

Supplementary information

Supplementary table 1: Association of HLA locus with anti-NMDAR encephalitis

HLA	Patients (n = 2 × 61)	Controls (n = 2 × 571)	OR	95% CI (OR min)	95% CI (OR max)	p value	Adjusted p value
Class I							
A*01:01	2	12	1.57	0.17	7.17	0.63751	1.00000
A*01:03	0	1	0.00	0.00	363.00	1.00000	1.00000
A*02:01	7	84	0.77	0.29	1.71	0.71136	1.00000
A*02:03	14	59	2.38	1.19	4.49	0.01201	0.64318
A*02:05	0	1	0.00	0.00	363.00	1.00000	1.00000
A*02:06	4	28	1.35	0.34	3.95	0.54147	1.00000
A*02:07	13	146	0.81	0.41	1.50	0.56776	1.00000
A*02:10	0	2	0.00	0.00	49.95	1.00000	1.00000
A*03:01	0	19	0.00	0.00	2.00	0.24587	1.00000
A*03:02	0	1	0.00	0.00	363.00	1.00000	1.00000
A*11:01	34	347	0.89	0.57	1.36	0.60492	1.00000
A*11:02	5	38	1.24	0.37	3.25	0.59940	1.00000
A*11:04	0	1	0.00	0.00	363.00	1.00000	1.00000
A*11:36	0	1	0.00	0.00	363.00	1.00000	1.00000
A*23:01	0	1	0.00	0.00	363.00	1.00000	1.00000
A*24:02	20	177	1.07	0.61	1.79	0.79306	1.00000
A*24:03	0	1	0.00	0.00	363.00	1.00000	1.00000
A*24:07	0	3	0.00	0.00	22.76	1.00000	1.00000
A*24:20	1	0	~	0.24	~	0.09652	0.97263
A*26:01	2	26	0.72	0.08	2.92	1.00000	1.00000
A*29:01	0	7	0.00	0.00	6.53	1.00000	1.00000
A*29:02	0	1	0.00	0.00	363.00	1.00000	1.00000
A*30:01	5	29	1.64	0.49	4.40	0.36825	1.00000
A*31:01	1	32	0.29	0.01	1.75	0.36203	1.00000
A*32:01	1	5	1.88	0.04	16.98	0.45680	1.00000
A*33:01	0	1	0.00	0.00	363.00	1.00000	1.00000
A*33:03	12	116	0.96	0.47	1.82	1.00000	1.00000
A*68:01	0	2	0.00	0.00	49.95	1.00000	1.00000
A*74:02	1	1	9.40	0.12	736.01	0.18379	0.98161
B*07:02	0	13	0.00	0.00	3.08	0.62736	1.00000
B*07:05	0	8	0.00	0.00	5.51	1.00000	1.00000
B*07:06	1	0	~	0.24	~	0.09652	0.97263
B*07:10	0	1	0.00	0.00	363.00	1.00000	1.00000
B*08:01	0	5	0.00	0.00	10.28	1.00000	1.00000
B*13:01	15	90	1.64	0.85	2.97	0.11747	0.97263
B*13:02	5	30	1.58	0.47	4.23	0.37576	1.00000
B*14:02	0	1	0.00	0.00	363.00	1.00000	1.00000
B*15:01	3	44	0.63	0.12	2.01	0.61549	1.00000
B*15:02	12	59	2.00	0.95	3.91	0.05853	0.97263
B*15:07	0	3	0.00	0.00	22.76	1.00000	1.00000
B*15:11	1	12	0.78	0.02	5.34	1.00000	1.00000
B*15:12	2	3	6.31	0.52	55.66	0.07610	0.97263
B*15:13	0	1	0.00	0.00	363.00	1.00000	1.00000
B*15:18	0	5	0.00	0.00	10.28	1.00000	1.00000
B*15:19	0	2	0.00	0.00	49.95	1.00000	1.00000
B*15:21	0	1	0.00	0.00	363.00	1.00000	1.00000
B*15:25	1	10	0.94	0.02	6.68	1.00000	1.00000
B*15:27	2	4	4.73	0.42	33.39	0.10708	0.97263
B*15:32	0	1	0.00	0.00	363.00	1.00000	1.00000
B*15:58	0	4	0.00	0.00	14.25	1.00000	1.00000
B*18:01	0	4	0.00	0.00	14.25	1.00000	1.00000
B*18:02	1	0	~	0.24	~	0.09652	0.97263
B*27:04	2	24	0.78	0.09	3.19	1.00000	1.00000
B*27:05	0	3	0.00	0.00	22.76	1.00000	1.00000
B*27:06	0	2	0.00	0.00	49.95	1.00000	1.00000
B*27:07	0	3	0.00	0.00	22.76	1.00000	1.00000
B*35:01	0	26	0.00	0.00	1.42	0.16699	0.98161
B*35:03	1	8	1.17	0.03	8.86	0.60011	1.00000
B*35:05	1	5	1.88	0.04	16.98	0.45680	1.00000
B*35:08	0	1	0.00	0.00	363.00	1.00000	1.00000
B*37:01	2	6	3.15	0.31	17.87	0.17622	0.98161
B*38:01	0	5	0.00	0.00	10.28	1.00000	1.00000

B*38:02	10	40	2.46	1.07	5.17	0.02312	0.75807
B*39:01	3	20	1.41	0.27	4.87	0.48058	1.00000
B*39:05	1	1	9.40	0.12	736.01	0.18379	0.98161
B*40:01	17	181	0.86	0.47	1.49	0.69417	1.00000
B*40:02	0	13	0.00	0.00	3.08	0.62736	1.00000
B*40:03	0	1	0.00	0.00	363.00	1.00000	1.00000
B*40:06	2	20	0.94	0.10	3.93	1.00000	1.00000
B*40:10	0	1	0.00	0.00	363.00	1.00000	1.00000
B*41:02	0	1	0.00	0.00	363.00	1.00000	1.00000
B*44:02	0	2	0.00	0.00	49.95	1.00000	1.00000
B*44:03	2	14	1.34	0.15	5.95	0.66208	1.00000
B*45:01	0	1	0.00	0.00	363.00	1.00000	1.00000
B*46:01	12	168	0.63	0.31	1.18	0.17238	0.98161
B*48:01	2	15	1.25	0.14	5.49	0.67577	1.00000
B*48:03	0	1	0.00	0.00	363.00	1.00000	1.00000
B*48:04	0	1	0.00	0.00	363.00	1.00000	1.00000
B*50:01	0	2	0.00	0.00	49.95	1.00000	1.00000
B*51:01	7	52	1.28	0.48	2.91	0.50067	1.00000
B*51:02	2	20	0.94	0.10	3.93	1.00000	1.00000
B*51:06	0	1	0.00	0.00	363.00	1.00000	1.00000
B*52:01	1	11	0.85	0.02	5.94	1.00000	1.00000
B*54:01	1	33	0.28	0.01	1.69	0.24468	1.00000
B*55:02	4	32	1.18	0.30	3.40	0.77202	1.00000
B*55:04	0	2	0.00	0.00	49.95	1.00000	1.00000
B*55:12	0	2	0.00	0.00	49.95	1.00000	1.00000
B*56:01	0	8	0.00	0.00	5.51	1.00000	1.00000
B*56:04	1	0	~	0.24	~	0.09652	0.97263
B*57:01	0	5	0.00	0.00	10.28	1.00000	1.00000
B*58:01	7	106	0.60	0.23	1.31	0.24211	1.00000
B*67:01	1	3	3.13	0.06	39.40	0.33403	1.00000
B*81:02	0	1	0.00	0.00	363.00	1.00000	1.00000
C*01:02	16	217	0.64	0.35	1.12	0.13955	0.97263
C*01:03	0	6	0.00	0.00	8.00	1.00000	1.00000
C*01:06	0	1	0.00	0.00	363.00	1.00000	1.00000
C*01:08	1	1	9.40	0.12	736.01	0.18379	0.98161
C*02:02	0	4	0.00	0.00	14.25	1.00000	1.00000
C*03:02	8	107	0.68	0.28	1.44	0.40641	1.00000
C*03:03	1	64	0.14	0.00	0.82	0.01642	0.64318
C*03:04	21	152	1.35	0.78	2.26	0.26629	1.00000
C*04:01	4	58	0.63	0.16	1.76	0.50946	1.00000
C*04:03	4	17	2.24	0.54	7.03	0.13670	0.97263
C*04:06	0	1	0.00	0.00	363.00	1.00000	1.00000
C*04:15	0	1	0.00	0.00	363.00	1.00000	1.00000
C*04:82	1	0	~	0.24	~	0.09652	0.97263
C*05:01	0	3	0.00	0.00	22.76	1.00000	1.00000
C*06:02	6	44	1.29	0.44	3.13	0.62175	1.00000
C*07:01	0	1	0.00	0.00	363.00	1.00000	1.00000
C*07:02	29	202	1.45	0.90	2.29	0.10878	0.97263
C*07:04	1	7	1.34	0.03	10.57	0.55709	1.00000
C*07:06	1	2	4.70	0.08	91.09	0.26270	1.00000
C*08:01	14	91	1.50	0.76	2.76	0.22424	1.00000
C*08:02	0	1	0.00	0.00	363.00	1.00000	1.00000
C*08:03	0	4	0.00	0.00	14.25	1.00000	1.00000
C*08:22	0	1	0.00	0.00	363.00	1.00000	1.00000
C*12:02	2	29	0.64	0.07	2.58	0.76138	1.00000
C*12:03	3	26	1.08	0.21	3.61	0.75452	1.00000
C*14:02	7	43	1.56	0.58	3.59	0.32237	1.00000
C*14:03	0	6	0.00	0.00	8.00	1.00000	1.00000
C*15:02	3	43	0.64	0.13	2.06	0.61499	1.00000
C*15:05	0	7	0.00	0.00	6.53	1.00000	1.00000
C*16:02	0	2	0.00	0.00	49.95	1.00000	1.00000
C*17:01	0	1	0.00	0.00	363.00	1.00000	1.00000
Class II							
DPA1*01:03	23	319	0.60	0.36	0.97	0.03209	0.75807
DPA1*01:04	0	1	0.00	0.00	363.00	1.00000	1.00000
DPA1*01:11	0	1	0.00	0.00	363.00	1.00000	1.00000
DPA1*02:01	17	121	1.37	0.74	2.39	0.28356	1.00000
DPA1*02:02	79	655	1.37	0.91	2.07	0.12311	0.97263
DPA1*02:07	1	2	4.70	0.08	91.09	0.26270	1.00000
DPA1*04:01	2	43	0.43	0.05	1.67	0.30771	1.00000
DPB1*01:01	0	1	0.00	0.00	363.00	1.00000	1.00000
DPB1*02:01	9	164	0.48	0.21	0.96	0.03658	0.75807
DPB1*02:02	6	86	0.64	0.22	1.49	0.36106	1.00000

DPB1*03:01	3	53	0.52	0.10	1.64	0.35637	1.00000
DPB1*04:01	3	86	0.31	0.06	0.96	0.03871	0.75807
DPB1*04:02	3	27	1.04	0.20	3.46	1.00000	1.00000
DPB1*05:01	66	502	1.50	1.02	2.23	0.03521	0.75807
DPB1*09:01	1	13	0.72	0.02	4.86	1.00000	1.00000
DPB1*10:01	0	1	0.00	0.00	363.00	1.00000	1.00000
DPB1*104:01	1	2	4.70	0.08	91.09	0.26270	1.00000
DPB1*105:01	0	1	0.00	0.00	363.00	1.00000	1.00000
DPB1*107:01	2	5	3.78	0.36	23.41	0.14072	0.97263
DPB1*13:01	9	88	0.95	0.41	1.96	1.00000	1.00000
DPB1*135:01	4	3	12.81	2.14	88.46	0.00230	0.18021
DPB1*14:01	8	41	1.88	0.74	4.20	0.13206	0.97263
DPB1*16:01	0	2	0.00	0.00	49.95	1.00000	1.00000
DPB1*17:01	1	25	0.37	0.01	2.30	0.50415	1.00000
DPB1*19:01	1	5	1.88	0.04	16.98	0.45680	1.00000
DPB1*21:01	4	25	1.51	0.38	4.49	0.51695	1.00000
DPB1*22:01	0	1	0.00	0.00	363.00	1.00000	1.00000
DPB1*25:01	1	0	~	0.24	~	0.09652	0.97263
DPB1*26:01	0	1	0.00	0.00	363.00	1.00000	1.00000
DPB1*28:01	0	4	0.00	0.00	14.25	1.00000	1.00000
DPB1*31:01	0	3	0.00	0.00	22.76	1.00000	1.00000
DPB1*38:01	0	1	0.00	0.00	363.00	1.00000	1.00000
DPB1*41:01	0	1	0.00	0.00	363.00	1.00000	1.00000
DPB1*45:01	0	1	0.00	0.00	363.00	1.00000	1.00000
DQA1*01:01	3	40	0.69	0.14	2.23	0.79210	1.00000
DQA1*01:02	40	227	1.97	1.28	2.99	0.00153	0.17929
DQA1*01:03	8	88	0.84	0.34	1.79	0.85685	1.00000
DQA1*01:04	9	82	1.03	0.44	2.13	0.85509	1.00000
DQA1*01:05	2	12	1.57	0.17	7.17	0.63751	1.00000
DQA1*02:01	6	54	1.04	0.36	2.49	0.82467	1.00000
DQA1*03:01	9	76	1.12	0.48	2.31	0.70509	1.00000
DQA1*03:02	16	173	0.85	0.45	1.48	0.68832	1.00000
DQA1*03:03	10	86	1.10	0.49	2.20	0.72137	1.00000
DQA1*03:XX	0	2	0.00	0.00	49.95	1.00000	1.00000
DQA1*04:01	1	12	0.78	0.02	5.34	1.00000	1.00000
DQA1*05:01	4	74	0.49	0.13	1.34	0.23190	1.00000
DQA1*05:02	0	2	0.00	0.00	49.95	1.00000	1.00000
DQA1*05:03	0	28	0.00	0.00	1.31	0.10211	0.97263
DQA1*05:05	6	87	0.63	0.22	1.47	0.36145	1.00000
DQA1*05:06	1	0	~	0.24	~	0.09652	0.97263
DQA1*05:07	0	1	0.00	0.00	363.00	1.00000	1.00000
DQA1*05:08	0	4	0.00	0.00	14.25	1.00000	1.00000
DQA1*05:09	0	1	0.00	0.00	363.00	1.00000	1.00000
DQA1*06:01	7	93	0.69	0.26	1.52	0.47885	1.00000
DQB1*02:01	4	75	0.48	0.13	1.32	0.23392	1.00000
DQB1*02:02	6	49	1.15	0.40	2.78	0.64536	1.00000
DQB1*03:01	14	226	0.53	0.27	0.94	0.02819	0.75807
DQB1*03:02	9	77	1.10	0.47	2.28	0.70823	1.00000
DQB1*03:03	16	198	0.72	0.39	1.26	0.25587	1.00000
DQB1*03:04	0	1	0.00	0.00	363.00	1.00000	1.00000
DQB1*04:01	10	53	1.83	0.81	3.77	0.11995	0.97263
DQB1*04:02	1	16	0.58	0.01	3.81	1.00000	1.00000
DQB1*05:01	4	42	0.89	0.23	2.51	1.00000	1.00000
DQB1*05:02	24	133	1.86	1.10	3.05	0.01403	0.64318
DQB1*05:03	6	47	1.20	0.41	2.91	0.63421	1.00000
DQB1*06:01	19	126	1.49	0.83	2.54	0.13605	0.97263
DQB1*06:02	2	54	0.34	0.04	1.30	0.16107	0.98161
DQB1*06:03	0	10	0.00	0.00	4.20	0.61126	1.00000
DQB1*06:04	0	9	0.00	0.00	4.77	1.00000	1.00000
DQB1*06:09	5	21	2.28	0.66	6.37	0.09752	0.97263
DQB1*06:10	2	5	3.78	0.36	23.41	0.14072	0.97263
DRB1*01:01	0	12	0.00	0.00	3.38	0.61922	1.00000
DRB1*01:02	0	1	0.00	0.00	363.00	1.00000	1.00000
DRB1*03:01	4	77	0.47	0.12	1.29	0.17273	0.98161
DRB1*03:27	0	1	0.00	0.00	363.00	1.00000	1.00000
DRB1*04:01	0	9	0.00	0.00	4.77	1.00000	1.00000
DRB1*04:03	3	29	0.97	0.19	3.19	1.00000	1.00000
DRB1*04:04	0	4	0.00	0.00	14.25	1.00000	1.00000
DRB1*04:05	11	63	1.70	0.78	3.37	0.15097	0.98161
DRB1*04:06	4	31	1.21	0.31	3.52	0.76861	1.00000
DRB1*04:07	1	4	2.35	0.05	23.99	0.39851	1.00000
DRB1*04:10	0	1	0.00	0.00	363.00	1.00000	1.00000
DRB1*07:01	6	55	1.02	0.35	2.44	1.00000	1.00000

DRB1*08:01	0	1	0.00	0.00	363.00	1.00000	1.00000
DRB1*08:02	0	8	0.00	0.00	5.51	1.00000	1.00000
DRB1*08:03	8	77	0.97	0.39	2.08	1.00000	1.00000
DRB1*08:09	1	3	3.13	0.06	39.40	0.33403	1.00000
DRB1*09:01	16	191	0.75	0.41	1.31	0.36763	1.00000
DRB1*10:01	2	11	1.71	0.18	7.99	0.36186	1.00000
DRB1*11:01	5	64	0.72	0.22	1.82	0.67401	1.00000
DRB1*11:03	0	1	0.00	0.00	363.00	1.00000	1.00000
DRB1*11:04	0	1	0.00	0.00	363.00	1.00000	1.00000
DRB1*11:06	0	1	0.00	0.00	363.00	1.00000	1.00000
DRB1*11:29	0	1	0.00	0.00	363.00	1.00000	1.00000
DRB1*12:01	2	35	0.53	0.06	2.10	0.57159	1.00000
DRB1*12:02	7	101	0.63	0.24	1.39	0.30671	1.00000
DRB1*13:01	0	9	0.00	0.00	4.77	1.00000	1.00000
DRB1*13:02	5	29	1.64	0.49	4.40	0.36825	1.00000
DRB1*13:05	0	1	0.00	0.00	363.00	1.00000	1.00000
DRB1*13:07	0	1	0.00	0.00	363.00	1.00000	1.00000
DRB1*13:12	0	21	0.00	0.00	1.79	0.25325	1.00000
DRB1*14:03	0	4	0.00	0.00	14.25	1.00000	1.00000
DRB1*14:04	2	9	2.10	0.22	10.30	0.28775	1.00000
DRB1*14:05	2	21	0.89	0.10	3.71	1.00000	1.00000
DRB1*14:07	0	2	0.00	0.00	49.95	1.00000	1.00000
DRB1*14:18	0	2	0.00	0.00	49.95	1.00000	1.00000
DRB1*14:54	5	51	0.91	0.28	2.34	1.00000	1.00000
DRB1*15:01	18	123	1.43	0.79	2.48	0.17599	0.98161
DRB1*15:02	2	30	0.62	0.07	2.49	0.76211	1.00000
DRB1*15:04	0	2	0.00	0.00	49.95	1.00000	1.00000
DRB1*16:02	18	55	3.42	1.82	6.17	0.00009	0.02091

P values were adjusted using FDR.

Supplementary table 2: Association of HLA locus with anti-NMDAR encephalitis without Tumor

HLA	Patients (n = 2 × 46)	Controls (n = 2 × 571)	OR	95% CI (OR min)	95% CI (OR max)	p value	Adjusted p value
Class I							
A*01:01	1	12	1.03	0.02	7.14	1.00000	1.00000
A*01:03	0	1	0.00	0.00	480.48	1.00000	1.00000
A*02:01	5	84	0.72	0.22	1.83	0.67449	1.00000
A*02:03	12	59	2.75	1.29	5.44	0.00461	0.36128
A*02:05	0	1	0.00	0.00	480.48	1.00000	1.00000
A*02:06	1	28	0.44	0.01	2.71	0.71837	1.00000
A*02:07	8	146	0.65	0.27	1.38	0.32469	1.00000
A*02:10	0	2	0.00	0.00	66.32	1.00000	1.00000
A*03:01	0	19	0.00	0.00	2.67	0.39034	1.00000
A*03:02	0	1	0.00	0.00	480.48	1.00000	1.00000
A*11:01	27	347	0.95	0.57	1.54	0.90638	1.00000
A*11:02	4	38	1.32	0.33	3.79	0.54781	1.00000
A*11:04	0	1	0.00	0.00	480.48	1.00000	1.00000
A*11:36	0	1	0.00	0.00	480.48	1.00000	1.00000
A*23:01	0	1	0.00	0.00	480.48	1.00000	1.00000
A*24:02	16	177	1.15	0.61	2.04	0.65410	1.00000
A*24:03	0	1	0.00	0.00	480.48	1.00000	1.00000
A*24:07	0	3	0.00	0.00	30.21	1.00000	1.00000
A*24:20	1	0	-	-	-	-	-
A*26:01	2	26	0.95	0.11	3.91	1.00000	1.00000
A*29:01	0	7	0.00	0.00	8.69	1.00000	1.00000
A*29:02	0	1	0.00	0.00	480.48	1.00000	1.00000
A*30:01	5	29	2.20	0.65	5.96	0.10274	0.89422
A*31:01	0	32	0.00	0.00	1.51	0.16461	1.00000
A*32:01	1	5	2.50	0.05	22.65	0.37241	1.00000
A*33:01	0	1	0.00	0.00	480.48	1.00000	1.00000
A*33:03	8	116	0.84	0.34	1.80	0.85653	1.00000
A*68:01	0	2	0.00	0.00	66.32	1.00000	1.00000
A*74:02	1	1	12.48	0.16	976.38	0.14361	1.00000
B*07:02	0	13	0.00	0.00	4.10	0.61542	1.00000
B*07:05	0	8	0.00	0.00	7.34	1.00000	1.00000
B*07:06	1	0	-	-	-	-	-
B*07:10	0	1	0.00	0.00	480.48	1.00000	1.00000
B*08:01	0	5	0.00	0.00	13.67	1.00000	1.00000
B*13:01	11	90	1.59	0.73	3.13	0.16743	1.00000
B*13:02	5	30	2.13	0.63	5.73	0.17695	1.00000
B*14:02	0	1	0.00	0.00	480.48	1.00000	1.00000
B*15:01	1	44	0.27	0.01	1.65	0.24852	1.00000
B*15:02	8	59	1.75	0.70	3.84	0.15085	1.00000
B*15:07	0	3	0.00	0.00	30.21	1.00000	1.00000
B*15:11	0	12	0.00	0.00	4.50	1.00000	1.00000
B*15:12	2	3	8.40	0.69	74.35	0.04741	0.79638
B*15:13	0	1	0.00	0.00	480.48	1.00000	1.00000
B*15:18	0	5	0.00	0.00	13.67	1.00000	1.00000
B*15:19	0	2	0.00	0.00	66.32	1.00000	1.00000
B*15:21	0	1	0.00	0.00	480.48	1.00000	1.00000
B*15:25	0	10	0.00	0.00	5.59	1.00000	1.00000
B*15:27	2	4	6.30	0.56	44.72	0.06772	0.79638
B*15:32	0	1	0.00	0.00	480.48	1.00000	1.00000
B*15:58	0	4	0.00	0.00	18.95	1.00000	1.00000
B*18:01	0	4	0.00	0.00	18.95	1.00000	1.00000
B*18:02	1	0	-	-	-	-	-
B*27:04	1	24	0.51	0.01	3.22	1.00000	1.00000
B*27:05	0	3	0.00	0.00	30.21	1.00000	1.00000
B*27:06	0	2	0.00	0.00	66.32	1.00000	1.00000
B*27:07	0	3	0.00	0.00	30.21	1.00000	1.00000
B*35:01	0	26	0.00	0.00	1.89	0.25297	1.00000
B*35:03	1	8	1.56	0.03	11.83	0.50326	1.00000
B*35:05	1	5	2.50	0.05	22.65	0.37241	1.00000
B*35:08	0	1	0.00	0.00	480.48	1.00000	1.00000
B*37:01	1	6	2.08	0.04	17.42	0.41942	1.00000
B*38:01	0	5	0.00	0.00	13.67	1.00000	1.00000
B*38:02	8	40	2.62	1.03	5.92	0.02209	0.64780

B*39:01	2	20	1.25	0.14	5.27	0.67663	1.00000
B*39:05	1	1	12.48	0.16	976.38	0.14361	1.00000
B*40:01	15	181	1.03	0.54	1.86	0.88251	1.00000
B*40:02	0	13	0.00	0.00	4.10	0.61542	1.00000
B*40:03	0	1	0.00	0.00	480.48	1.00000	1.00000
B*40:06	1	20	0.62	0.01	3.95	1.00000	1.00000
B*40:10	0	1	0.00	0.00	480.48	1.00000	1.00000
B*41:02	0	1	0.00	0.00	480.48	1.00000	1.00000
B*44:02	0	2	0.00	0.00	66.32	1.00000	1.00000
B*44:03	2	14	1.79	0.19	7.98	0.33768	1.00000
B*45:01	0	1	0.00	0.00	480.48	1.00000	1.00000
B*46:01	7	168	0.48	0.18	1.05	0.06247	0.79638
B*48:01	2	15	1.67	0.18	7.35	0.36571	1.00000
B*48:03	0	1	0.00	0.00	480.48	1.00000	1.00000
B*48:04	0	1	0.00	0.00	480.48	1.00000	1.00000
B*50:01	0	2	0.00	0.00	66.32	1.00000	1.00000
B*51:01	4	52	0.95	0.24	2.68	1.00000	1.00000
B*51:02	2	20	1.25	0.14	5.27	0.67663	1.00000
B*51:06	0	1	0.00	0.00	480.48	1.00000	1.00000
B*52:01	1	11	1.13	0.03	7.93	0.60706	1.00000
B*54:01	1	33	0.37	0.01	2.26	0.50827	1.00000
B*55:02	4	32	1.58	0.40	4.59	0.33710	1.00000
B*55:04	0	2	0.00	0.00	66.32	1.00000	1.00000
B*55:12	0	2	0.00	0.00	66.32	1.00000	1.00000
B*56:01	0	8	0.00	0.00	7.34	1.00000	1.00000
B*56:04	1	0	-	-	-	-	-
B*57:01	0	5	0.00	0.00	13.67	1.00000	1.00000
B*58:01	5	106	0.56	0.17	1.41	0.25857	1.00000
B*67:01	1	3	4.16	0.08	52.45	0.26678	1.00000
B*81:02	0	1	0.00	0.00	480.48	1.00000	1.00000
C*01:02	12	217	0.64	0.31	1.21	0.20841	1.00000
C*01:03	0	6	0.00	0.00	10.64	1.00000	1.00000
C*01:06	0	1	0.00	0.00	480.48	1.00000	1.00000
C*01:08	0	1	0.00	0.00	480.48	1.00000	1.00000
C*02:02	0	4	0.00	0.00	18.95	1.00000	1.00000
C*03:02	6	107	0.68	0.24	1.58	0.45403	1.00000
C*03:03	0	64	0.00	0.00	0.71	0.01199	0.46970
C*03:04	15	152	1.27	0.66	2.30	0.42783	1.00000
C*04:01	3	58	0.63	0.12	2.00	0.61758	1.00000
C*04:03	3	17	2.23	0.41	7.92	0.18250	1.00000
C*04:06	0	1	0.00	0.00	480.48	1.00000	1.00000
C*04:15	0	1	0.00	0.00	480.48	1.00000	1.00000
C*04:82	1	0	-	-	-	-	-
C*05:01	0	3	0.00	0.00	30.21	1.00000	1.00000
C*06:02	5	44	1.43	0.43	3.74	0.40551	1.00000
C*07:01	0	1	0.00	0.00	480.48	1.00000	1.00000
C*07:02	24	202	1.64	0.96	2.72	0.05012	0.79638
C*07:04	1	7	1.78	0.04	14.10	0.46296	1.00000
C*07:06	1	2	6.25	0.11	121.06	0.20756	1.00000
C*08:01	10	91	1.41	0.63	2.85	0.32232	1.00000
C*08:02	0	1	0.00	0.00	480.48	1.00000	1.00000
C*08:03	0	4	0.00	0.00	18.95	1.00000	1.00000
C*08:22	0	1	0.00	0.00	480.48	1.00000	1.00000
C*12:02	1	29	0.42	0.01	2.61	0.72079	1.00000
C*12:03	3	26	1.45	0.27	4.86	0.47189	1.00000
C*14:02	4	43	1.16	0.30	3.31	0.77437	1.00000
C*14:03	0	6	0.00	0.00	10.64	1.00000	1.00000
C*15:02	3	43	0.86	0.17	2.78	1.00000	1.00000
C*15:05	0	7	0.00	0.00	8.69	1.00000	1.00000
C*16:02	0	2	0.00	0.00	66.32	1.00000	1.00000
C*17:01	0	1	0.00	0.00	480.48	1.00000	1.00000
Class II							
DPA1*01:03	18	319	0.63	0.35	1.08	0.08915	0.81613
DPA1*01:04	0	1	0.00	0.00	480.48	1.00000	1.00000
DPA1*01:11	0	1	0.00	0.00	480.48	1.00000	1.00000
DPA1*02:01	13	121	1.39	0.69	2.61	0.29560	1.00000
DPA1*02:02	58	655	1.27	0.80	2.03	0.32390	1.00000
DPA1*02:07	1	2	6.25	0.11	121.06	0.20756	1.00000
DPA1*04:01	2	43	0.57	0.07	2.24	0.76929	1.00000

DPB1*01:01	0	1	0.00	0.00	480.48	1.00000	1.00000
DPB1*02:01	6	164	0.42	0.15	0.97	0.03954	0.79638
DPB1*02:02	4	86	0.56	0.15	1.54	0.40096	1.00000
DPB1*03:01	3	53	0.69	0.14	2.21	0.79359	1.00000
DPB1*04:01	3	86	0.41	0.08	1.29	0.14560	1.00000
DPB1*04:02	3	27	1.39	0.27	4.66	0.48507	1.00000
DPB1*05:01	48	502	1.39	0.89	2.18	0.12874	1.00000
DPB1*09:01	1	13	0.95	0.02	6.49	1.00000	1.00000
DPB1*10:01	0	1	0.00	0.00	480.48	1.00000	1.00000
DPB1*104:01	1	2	6.25	0.11	121.06	0.20756	1.00000
DPB1*105:01	0	1	0.00	0.00	480.48	1.00000	1.00000
DPB1*107:01	2	5	5.04	0.47	31.31	0.09029	0.81613
DPB1*13:01	5	88	0.69	0.21	1.73	0.54043	1.00000
DPB1*135:01	3	3	12.73	1.68	96.46	0.00680	0.37995
DPB1*14:01	8	41	2.55	1.00	5.76	0.02481	0.64780
DPB1*16:01	0	2	0.00	0.00	66.32	1.00000	1.00000
DPB1*17:01	1	25	0.49	0.01	3.07	0.71556	1.00000
DPB1*19:01	1	5	2.50	0.05	22.65	0.37241	1.00000
DPB1*21:01	2	25	0.99	0.11	4.09	1.00000	1.00000
DPB1*22:01	0	1	0.00	0.00	480.48	1.00000	1.00000
DPB1*25:01	1	0	-	-	-	-	-
DPB1*26:01	0	1	0.00	0.00	480.48	1.00000	1.00000
DPB1*28:01	0	4	0.00	0.00	18.95	1.00000	1.00000
DPB1*31:01	0	3	0.00	0.00	30.21	1.00000	1.00000
DPB1*38:01	0	1	0.00	0.00	480.48	1.00000	1.00000
DPB1*41:01	0	1	0.00	0.00	480.48	1.00000	1.00000
DPB1*45:01	0	1	0.00	0.00	480.48	1.00000	1.00000
DQA1*01:01	1	40	0.30	0.01	1.83	0.35958	1.00000
DQA1*01:02	34	227	2.36	1.46	3.77	0.00028	0.03683
DQA1*01:03	7	88	0.99	0.37	2.21	1.00000	1.00000
DQA1*01:04	8	82	1.23	0.50	2.66	0.53425	1.00000
DQA1*01:05	1	12	1.03	0.02	7.14	1.00000	1.00000
DQA1*02:01	5	54	1.16	0.35	2.98	0.79741	1.00000
DQA1*03:01	6	76	0.98	0.34	2.32	1.00000	1.00000
DQA1*03:02	13	173	0.92	0.46	1.71	0.88043	1.00000
DQA1*03:03	6	86	0.86	0.30	2.02	1.00000	1.00000
DQA1*03:XX	0	2	0.00	0.00	66.32	1.00000	1.00000
DQA1*04:01	0	12	0.00	0.00	4.50	1.00000	1.00000
DQA1*05:01	3	74	0.49	0.10	1.53	0.26843	1.00000
DQA1*05:02	0	2	0.00	0.00	66.32	1.00000	1.00000
DQA1*05:03	0	28	0.00	0.00	1.74	0.26139	1.00000
DQA1*05:05	3	87	0.41	0.08	1.28	0.14540	1.00000
DQA1*05:06	1	0	-	-	-	-	-
DQA1*05:07	0	1	0.00	0.00	480.48	1.00000	1.00000
DQA1*05:08	0	4	0.00	0.00	18.95	1.00000	1.00000
DQA1*05:09	0	1	0.00	0.00	480.48	1.00000	1.00000
DQA1*06:01	4	93	0.51	0.13	1.41	0.23068	1.00000
DQB1*02:01	3	75	0.48	0.09	1.51	0.26814	1.00000
DQB1*02:02	5	49	1.28	0.39	3.32	0.59273	1.00000
DQB1*03:01	8	226	0.39	0.16	0.81	0.00808	0.37995
DQB1*03:02	6	77	0.96	0.33	2.29	1.00000	1.00000
DQB1*03:03	13	198	0.78	0.39	1.46	0.56420	1.00000
DQB1*03:04	0	1	0.00	0.00	480.48	1.00000	1.00000
DQB1*04:01	6	53	1.43	0.49	3.46	0.44043	1.00000
DQB1*04:02	0	16	0.00	0.00	3.24	0.62488	1.00000
DQB1*05:01	2	42	0.58	0.07	2.30	0.76727	1.00000
DQB1*05:02	19	133	1.97	1.09	3.43	0.01944	0.64780
DQB1*05:03	6	47	1.62	0.55	3.96	0.27907	1.00000
DQB1*06:01	16	126	1.70	0.89	3.05	0.08684	0.81613
DQB1*06:02	2	54	0.45	0.05	1.75	0.42964	1.00000
DQB1*06:03	0	10	0.00	0.00	5.59	1.00000	1.00000
DQB1*06:04	0	9	0.00	0.00	6.35	1.00000	1.00000
DQB1*06:09	4	21	2.42	0.59	7.41	0.10956	0.91951
DQB1*06:10	2	5	5.04	0.47	31.31	0.09029	0.81613
DRB1*01:01	0	12	0.00	0.00	4.50	1.00000	1.00000
DRB1*01:02	0	1	0.00	0.00	480.48	1.00000	1.00000
DRB1*03:01	3	77	0.47	0.09	1.46	0.26912	1.00000
DRB1*03:27	0	1	0.00	0.00	480.48	1.00000	1.00000
DRB1*04:01	0	9	0.00	0.00	6.35	1.00000	1.00000

DRB1*04:03	2	29	0.85	0.10	3.47	1.00000	1.00000
DRB1*04:04	0	4	0.00	0.00	18.95	1.00000	1.00000
DRB1*04:05	7	63	1.41	0.53	3.21	0.35359	1.00000
DRB1*04:06	2	31	0.80	0.09	3.22	1.00000	1.00000
DRB1*04:07	1	4	3.12	0.06	31.96	0.32162	1.00000
DRB1*04:10	0	1	0.00	0.00	480.48	1.00000	1.00000
DRB1*07:01	5	55	1.14	0.35	2.92	0.79920	1.00000
DRB1*08:01	0	1	0.00	0.00	480.48	1.00000	1.00000
DRB1*08:02	0	8	0.00	0.00	7.34	1.00000	1.00000
DRB1*08:03	7	77	1.14	0.43	2.57	0.66961	1.00000
DRB1*08:09	0	3	0.00	0.00	30.21	1.00000	1.00000
DRB1*09:01	13	191	0.82	0.41	1.52	0.66122	1.00000
DRB1*10:01	1	11	1.13	0.03	7.93	0.60706	1.00000
DRB1*11:01	2	64	0.37	0.04	1.45	0.22597	1.00000
DRB1*11:03	0	1	0.00	0.00	480.48	1.00000	1.00000
DRB1*11:04	0	1	0.00	0.00	480.48	1.00000	1.00000
DRB1*11:06	0	1	0.00	0.00	480.48	1.00000	1.00000
DRB1*11:29	0	1	0.00	0.00	480.48	1.00000	1.00000
DRB1*12:01	2	35	0.70	0.08	2.81	1.00000	1.00000
DRB1*12:02	4	101	0.47	0.12	1.28	0.17309	1.00000
DRB1*13:01	0	9	0.00	0.00	6.35	1.00000	1.00000
DRB1*13:02	4	29	1.74	0.44	5.13	0.30237	1.00000
DRB1*13:05	0	1	0.00	0.00	480.48	1.00000	1.00000
DRB1*13:07	0	1	0.00	0.00	480.48	1.00000	1.00000
DRB1*13:12	0	21	0.00	0.00	2.39	0.39589	1.00000
DRB1*14:03	0	4	0.00	0.00	18.95	1.00000	1.00000
DRB1*14:04	2	9	2.79	0.29	13.79	0.19523	1.00000
DRB1*14:05	2	21	1.19	0.13	4.98	0.68732	1.00000
DRB1*14:07	0	2	0.00	0.00	66.32	1.00000	1.00000
DRB1*14:18	0	2	0.00	0.00	66.32	1.00000	1.00000
DRB1*14:54	4	51	0.97	0.25	2.74	1.00000	1.00000
DRB1*15:01	16	123	1.74	0.92	3.14	0.05957	0.79638
DRB1*15:02	1	30	0.41	0.01	2.51	0.72385	1.00000
DRB1*15:04	0	2	0.00	0.00	66.32	1.00000	1.00000
DRB1*16:02	14	55	3.54	1.74	6.81	0.00031	0.03683

P values were adjusted using FDR.

Supplementary table 3: List of peptide sequences within NR1 protein which show strong binding levels to DRB1*16:02

Starting residue number	Peptide	Core	Affinity (nM)	%Rank	1/%Rank	Binding Level
109	YTAGFYRIPVLGLTT	FYRIPVLGL	47.16	1	1	SB
110	TAGFYRIPVLGLTTR	FYRIPVLGL	42.29	0.8	1.250	SB
111	AGFYRIPVLGLTTRM	FYRIPVLGL	44.07	0.9	1.111	SB
131	KSIHLSFLRTVPPYS	FLRTVPPYS	47.84	1	1	SB
132	SIHLSFLRTVPPYSH	FLRTVPPYS	32.16	0.4	2.500	SB
133	IHLSFLRTVPPYSHQ	FLRTVPPYS	28.75	0.3	3.333	SB
134	HLSFLRTVPPYSHQS	FLRTVPPYS	28.66	0.3	3.333	SB
135	LSFLRTVPPYSHQSS	FLRTVPPYS	33.53	0.5	2	SB
641	MIIVASYTANLAAFL	YTANLAAFL	47.34	1	1	SB
642	IIVASYTANLAAFLV	YTANLAAFL	38.81	0.6	1.667	SB
643	IVASYTANLAAFLVL	YTANLAAFL	36.64	0.6	1.667	SB
644	VASYTANLAAFLVLD	YTANLAAFL	44.7	0.9	1.111	SB
874	PKKKATFRAITSTLA	FRAITSTLA	21.5	0.1	10	SB
875	KKKATFRAITSTLAS	FRAITSTLA	14.72	0.01	100	SB
876	KKATFRAITSTLASS	FRAITSTLA	13.08	0.01	100	SB
877	KATFRAITSTLASSF	FRAITSTLA	12.34	0.01	100	SB
878	ATFRAITSTLASSFK	FRAITSTLA	14.87	0.01	100	SB
879	TFRAITSTLASSFKR	FRAITSTLA	18.95	0.05	20	SB
880	FRAITSTLASSFKRR	FRAITSTLA	47.33	1	1	SB

AA. amino acid; Peptide. amino acid sequence used for binding prediction; Core. binding core register within the peptide; Affinity. predicted binding affinity in nanomolar IC50; %Rank. % Rank of predicted affinity compared to a set of 200.000 random natural peptides; SB. strong binding which was defined as % Rank of no more than 1%. 1/%Rank represents the relative binding affinity of each peptide.