	1.6E-03	0.22
HIV	RLRDLLLIVTR	A03 / A31	B39	3.3E-02	4.5E-03	0.35
HIV	RLRDLLLIVTR	A03 / A31	B07	1.0E-02	1.4E-02	0.58
HIV	RLRDLLLIVTR	A03 / A31	B58	3.3E-02	4.5E-02	0.92
HIV	RLRPGGKKKY	A03	Cw06	8.5E-03	3.3E-03	0.30
HIV	RLRPGGKKKY	A03	B1501	1.7E-02	1.1E-02	0.54
HIV	RLRPGGKKKY	A03	B1516	8.5E-02	1.5E-02	0.63
HIV	RLRPGGKKKY	A03	A80	8.5E-02	4.7E-02	0.92
HIV	RMRGAHTNDVK	A03	Cw07	3.5E-02	9.5E-03	0.47
HIV	RPMTYKAAL	B07	B42	4.3E-03	2.9E-03	0.29
HIV	RPMTYKAAL	B07	A24	1.1E-02	4.0E-03	0.34
HIV	RPMTYKAAL	B07	A32	1.3E-02	8.7E-03	0.47
HIV	RPMTYKAAV	B07	B39	2.1E-02	4.4E-03	0.35
HIV	RPMTYKAAV	B07	B42	9.2E-03	4.9E-03	0.36
HIV	RPNNNTRKSI	B07	B42	6.1E-02	1.8E-02	0.69
EBV	RPPIFIRRL	B07	Cw02	2.0E-03	6.0E-04	0.15
EBV	RPPIFIRRL	B07	Cw17	3.8E-02	3.1E-02	0.90
EBV	RPQKRPSCI	B07	B42	4.1E-02	1.2E-02	0.62
EBV	RRARSLSAERY	B27	B50	3.1E-02	7.5E-03	0.54
EBV	RRARSLSAERY	B27	A30	2.7E-02	1.5E-02	0.68
EBV	RRIFDLIEL	B27	B14	4.4E-02	1.2E-02	0.62
EBV	RRIFDLIEL	B27	A23	4.3E-02	2.7E-02	0.83

pathogen	peptide	original HLA	alternative HLA	p-value LANL	p-value MSR	q-value MSR
EBV	RRIYDLIEL	B27	A30	6.8E-03	5.0E-03	0.49
EBV	RRIYDLIEL	B27	B57	3.5E-02	2.0E-02	0.76
EBV	RRRWRRLTV	B27	A31	1.1E-02	9.6E-04	0.19
EBV	RRRWRRLTV	B27	B45	6.6E-03	3.0E-03	0.38
HIV	RRWIQLGLQK	B27	B35	3.8E-05	1.7E-06	0.00
HIV	RRWIQLGLQK	B27	B18	2.2E-02	5.1E-03	0.36
HIV	RRWIQLGLQK	B27	A30	5.0E-02	2.2E-02	0.73
HIV	RSLYNTVATLY	A30	A02	3.2E-03	2.3E-03	0.26
HIV	RSLYNTVATLY	A30	A29	8.1E-03	5.4E-03	0.37
HIV	RVKEKYQHL	B08	A36	2.0E-02	3.7E-03	0.32
EBV	RVRAYTYSK	A03	A30	7.9E-05	4.8E-05	0.03
EBV	RVRAYTYSK	A03	A80	4.4E-02	2.2E-02	0.79
HIV	RYLKDQQLL	A24	A23	1.6E-06	1.1E-06	0.00
HIV	RYLKDQQLL	A24	B42	6.9E-02	1.3E-02	0.57
HIV	RYLKDQQLL	A24	B08	7.1E-02	2.5E-02	0.73
HIV	RYPLTFGW	A24	B53	2.2E-03	9.7E-04	0.13
HIV	RYPLTFGW	A24	B35	4.9E-03	9.1E-03	0.47
HIV	RYPLTFGW	A24	A23	6.2E-03	2.0E-02	0.72
EBV	RYSIFFDY	A24	Cw17	1.0E-02	6.0E-03	0.50
HIV	SAEPVPLQL	B14 / Cw05	Cw01	3.2E-02	9.5E-03	0.47
HIV	SAEPVPLQL	B14 / Cw05	B1510	4.1E-02	2.4E-02	0.73
HIV	SAEPVPLQL	B14 / Cw05	B07	4.0E-02	5.0E-02	0.94
HIV	SEGATPQDL	B40	B44	2.4E-05	8.1E-06	0.00
HIV	SFEPIPIHY	A29	A30	1.9E-02	5.1E-03	0.36
HIV	SFNCGGEFF	B1516 / Cw04	A29	1.3E-02	2.8E-03	0.29
HIV	SFNCGGEFF	B1516 / Cw04	B18	5.3E-02	7.1E-03	0.44
HIV	SLLNATDIAV	A02	B37	2.0E-02	5.3E-04	0.09
EBV	SLVIVTTFV	A02	A80	4.1E-02	1.7E-02	0.71
HIV	SLYNTVATL	A02	Cw06	3.2E-02	8.8E-03	0.47
HIV	SPAIFQSSM	B07	B42	3.0E-02	1.4E-02	0.59
HIV	SPAIFQSSM	B07	B82	3.2E-02	1.5E-02	0.61
HIV	SPAIFQSSM	B07	B81	2.4E-02	1.8E-02	0.69
HIV	SPRTLNAWV	B07	B42	1.2E-03	6.8E-04	0.10
HIV	SPRTLNAWV	B07	B81	4.2E-02	1.2E-02	0.55
HIV	SPRTLNAWV	B07	B39	4.1E-02	2.0E-02	0.72
HIV	SVITQACPK	A11	A32	6.3E-02	2.0E-02	0.72
HIV	SVITQACPK	A11	B42	2.8E-02	2.1E-02	0.73
EBV	SVRDRLARL	A02	B45	4.3E-02	2.7E-03	0.38
EBV	SVRDRLARL	A02	B81	4.0E-03	5.9E-03	0.50
HIV	TAFTIPSI	B51	B35	9.4E-04	1.4E-05	0.00
HIV	TAFTIPSI	B51	B40	3.0E-04	1.3E-04	0.03
HIV	TAVPWNASW	B35	A01	4.1E-02	2.7E-02	0.76
HIV	TAVPWNASW	B35	B55	9.0E-02	3.6E-02	0.87

pathogen	peptide	original HLA	alternative HLA	p-value LANL	p-value MSR	q-value MSR
HIV	TLYCVHQRI	A11	B1516	4.1E-02	1.2E-02	0.55
HIV	TLYCVHQRI	A11	B1517	4.0E-02	2.0E-02	0.72
HIV	TPGPGVRYPL	B07 / B42	B58	2.1E-02	6.2E-03	0.39
HIV	TPQDLNTML	B07 / B42 / B53 / B81	B14	3.3E-04	1.4E-04	0.03
HIV	TPQDLNTML	B07 / B42 / B53 / B81	B27	7.0E-02	1.8E-02	0.68
HIV	TPQDLNTML	B07 / B42 / B53 / B81	B39	4.6E-02	2.3E-02	0.73
HIV	TPQVPLRPM	B07	B42	2.4E-06	5.4E-07	0.00
HIV	TPQVPLRPM	B07	B82	2.3E-02	4.4E-03	0.35
HIV	TPQVPLRPM	B07	B39	2.3E-02	4.5E-03	0.35
HIV	TPYDINQML	B07 / B42 / B53 / B81	B35	2.1E-02	5.0E-03	0.36
HIV	TQGYFPDWQNY	B1501	A29	1.3E-04	1.4E-05	0.00
HIV	TQGYFPDWQNY	B1501	A23	1.3E-04	1.0E-04	0.03
HIV	TQGYFPDWQNY	B1501	A25	4.8E-02	1.5E-02	0.61
HIV	TSTLQEQIGW	B57 / B58	Cw01	3.3E-02	8.6E-03	0.47
HIV	TVLDVGDAY	B35	B1516	4.3E-02	1.3E-02	0.57
HIV	TVLDVGDAY	B35	B07	1.4E-02	2.3E-02	0.73
HIV	TVYYGVPVWK	A03	B39	4.5E-02	8.2E-03	0.47
HIV	TVYYGVPVWK	A03	B53	2.6E-02	8.7E-03	0.47
HIV	TVYYGVPVWK	A03	A30	1.6E-02	2.4E-02	0.73
EBV	TYGPVFMCL	A24	B45	1.3E-02	9.0E-03	0.58
EBV	TYSAGIVQI	A24	A31	4.3E-02	1.2E-02	0.62
EBV	VEITPYKPTW	B44	B35	1.6E-03	4.6E-03	0.46
HIV	VIYQYMDDL	A02	B58	9.1E-02	4.2E-03	0.35
HIV	VLEWRFDSRL	A02	B1517	3.9E-02	1.7E-02	0.66
EBV	VLQWASLAV	A02	B35	4.1E-02	1.5E-05	0.03
EBV	VMNSNTLLSAW	A25	B35	5.2E-02	4.4E-02	1.01
EBV	VPGSETMCY	B35	B13	4.8E-02	4.1E-02	1.01
HIV	VPVWKEATTT	B55	Cw04	1.2E-02	2.4E-03	0.26
HIV	VPVWKEATTTL	B35	A23	1.5E-04	1.6E-05	0.00
HIV	VPVWKEATTTL	B35	B53	2.2E-02	4.8E-02	0.93
HIV	WASRELERF	B35	B53	5.1E-05	1.8E-04	0.03
HIV	WASRELERF	B35	B18	2.2E-02	5.4E-03	0.37
HIV	WPTVRERM	B08	B50	2.0E-02	4.0E-03	0.34
EBV	WTLVVLLI	B1516	A24	1.3E-03	1.1E-03	0.19
HIV	YFPDWQNYT	B37 / B57	A29	1.2E-03	2.0E-03	0.23
HIV	YFPDWQNYT	B37 / B57	A23	8.6E-03	2.5E-03	0.26
HIV	YLKDQQLL	B08	A23	4.8E-04	2.0E-03	0.23
HIV	YLKDQQLL	B08	B1501	9.8E-02	1.1E-02	0.51
HIV	YLKDQQLL	B08	B45	8.8E-02	4.3E-02	0.91
EBV	YLLEMLWRL	A02	A11	9.5E-03	1.8E-04	0.08
EBV	YPLHEQYGM	B35	A80	7.3E-04	1.0E-04	0.04
HIV	YPLTFGWCY	B18	B53	1.7E-06	3.8E-06	0.00
HIV	YPLTFGWCY	B18	B35	3.9E-04	4.8E-05	0.01

pathogen	peptide	original HLA	alternative HLA	p-value LANL	p-value MSR	q-value MSR
HIV	YPLTFGWCY	B18	B42	6.0E-02	3.9E-02	0.90
EBV	YRSGIIAVV	Cw06	B40	4.0E-03	3.4E-03	0.41
HIV	YTAFTIPSI	A02	B35	1.5E-02	9.0E-04	0.12
EBV	YVLDHLIVV	A02	Cw04	5.1E-02	2.4E-02	0.81

Frahm *et al*. Supporting Fig. S1: Flow-cytometric analysis of IFN-γ-producing cells. Epitope-specific T cells in six subjects detected in the absence of the original restricting allele were analyzed for the expression of CD4 or CD8. Each subject is represented in two rows. Upper rows are gated on CD3+ CD8+ T cells, lower rows on CD3+ CD4+ T cells. Left graphs are negative controls stimulated in the absence of peptide (Nil), subjects and peptides are marked underneath each graph.

Frahm *et al.* Supporting Fig. S1 cont