

Supplemental Table 1: List of STOP_gain variants in C57BL/6J

Transcript	Gene	A = Consensus score (=strains/36)	B = BL/6J-like strains	Total score = A x (1-B/36)	Consensus protein length	C57BL/6J length	Difference	Ratio
ENSMUST00000119139	6330408A02Rik(BL)	1.000	0	1.000	849	447	402	0.527
ENSMUST00000182014	Sftpb(BL)	1.000	0	1.000	377	241	136	0.639
ENSMUST00000056470	Zfp459(BL)	0.861	5	0.742	332	267	65	0.804
ENSMUST00000181319	Zfp493(BL)	0.833	6	0.694	122	110	12	0.902
ENSMUST00000092559	Acbd4(BL)	0.833	6	0.694	329	86	243	0.261
ENSMUST00000129870	Acbd4(BL)	0.389	5	0.335	239	86	153	0.360
ENSMUST00000107908	Msi2(BL)	0.806	7	0.649	193	158	35	0.819
ENSMUST00000129679	Jmjd7(BL)	0.806	7	0.649	99	21	78	0.212
ENSMUST00000178207	1600014C10Rik(BL)	0.806	7	0.649	141	83	58	0.589
ENSMUST00000179992	1600014C10Rik(BL)	0.806	7	0.649	141	83	58	0.589
ENSMUST00000099486	Lcmt2(BL)	0.750	6	0.625	450	441	9	0.980
ENSMUST00000172138	Cd180(BL)	0.750	9	0.562	48	41	7	0.854
ENSMUST00000205287	Tsen34(BL)	0.750	8	0.583	353	295	58	0.836
ENSMUST00000127857	Pdik1l(BL)	0.722	8	0.562	161	155	6	0.963
ENSMUST00000218681	Alx1(BL)	0.722	9	0.542	259	255	4	0.985
ENSMUST00000002418	Borcs8(BL)	0.611	11	0.424	139	120	19	0.863
ENSMUST00000110139	Borcs8(BL)	0.611	11	0.424	132	113	19	0.856
ENSMUST00000178992	3110021N24Rik(BL)	0.667	11	0.463	215	152	63	0.707
ENSMUST00000035076	Lrrc2(BL)	0.667	12	0.444	389	371	18	0.954
ENSMUST00000145256	Zfp961(BL)	0.667	12	0.444	79	78	1	0.987
ENSMUST00000081202	Manbal(BL)	0.639	13	0.408	87	85	2	0.977
ENSMUST00000119575	Gimap4(BL)	0.500	13	0.319	68	58	10	0.853
ENSMUST00000120990	Olfml1(BL)	0.639	13	0.408	402	233	169	0.580
ENSMUST00000143623	Cfap126(BL)	0.639	13	0.408	99	61	38	0.616
ENSMUST00000093219	Nsg2(BL)	0.028	14	0.017	102	100	2	0.980
ENSMUST00000094654	Gnrhr(BL)	0.611	13	0.390	293	264	29	0.901
ENSMUST00000105698	Gm572(BL)	0.583	13	0.373	400	399	1	0.998
ENSMUST00000029744	Itga10(BL)	0.583	15	0.340	1169	1167	2	0.998
ENSMUST00000113104	Kir3dl1(BL)	0.556	14	0.340	333	316	17	0.949
ENSMUST00000113105	Kir3dl1(BL)	0.556	14	0.340	432	409	23	0.947
ENSMUST00000119365	Itga10(BL)	0.583	15	0.340	1168	1166	2	0.998
ENSMUST00000130033	Tcte2(BL)	0.556	16	0.309	100	50	50	0.500
ENSMUST00000182519	Sbp(BL)	0.556	16	0.309	101	95	6	0.941
ENSMUST00000100928	Rabep1(BL)	0.528	17	0.279	869	827	42	0.952

Supplemental Table 2: List of STOP_loss variants in C57BL/6J

Transcript	Gene	A = Consensus score (=strains/36)	B = BL/6J-like strains	Total score = A x (1-B/36)	Consensus protein length	C57BL/6J length	Difference	Ratio
ENSMUST0000048762	Cilp(BL)	1.000	0	1.000	1184	1250	66	1.056
ENSMUST0000053445	Kndc1(BL)	1.000	0	1.000	1005	1742	737	1.733
ENSMUST0000067760	Nadk2(BL)	1.000	0	1.000	353	452	99	1.280
ENSMUST00000100789	Nadk2(BL)	1.000	0	1.000	259	401	142	1.548
ENSMUST00000100790	Nadk2(BL)	1.000	0	1.000	331	430	99	1.299
ENSMUST00000171018	Bean1(BL)	0.972	0	0.972	42	326	284	7.762
ENSMUST0000064493	D930048N14Rik(BL)	0.972	1	0.945	122	225	103	1.844
ENSMUST00000117859	D930048N14Rik(BL)	0.972	1	0.945	122	147	25	1.205
ENSMUST0000077535	Rpp21(BL)	0.917	3	0.840	69	71	2	1.029
ENSMUST00000154199	Dmpk(BL)	0.917	3	0.840	557	588	31	1.056
ENSMUST00000180165	Olf332(BL)	0.889	3	0.815	335	344	9	1.027
ENSMUST0000020732	Obscn(BL)	0.833	4	0.741	4537	7646	3109	1.685
ENSMUST0000024492	Acbd4(BL)	0.833	6	0.694	76	327	251	4.303
ENSMUST00000099488	Cendbp1(BL)	0.833	6	0.694	364	375	11	1.030
ENSMUST00000107040	Acbd4(BL)	0.833	6	0.694	36	287	251	7.972
ENSMUST00000109582	Ces1b(BL)	0.833	5	0.718	260	567	307	2.181
ENSMUST0000059997	A430105I19Rik(BL)	0.806	7	0.649	9	545	536	60.556
ENSMUST0000096106	Muc4(BL)	0.806	5	0.694	1141	3470	2329	3.041
ENSMUST00000173083	Gm20726(BL)	0.806	7	0.649	133	150	17	1.128
ENSMUST00000031447	Anxa3(BL)	0.778	8	0.605	208	323	115	1.553
ENSMUST00000037059	Ctrc(BL)	0.778	8	0.605	51	267	216	5.235
ENSMUST00000105781	Ctrc(BL)	0.778	8	0.605	56	235	179	4.196
ENSMUST00000135440	Spata3(BL)	0.778	8	0.605	166	171	5	1.030
ENSMUST00000152501	Spata3(BL)	0.778	8	0.605	165	170	5	1.030
ENSMUST00000152871	Dhps(BL)	0.778	8	0.605	9	149	140	16.556
ENSMUST00000155527	Cdh8(BL)	0.778	5	0.670	750	754	4	1.005
ENSMUST00000069631	Iba57(BL)	0.750	9	0.562	143	172	29	1.203
ENSMUST00000077820	Cxcl11(BL)	0.750	9	0.562	53	99	46	1.868
ENSMUST00000088867	Klra2(BL)	0.750	8	0.583	255	321	66	1.259
ENSMUST00000137433	Iba57(BL)	0.750	9	0.562	205	215	10	1.049
ENSMUST00000170878	Cd180(BL)	0.750	9	0.562	88	105	17	1.193
ENSMUST00000054930	Ptx4(BL)	0.722	10	0.522	478	482	4	1.008
ENSMUST00000065815	Glt8d2(BL)	0.722	8	0.562	338	363	25	1.074
ENSMUST00000140948	Mcm2d2(BL)	0.722	8	0.562	681	692	11	1.016
ENSMUST00000146647	Kank1(BL)	0.722	10	0.522	6	40	34	6.667
ENSMUST00000162666	Clec2i(BL)	0.722	8	0.562	41	246	205	6.000
ENSMUST00000164761	Uroc1(BL)	0.694	11	0.482	311	710	399	2.283
ENSMUST00000168018	Cope(BL)	0.694	11	0.482	109	112	3	1.028
ENSMUST00000170255	Cyp2d11(BL)	0.694	9	0.521	409	504	95	1.232
ENSMUST00000222103	Atp6v1c2(BL)	0.694	8	0.540	97	102	5	1.052
ENSMUST0000025968	Cyp2c39(BL)	0.667	12	0.444	114	490	376	4.298
ENSMUST0000030285	Calr4(BL)	0.667	12	0.444	25	420	395	16.800
ENSMUST0000035201	Rbm6(BL)	0.667	12	0.444	800	986	186	1.232
ENSMUST00000041920	Cd1d2(BL)	0.667	12	0.444	242	335	93	1.384
ENSMUST00000066514	Nudt7(BL)	0.667	12	0.444	34	207	173	6.088
ENSMUST00000183032	Rbm6(BL)	0.667	12	0.444	932	1118	186	1.200
ENSMUST00000207097	U2af2(BL)	0.667	11	0.463	104	111	7	1.067
ENSMUST00000210064	Olf3548-ps1(BL)	0.667	12	0.444	118	314	196	2.661
ENSMUST00000216998	Nxpe4(BL)	0.667	10	0.481	397	426	29	1.073
ENSMUST00000002456	Nt5c1b(BL)	0.639	8	0.497	13	573	560	44.077
ENSMUST00000040802	Zfp957(BL)	0.639	13	0.408	305	567	262	1.859
ENSMUST00000048430	Cer1(BL)	0.639	13	0.408	173	272	99	1.572
ENSMUST00000064744	Gm5111(BL)	0.639	13	0.408	37	190	153	5.135
ENSMUST00000095916	Gm5800(BL)	0.639	12	0.426	176	186	10	1.057
ENSMUST00000099473	Wdr76(BL)	0.639	13	0.408	111	320	209	2.883
ENSMUST00000109958	Serpina3i(BL)	0.639	12	0.426	245	408	163	1.665
ENSMUST00000118657	Nt5c1b(BL)	0.639	8	0.497	13	555	542	42.692
ENSMUST00000143739	Nt5c1b(BL)	0.639	8	0.497	13	271	258	20.846

Transcript	Gene	A = Consensus score (=strains/36)	B = BL/6J-like strains	Total score = A x (1-B/36)	Consensus protein length	C57BL/6J length	Difference	Ratio
ENSMUST00000147323	Nt5c1b(BL)	0.639	7	0.515	13	474	461	36.462
ENSMUST00000161649	Zfp957(BL)	0.639	13	0.408	305	567	262	1.859
ENSMUST00000194875	Ip6k2(BL)	0.639	13	0.408	94	110	16	1.170
ENSMUST00000217944	Nt5c1b(BL)	0.639	8	0.497	13	615	602	47.308
ENSMUST00000218026	Nt5c1b(BL)	0.639	8	0.497	13	280	267	21.538
ENSMUST00000218287	Nt5c1b(BL)	0.639	8	0.497	13	378	365	29.077
ENSMUST00000218327	Nt5c1b(BL)	0.639	8	0.497	13	302	289	23.231
ENSMUST00000218339	Nt5c1b(BL)	0.639	8	0.497	13	571	558	43.923
ENSMUST00000218417	Nt5c1b(BL)	0.639	8	0.497	13	362	349	27.846
ENSMUST00000218551	Nt5c1b(BL)	0.639	8	0.497	13	391	378	30.077
ENSMUST00000219049	Nt5c1b(BL)	0.639	8	0.497	13	269	256	20.692
ENSMUST00000219292	Nt5c1b(BL)	0.639	8	0.497	13	320	307	24.615
ENSMUST00000219826	Nt5c1b(BL)	0.639	8	0.497	13	631	618	48.538
ENSMUST00000220257	Nt5c1b(BL)	0.639	8	0.497	13	382	369	29.385
ENSMUST00000220611	Nt5c1b(BL)	0.639	8	0.497	13	452	439	34.769
ENSMUST00000223534	Nt5c1b(BL)	0.639	8	0.497	13	557	544	42.846
ENSMUST00000037836	Fgfr1op2(BL)	0.611	14	0.373	54	172	118	3.185
ENSMUST00000050933	Oog3(BL)	0.611	14	0.373	495	500	5	1.010
ENSMUST00000058245	Fgfr1op2(BL)	0.611	14	0.373	54	172	118	3.185
ENSMUST00000062609	Zkscan4(BL)	0.611	14	0.373	477	480	3	1.006
ENSMUST00000067404	Fgfr1op2(BL)	0.611	14	0.373	54	215	161	3.981
ENSMUST00000073532	Gm13089(BL)	0.611	13	0.390	65	455	390	7.000
ENSMUST00000111314	Adamts4(BL)	0.611	14	0.373	27	648	621	24.000
ENSMUST00000111663	Fgfr1op2(BL)	0.611	14	0.373	54	253	199	4.685
ENSMUST00000140239	Cers1(BL)	0.611	13	0.390	339	350	11	1.032
ENSMUST00000174251	Phox2b(BL)	0.611	14	0.373	153	192	39	1.255
ENSMUST00000187618	Pik3c2g(BL)	0.611	12	0.407	391	401	10	1.026
ENSMUST00000059037	Trim12c(BL)	0.583	15	0.340	493	497	4	1.008
ENSMUST00000077582	Pla2g2a(BL)	0.583	15	0.340	67	145	78	2.164
ENSMUST00000099719	Pgbd1(BL)	0.583	13	0.373	205	415	210	2.024
ENSMUST00000099842	Olf1156(BL)	0.583	11	0.405	320	323	3	1.009
ENSMUST00000122872	Pgbd1(BL)	0.583	14	0.356	168	378	210	2.250
ENSMUST00000130139	Trim12c(BL)	0.583	15	0.340	493	497	4	1.008
ENSMUST00000145494	Pgbd1(BL)	0.583	13	0.373	205	276	71	1.346
ENSMUST00000151743	Pgbd1(BL)	0.583	13	0.373	205	415	210	2.024
ENSMUST00000171830	Trim30b(BL)	0.583	13	0.373	134	159	25	1.187
ENSMUST00000213957	Spg21(BL)	0.583	11	0.405	291	306	15	1.052
ENSMUST00000216191	Olf1156(BL)	0.583	11	0.405	320	323	3	1.009
ENSMUST0000029268	1810062G17Rik(BL)	0.556	9	0.417	115	129	14	1.122
ENSMUST00000079915	Skint11(BL)	0.556	16	0.309	151	173	22	1.146
ENSMUST00000122001	Tnfrsf18(BL)	0.556	15	0.324	222	314	92	1.414
ENSMUST00000141244	Meph1(BL)	0.556	15	0.324	86	112	26	1.302
ENSMUST00000148039	Dpp6(BL)	0.556	16	0.309	20	40	20	2.000
ENSMUST00000164297	Skint11(BL)	0.556	16	0.309	342	364	22	1.064
ENSMUST00000173362	Mocs1(BL)	0.556	14	0.340	210	228	18	1.086
ENSMUST00000055014	Skint7(BL)	0.528	13	0.337	250	252	2	1.008
ENSMUST00000093902	Rnf213(BL)	0.528	16	0.293	3527	5152	1625	1.461
ENSMUST00000105805	Gm13030(BL)	0.528	15	0.308	71	143	72	2.014
ENSMUST00000131035	Rnf213(BL)	0.528	16	0.293	3526	5151	1625	1.461
ENSMUST00000045810	Zfp446(BL)	0.500	16	0.278	165	523	358	3.170
ENSMUST00000129954	Oprm1(BL)	0.472	5	0.407	444	448	4	1.009
ENSMUST00000052829	Fam166b(BL)	0.167	15	0.097	342	379	37	1.108

Supplemental Table 3: List of SNIP and in-frame indel variants in C57BL/6J.

Transcript	Gene	A = Consensus score (=strains/36)	B = BL/6J-like strains	Total score = A x (1-B/36)	AA Mutation	Supporting Sequences	PROVEAN Score
ENSMUST0000051179	Fam181b (BL)	1.000	0	1.000	D373_C374insL	131	-9.288
ENSMUST00000173689	Jmjd1c (BL)	1.000	0	1.000	P1715L	563	-8.947
ENSMUST00000174408	Jmjd1c (BL)	1.000	0	1.000	P1896L	564	-8.947
ENSMUST00000032835	Acan (BL)	1.000	0	1.000	P1938H	116	-8.415
ENSMUST00000076226	Herc2 (BL)	1.000	0	1.000	D1235G	447	-6.505
ENSMUST00000164095	Herc2 (BL)	1.000	0	1.000	D1235G	447	-6.505
ENSMUST00000031985	Mktn1 (BL)	1.000	0	1.000	Y346N	513	-6.413
ENSMUST00000114823	Mktn1 (BL)	1.000	0	1.000	Y282N	518	-6.413
ENSMUST00000164579	Slc15a2 (BL)	1.000	0	1.000	T210M	439	-5.190
ENSMUST00000125537	Zc3h7a (BL)	1.000	0	1.000	S24P	328	-4.948
ENSMUST00000142389	Zc3h7a (BL)	1.000	0	1.000	S24P	330	-4.948
ENSMUST00000023616	Slc15a2 (BL)	1.000	0	1.000	T210M	442	-4.913
ENSMUST00000165531	Slc15a2 (BL)	1.000	0	1.000	T179M	442	-4.913
ENSMUST00000037633	Zc3h7a (BL)	1.000	0	1.000	S24P	358	-4.562
ENSMUST00000128083	Zc3h7a (BL)	1.000	0	1.000	S24P	358	-4.562
ENSMUST00000138185	Zc3h7a (BL)	1.000	0	1.000	S24P	358	-4.562
ENSMUST00000130355	Zc3h7a (BL)	1.000	0	1.000	S24P	339	-4.474
ENSMUST00000140755	Zc3h7a (BL)	1.000	0	1.000	S24P	340	-4.280
ENSMUST00000094464	Casz1 (BL)	1.000	0	1.000	P1087L	530	-3.963
ENSMUST00000058865	Pdzk1 (BL)	1.000	0	1.000	D162N	295	-2.930
ENSMUST00000107069	Pdzk1 (BL)	1.000	0	1.000	D162N	295	-2.930
ENSMUST00000107070	Pdzk1 (BL)	1.000	0	1.000	D162N	295	-2.930
ENSMUST00000153256	Pdzk1 (BL)	1.000	0	1.000	D162N	295	-2.930
ENSMUST00000085774	Sdk1 (BL)	0.972	1	0.945	T1009M	375	-4.904
ENSMUST00000074546	Sdk1 (BL)	0.972	1	0.945	T749M	343	-4.818
ENSMUST00000181154	Apol11b (BL)	0.972	1	0.945	R30I	52	-4.519
ENSMUST00000124739	Kif12 (BL)	0.944	2	0.892	P60_G64del	242	-36.482
ENSMUST00000030042	Kif12 (BL)	0.944	2	0.892	P60_G64del	237	-26.313
ENSMUST00000156618	Kif12 (BL)	0.944	2	0.892	P60_G64del	237	-26.313
ENSMUST00000206847	Ceacam10 (BL)	0.944	2	0.892	P42R	160	-8.722
ENSMUST00000038069	Ceacam10 (BL)	0.944	2	0.892	P162R	90	-8.017
ENSMUST00000035849	1700028P14Rik (BL)	0.944	2	0.892	P67L	179	-6.539
ENSMUST00000161458	Zfp949 (BL)	0.944	2	0.892	E349V	123	-6.313
ENSMUST00000162827	Zfp949 (BL)	0.944	2	0.892	E349V	123	-6.313
ENSMUST00000043674	Vars2 (BL)	0.944	2	0.892	R490L	294	-5.116
ENSMUST00000029510	Chil6 (BL)	0.944	2	0.892	Y311H	430	-4.437
ENSMUST00000043865	Mpst (BL)	0.944	2	0.892	G102D	560	-3.592
ENSMUST00000167140	Mpst (BL)	0.944	2	0.892	G102D	560	-3.592
ENSMUST00000169133	Mpst (BL)	0.944	2	0.892	G102D	560	-3.592
ENSMUST00000087689	Prune2 (BL)	0.944	2	0.892	R481H	450	-3.350
ENSMUST00000113614	Adgrf2 (BL)	0.944	2	0.892	R341W	341	-3.250
ENSMUST00000217616	Olf498 (BL)	0.944	2	0.892	I16F	1019	-3.161
ENSMUST00000185847	Ndufs1 (BL)	0.944	2	0.892	A19V	414	-3.151
ENSMUST00000024709	Cd2ap (BL)	0.944	2	0.892	P545S	358	-3.032
ENSMUST00000150557	Tor3a (BL)	0.944	2	0.892	V164L	219	-2.641
ENSMUST00000032258	Clec2e (BL)	0.917	3	0.841	P90S	77	-7.668
ENSMUST00000171692	Serpine3 (BL)	0.917	3	0.841	P370S	202	-6.358
ENSMUST00000150897	Nuggc (BL)	0.917	3	0.841	D741V	189	-6.103
ENSMUST00000169897	Gent1 (BL)	0.917	3	0.841	D362H	281	-5.680
ENSMUST00000174236	Gent1 (BL)	0.917	3	0.841	D362H	281	-5.680
ENSMUST00000027931	Nek2 (BL)	0.917	3	0.841	R69S	350	-5.394
ENSMUST00000108590	Gp6 (BL)	0.917	3	0.841	P154S	129	-5.110
ENSMUST00000206928	Gp6 (BL)	0.917	3	0.841	P154S	128	-5.110
ENSMUST00000108661	Chd3 (BL)	0.917	3	0.841	R390W	1669	-5.064
ENSMUST00000027532	Scly (BL)	0.917	3	0.841	R278W	356	-4.738
ENSMUST00000044190	Hhat (BL)	0.917	3	0.841	G489D	413	-4.708
ENSMUST00000045228	Zkscan8 (BL)	0.917	3	0.841	G562R	737	-4.695
ENSMUST00000022927	Rad21 (BL)	0.917	3	0.841	S374F	517	-3.958

Transcript	Gene	A = Consensus score (=strains/36)	B = BL/6J-like strains	Total score = A x (1-B/36)	AA Mutation	Supporting Sequences	PROVEAN Score
ENSMUST00000108778	Rgs19 (BL)	0.917	3	0.841	E109K	666	-3.673
ENSMUST00000002532	Rgs19 (BL)	0.917	3	0.841	E82K	667	-3.670
ENSMUST00000108771	Rgs19 (BL)	0.917	3	0.841	E60K	667	-3.670
ENSMUST00000108772	Rgs19 (BL)	0.917	3	0.841	E60K	667	-3.670
ENSMUST00000108776	Rgs19 (BL)	0.917	3	0.841	E82K	667	-3.670
ENSMUST00000165416	Rgs19 (BL)	0.917	3	0.841	E82K	667	-3.670
ENSMUST00000108769	Rgs19 (BL)	0.917	3	0.841	E82K	630	-3.606
ENSMUST00000000312	Cdh1 (BL)	0.917	3	0.841	S272F	259	-3.429
ENSMUST00000167688	Cdh1 (BL)	0.917	3	0.841	S272F	259	-3.429
ENSMUST00000205631	Olfr11 (BL)	0.917	3	0.841	L260F	1125	-3.400
ENSMUST00000047677	Ccdc18 (BL)	0.917	3	0.841	G749R	366	-3.337
ENSMUST00000214132	Olfr323 (BL)	0.917	3	0.841	N84K	259	-3.260
ENSMUST00000107547	AI481877 (BL)	0.917	3	0.841	R1359W	145	-3.020
ENSMUST00000116425	Terf2 (BL)	0.917	3	0.841	E426K	276	-2.883
ENSMUST00000020149	Ikbip (BL)	0.917	3	0.841	S164I	205	-2.735
ENSMUST00000068421	Terf2 (BL)	0.917	3	0.841	E426K	246	-2.609
ENSMUST00000053085	Nlrc5 (BL)	0.917	3	0.841	A489S	194	-2.603
ENSMUST00000182409	Nlrc5 (BL)	0.917	3	0.841	A489S	199	-2.603
ENSMUST00000211816	Nlrc5 (BL)	0.917	3	0.841	A489S	194	-2.603
ENSMUST00000106227	Cep131 (BL)	0.889	4	0.790	L337del	191	-13.359
ENSMUST00000204718	Olfr320 (BL)	0.889	4	0.790	P283L	949	-9.136
ENSMUST00000214662	Olfr320 (BL)	0.889	4	0.790	P283L	949	-9.136
ENSMUST00000110674	Lcmt2 (BL)	0.889	4	0.790	P558L	268	-8.917
ENSMUST00000159816	Filip1l (BL)	0.889	4	0.790	G785E	922	-7.551
ENSMUST00000159414	Filip1l (BL)	0.889	4	0.790	G547E	902	-7.285
ENSMUST00000103177	Lpo (BL)	0.889	4	0.790	G404R	601	-7.136
ENSMUST00000109743	Zfp708 (BL)	0.889	4	0.790	G173E	286	-6.986
ENSMUST00000109742	Zfp708 (BL)	0.889	4	0.790	G161E	285	-6.981
ENSMUST00000190566	Zfp708 (BL)	0.889	4	0.790	G128E	185	-6.818
ENSMUST00000032766	Rhcg (BL)	0.889	4	0.790	L333H	446	-6.510
ENSMUST00000020150	Ikbip (BL)	0.889	4	0.790	E197G	235	-5.892
ENSMUST00000082220	Olfr313 (BL)	0.889	4	0.790	R225C	576	-5.741
ENSMUST00000217506	Olfr313 (BL)	0.889	4	0.790	R225C	576	-5.741
ENSMUST00000163062	Arhgef10 (BL)	0.889	4	0.790	R20G	495	-5.701
ENSMUST00000081582	Zfp953 (BL)	0.889	4	0.790	Q100L	150	-5.401
ENSMUST00000044441	Tmem132d (BL)	0.889	4	0.790	G426E	509	-5.202
ENSMUST00000025406	Srfbp1 (BL)	0.889	4	0.790	A128D	170	-5.122
ENSMUST00000221877	Tssc1 (BL)	0.889	4	0.790	D317G	350	-5.054
ENSMUST00000059937	Gm597 (BL)	0.889	4	0.790	P589L	66	-4.373
ENSMUST00000150150	Apitd1 (BL)	0.889	4	0.790	R44G	227	-4.189
ENSMUST00000176124	Apitd1 (BL)	0.889	4	0.790	R44G	227	-4.188
ENSMUST00000026997	Uimc1 (BL)	0.889	4	0.790	I450T	285	-4.185
ENSMUST00000127195	Uimc1 (BL)	0.889	4	0.790	I450T	285	-4.185
ENSMUST00000180242	Cep131 (BL)	0.889	4	0.790	L338del	191	-4.133
ENSMUST00000015791	Lama5 (BL)	0.889	4	0.790	H1171Y	186	-4.067
ENSMUST00000040990	Vwa8 (BL)	0.889	4	0.790	A1794E	325	-4.026
ENSMUST00000099496	Uimc1 (BL)	0.889	4	0.790	I169T	285	-4.014
ENSMUST00000026854	Agbl1 (BL)	0.889	4	0.790	R342M	264	-3.926
ENSMUST00000107442	Agbl1 (BL)	0.889	4	0.790	R342M	270	-3.659
ENSMUST00000156290	Ttc28 (BL)	0.889	4	0.790	L1425F	485	-3.586
ENSMUST00000170941	Trem12 (BL)	0.889	4	0.790	T203I	113	-3.452
ENSMUST00000030813	Apitd1 (BL)	0.889	4	0.790	R109G	243	-3.296
ENSMUST00000041577	Bank1 (BL)	0.889	4	0.790	L75F	197	-3.211
ENSMUST00000024885	Cebpz (BL)	0.889	4	0.790	P199L	299	-3.203
ENSMUST00000169428	Olfr325 (BL)	0.889	4	0.790	T271S	909	-3.176
ENSMUST00000203418	Olfr325 (BL)	0.889	4	0.790	T271S	909	-3.176
ENSMUST00000036865	Fanci (BL)	0.889	4	0.790	A845T	414	-3.105
ENSMUST00000216473	Olfr311 (BL)	0.889	4	0.790	R225H	663	-3.061
ENSMUST00000030131	Zfp462 (BL)	0.889	4	0.790	S452P	474	-2.937
ENSMUST00000079605	Zfp462 (BL)	0.889	4	0.790	S452P	474	-2.937

Transcript	Gene	A = Consensus score (=strains/36)	B = BL/6J-like strains	Total score = A x (1-B/36)	AA Mutation	Supporting Sequences	PROVEAN Score
ENSMUST00000013797	1810065E05Rik (BL)	0.889	4	0.790	F27L	64	-2.936
ENSMUST00000036555	Myo5c (BL)	0.889	4	0.790	I1345T	397	-2.884
ENSMUST00000100487	Eif2ak1 (BL)	0.889	4	0.790	A565V	314	-2.861
ENSMUST00000137667	Fanci (BL)	0.889	4	0.790	A817T	414	-2.851
ENSMUST00000069941	Btnl10 (BL)	0.889	4	0.790	E479del	154	-2.787
ENSMUST00000142499	Btnl10 (BL)	0.889	4	0.790	E479del	154	-2.787
ENSMUST00000081819	Havcr1 (BL)	0.889	4	0.790	T137R	106	-2.746
ENSMUST00000109223	Havcr1 (BL)	0.889	4	0.790	T137R	106	-2.746
ENSMUST00000171802	Mcmde2 (BL)	0.889	4	0.790	A630P	338	-2.745
ENSMUST00000029178	Ctnnbl1 (BL)	0.889	4	0.790	V194A	383	-2.713
ENSMUST00000210099	Lpcat2 (BL)	0.889	4	0.790	R49T	358	-2.696
ENSMUST00000015901	Ppil4 (BL)	0.889	4	0.790	D485A	330	-2.643
ENSMUST00000046290	Lpcat2 (BL)	0.889	4	0.790	R49T	356	-2.613
ENSMUST00000209265	Lpcat2 (BL)	0.889	4	0.790	R49T	331	-2.570
ENSMUST00000047568	Havcr1 (BL)	0.889	4	0.790	T137R	101	-2.512
ENSMUST00000030039	Fmn2 (BL)	0.861	5	0.741	P1142L	101	-8.988
ENSMUST00000031583	Acacb (BL)	0.861	5	0.741	P1387L	1116	-7.500
ENSMUST00000102582	Acacb (BL)	0.861	5	0.741	P1387L	1116	-7.500
ENSMUST00000208177	Qars (BL)	0.861	5	0.741	R114C	364	-7.122
ENSMUST00000170590	Glod4 (BL)	0.861	5	0.741	G14K	241	-7.032
ENSMUST00000150042	Mrpl48 (BL)	0.861	5	0.741	H53R	251	-6.890
ENSMUST00000152876	Mrpl48 (BL)	0.861	5	0.741	H58R	242	-6.856
ENSMUST00000170017	Glod4 (BL)	0.861	5	0.741	G14K	281	-6.739
ENSMUST00000168529	Cyb5r4 (BL)	0.861	5	0.741	Y356C	439	-6.641
ENSMUST00000098242	Ggh (BL)	0.861	5	0.741	P248A	258	-6.541
ENSMUST00000006838	Qars (BL)	0.861	5	0.741	R694C	416	-6.452
ENSMUST00000038227	Ackr1 (BL)	0.861	5	0.741	L221P	252	-6.309
ENSMUST00000134939	Qars (BL)	0.861	5	0.741	R670C	532	-6.193
ENSMUST00000056222	Olf600 (BL)	0.861	5	0.741	G21D	1325	-6.161
ENSMUST00000215042	Olf600 (BL)	0.861	5	0.741	G21D	1325	-6.161
ENSMUST00000032865	Fah (BL)	0.861	5	0.741	G376E	339	-6.059
ENSMUST00000140851	Nek11 (BL)	0.861	5	0.741	R347W	392	-6.047
ENSMUST00000017430	Glod4 (BL)	0.861	5	0.741	G14K	309	-5.794
ENSMUST00000019572	Zfp874b (BL)	0.861	5	0.741	C21Y	131	-5.762
ENSMUST00000095211	Ces1a (BL)	0.861	5	0.741	P73T	509	-5.725
ENSMUST00000040260	Frrs1 (BL)	0.861	5	0.741	G299S	284	-5.656
ENSMUST00000195905	Frrs1 (BL)	0.861	5	0.741	G299S	284	-5.656
ENSMUST00000186303	Gm28557 (BL)	0.861	5	0.741	G81D	206	-5.314
ENSMUST00000015941	Bhmt2 (BL)	0.861	5	0.741	G27S	524	-5.286
ENSMUST00000169701	Glod4 (BL)	0.861	5	0.741	G14K	308	-5.261
ENSMUST00000027090	Crygb (BL)	0.861	5	0.741	R80C	615	-5.059
ENSMUST00000110613	Serinc4 (BL)	0.861	5	0.741	T53R	211	-4.926
ENSMUST00000053098	Zbtb6 (BL)	0.861	5	0.741	R82W	475	-4.753
ENSMUST00000112932	Zbtb6 (BL)	0.861	5	0.741	R82W	475	-4.753
ENSMUST00000121137	Rhpn1 (BL)	0.861	5	0.741	G527S	337	-4.746
ENSMUST00000091526	Rslcan18 (BL)	0.861	5	0.741	G205D	148	-4.670
ENSMUST00000217661	4932415D10Rik (BL)	0.861	5	0.741	M2061_T2062del	86	-4.634
ENSMUST00000102666	Olf62 (BL)	0.861	5	0.741	T249I	1210	-4.579
ENSMUST00000213189	Olf62 (BL)	0.861	5	0.741	T249I	1210	-4.579
ENSMUST00000052140	Haspin (BL)	0.861	5	0.741	P104L	169	-4.525
ENSMUST00000115658	Pcdha11 (BL)	0.861	5	0.741	S151P	845	-4.508
ENSMUST00000039016	Lzts2 (BL)	0.861	5	0.741	R64P	258	-4.172
ENSMUST00000178087	Lzts2 (BL)	0.861	5	0.741	R64P	258	-4.172
ENSMUST00000179108	Lzts2 (BL)	0.861	5	0.741	R64P	258	-4.172
ENSMUST00000061482	Olf543 (BL)	0.861	5	0.741	M83R	394	-4.118
ENSMUST00000219647	Olf543 (BL)	0.861	5	0.741	M83R	394	-4.118
ENSMUST00000056312	Serinc4 (BL)	0.861	5	0.741	T53R	248	-4.099
ENSMUST00000186211	Stpg4 (BL)	0.861	5	0.741	I62T	154	-3.894
ENSMUST00000122222	Cas21 (BL)	0.861	5	0.741	M864I	528	-3.846
ENSMUST00000007046	Tmco6 (BL)	0.861	5	0.741	R243W	447	-3.832

Transcript	Gene	A = Consensus score (=strains/36)	B = BL/6J-like strains	Total score = A x (1-B/36)	AA Mutation	Supporting Sequences	PROVEAN Score
ENSMUST00000034597	Tmprss13 (BL)	0.861	5	0.741	P77L	255	-3.810
ENSMUST00000139806	Cas2l (BL)	0.861	5	0.741	M578I	562	-3.781
ENSMUST00000187078	Stpg4 (BL)	0.861	5	0.741	I62T	156	-3.718
ENSMUST00000040609	Stpg4 (BL)	0.861	5	0.741	I62T	159	-3.594
ENSMUST00000214751	Olf424 (BL)	0.861	5	0.741	Q143H	806	-3.544
ENSMUST0000026096	Bnc1 (BL)	0.861	5	0.741	R715C	360	-3.489
ENSMUST00000103216	Dffa (BL)	0.861	5	0.741	T95I	253	-3.408
ENSMUST00000084843	Xntrpc (BL)	0.861	5	0.741	P1253L	202	-3.407
ENSMUST00000094129	Xntrpc (BL)	0.861	5	0.741	P1253L	202	-3.407
ENSMUST00000110665	Adal (BL)	0.861	5	0.741	T75N	417	-3.386
ENSMUST00000020831	Fam114a2 (BL)	0.861	5	0.741	D297N	333	-3.385
ENSMUST00000108850	Fam114a2 (BL)	0.861	5	0.741	D304N	333	-3.385
ENSMUST00000030816	Dffa (BL)	0.861	5	0.741	T95I	253	-3.374
ENSMUST00000127274	Eno2 (BL)	0.861	5	0.741	R32Q	1069	-3.342
ENSMUST00000138770	Eno2 (BL)	0.861	5	0.741	R32Q	1069	-3.342
ENSMUST00000151214	Eno2 (BL)	0.861	5	0.741	R32Q	1069	-3.342
ENSMUST00000068403	Olf420 (BL)	0.861	5	0.741	S284F	817	-3.338
ENSMUST00000213748	Olf420 (BL)	0.861	5	0.741	S284F	817	-3.338
ENSMUST00000110662	Adal (BL)	0.861	5	0.741	T75N	417	-3.286
ENSMUST00000066994	Zfp395 (BL)	0.861	5	0.741	P204L	252	-3.262
ENSMUST00000174294	Cyb5r4 (BL)	0.861	5	0.741	N7D	417	-3.244
ENSMUST00000194888	Pcdhga1 (BL)	0.861	5	0.741	I365T	880	-3.176
ENSMUST0000028702	Adal (BL)	0.861	5	0.741	T151N	419	-3.152
ENSMUST00000066155	Adal (BL)	0.861	5	0.741	T218N	419	-3.141
ENSMUST00000119031	Adal (BL)	0.861	5	0.741	T218N	419	-3.141
ENSMUST00000141058	Arhgap26 (BL)	0.861	5	0.741	E32K	497	-3.127
ENSMUST00000151757	Arhgap26 (BL)	0.861	5	0.741	E32K	501	-3.127
ENSMUST00000021107	Itgb4 (BL)	0.861	5	0.741	A876T	409	-3.122
ENSMUST00000068981	Itgb4 (BL)	0.861	5	0.741	A877T	411	-3.122
ENSMUST00000106458	Itgb4 (BL)	0.861	5	0.741	A877T	409	-3.122
ENSMUST00000106460	Itgb4 (BL)	0.861	5	0.741	A877T	409	-3.122
ENSMUST00000106461	Itgb4 (BL)	0.861	5	0.741	A877T	409	-3.122
ENSMUST00000169928	Itgb4 (BL)	0.861	5	0.741	A876T	409	-3.122
ENSMUST00000015712	Lpl (BL)	0.861	5	0.741	N354D	444	-2.961
ENSMUST00000168401	Lpl (BL)	0.861	5	0.741	N354D	444	-2.961
ENSMUST00000211329	Olf574 (BL)	0.861	5	0.741	V157F	1377	-2.930
ENSMUST00000167334	Sis (BL)	0.861	5	0.741	N1697K	316	-2.923
ENSMUST00000194190	Pcdhga1 (BL)	0.861	5	0.741	I365T	905	-2.865
ENSMUST00000167565	Zfp712 (BL)	0.861	5	0.741	N40H	166	-2.778
ENSMUST00000045969	Zfp458 (BL)	0.861	5	0.741	P541L	272	-2.738
ENSMUST00000108826	Lypd8 (BL)	0.861	5	0.741	H27Y	64	-2.727
ENSMUST00000189998	Acad11 (BL)	0.861	5	0.741	M426I	317	-2.703
ENSMUST00000124189	Trpc2 (BL)	0.861	5	0.741	P879L	186	-2.687
ENSMUST00000041524	Trmt13 (BL)	0.861	5	0.741	L274V	314	-2.671
ENSMUST00000210381	Gm4924 (BL)	0.861	5	0.741	P118L	107	-2.662
ENSMUST00000047799	Acad11 (BL)	0.861	5	0.741	M426I	324	-2.599
ENSMUST00000135074	Ganc (BL)	0.861	5	0.741	A686T	507	-2.551
ENSMUST00000120854	Acad11 (BL)	0.861	5	0.741	M308I	329	-2.524
ENSMUST00000033230	Tha1 (BL)	0.833	6	0.694	C176Y	139	-10.405
ENSMUST00000137542	Snx1 (BL)	0.833	6	0.694	E87del	442	-10.178
ENSMUST00000036450	Spg11 (BL)	0.833	6	0.694	W217L	305	-8.956
ENSMUST00000053086	Adam6a (BL)	0.833	6	0.694	P127L	115	-8.919
ENSMUST00000058704	Irgm2 (BL)	0.833	6	0.694	P214H	81	-8.354
ENSMUST00000108836	Irgm2 (BL)	0.833	6	0.694	P214H	81	-8.354
ENSMUST00000209079	Irgm2 (BL)	0.833	6	0.694	P226H	81	-8.354
ENSMUST00000108509	Zfp541 (BL)	0.833	6	0.694	G26V	157	-7.407
ENSMUST00000209369	Zfp541 (BL)	0.833	6	0.694	G26V	157	-7.407
ENSMUST00000210805	Zfp541 (BL)	0.833	6	0.694	G26V	157	-7.407
ENSMUST00000072141	Pcd11 (BL)	0.833	6	0.694	P531S	310	-7.142
ENSMUST00000175821	Zfp738 (BL)	0.833	6	0.694	G77E	151	-7.019

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ENSMUST00000110973	Zfp738 (BL)	0.833	6	0.694	G74E	156	-6.961
ENSMUST00000198834	Fbrsl1 (BL)	0.833	6	0.694	H72_Q75del	244	-6.673
ENSMUST00000056124	Fbrsl1 (BL)	0.833	6	0.694	H72_Q75del	242	-6.651
ENSMUST00000037814	Cmtm5 (BL)	0.833	6	0.694	Y77C	270	-6.380
ENSMUST00000026196	Got1 (BL)	0.833	6	0.694	P94L	405	-6.148
ENSMUST00000194046	Ackr1 (BL)	0.833	6	0.694	D56G	241	-6.067
ENSMUST00000063570	Tlr11 (BL)	0.833	6	0.694	F381L	99	-5.950
ENSMUST00000185091	Tlr11 (BL)	0.833	6	0.694	F386L	99	-5.950
ENSMUST00000057070	Zfp456 (BL)	0.833	6	0.694	H152Y	92	-5.707
ENSMUST00000090313	Dytn (BL)	0.833	6	0.694	P497L	96	-5.686
ENSMUST00000075406	Szt2 (BL)	0.833	6	0.694	R2878C	442	-5.504
ENSMUST00000069483	Fbrsl1 (BL)	0.833	6	0.694	H476_T479del	159	-5.346
ENSMUST00000073152	Fastkd1 (BL)	0.833	6	0.694	H471Q	208	-5.121
ENSMUST00000102519	Zfyve19 (BL)	0.833	6	0.694	G94S	367	-5.077
ENSMUST00000023987	Epb42 (BL)	0.833	6	0.694	H22Y	340	-4.999
ENSMUST00000128090	Coq8b (BL)	0.833	6	0.694	R289C	522	-4.892
ENSMUST00000102490	Epb42 (BL)	0.833	6	0.694	H22Y	344	-4.866
ENSMUST00000090174	Zfyve19 (BL)	0.833	6	0.694	G94S	367	-4.743
ENSMUST00000116506	Cep55 (BL)	0.833	6	0.694	D55G	203	-4.703
ENSMUST00000127482	Igsf9 (BL)	0.833	6	0.694	D388N	256	-4.682
ENSMUST00000052629	Igsf9 (BL)	0.833	6	0.694	D388N	263	-4.556
ENSMUST00000213832	Olf427 (BL)	0.833	6	0.694	N42D	1019	-4.542
ENSMUST00000027816	Mptx1 (BL)	0.833	6	0.694	I151T	172	-4.255
ENSMUST00000156256	Nek11 (BL)	0.833	6	0.694	G13R	289	-4.252
ENSMUST00000096096	Cep55 (BL)	0.833	6	0.694	D55G	246	-4.245
ENSMUST00000169673	Cep55 (BL)	0.833	6	0.694	D55G	246	-4.245
ENSMUST00000003860	Coq8b (BL)	0.833	6	0.694	R289C	421	-4.240
ENSMUST00000108378	Coq8b (BL)	0.833	6	0.694	R289C	421	-4.240
ENSMUST00000126166	Acin1 (BL)	0.833	6	0.694	P174L	433	-4.199
ENSMUST00000148754	Acin1 (BL)	0.833	6	0.694	P190L	433	-4.199
ENSMUST00000100986	Esyt2 (BL)	0.833	6	0.694	N454S	446	-4.146
ENSMUST00000220816	Esyt2 (BL)	0.833	6	0.694	N454S	446	-4.146
ENSMUST00000035202	Mon1a (BL)	0.833	6	0.694	N374S	396	-4.111
ENSMUST00000089836	Olf742 (BL)	0.833	6	0.694	R58S	1064	-4.063
ENSMUST00000213935	Olf742 (BL)	0.833	6	0.694	R58S	1064	-4.063
ENSMUST00000217437	Olf742 (BL)	0.833	6	0.694	R58S	1064	-4.063
ENSMUST00000069862	A430033K04Rik (BL)	0.833	6	0.694	S117P	113	-3.952
ENSMUST00000191906	Mon1a (BL)	0.833	6	0.694	N374S	394	-3.911
ENSMUST00000111484	Acin1 (BL)	0.833	6	0.694	P907L	440	-3.780
ENSMUST00000112132	Pzp (BL)	0.833	6	0.694	V1133A	309	-3.775
ENSMUST00000022793	Acin1 (BL)	0.833	6	0.694	P947L	442	-3.774
ENSMUST00000198958	A430033K04Rik (BL)	0.833	6	0.694	S117P	125	-3.761
ENSMUST00000159246	Arpp21 (BL)	0.833	6	0.694	P232H	920	-3.729
ENSMUST00000126403	Sqor (BL)	0.833	6	0.694	D184G	344	-3.701
ENSMUST00000075806	Atp13a5 (BL)	0.833	6	0.694	T1072A	554	-3.664
ENSMUST00000109852	Inpp4b (BL)	0.833	6	0.694	P565H	1011	-3.594
ENSMUST00000172031	Inpp4b (BL)	0.833	6	0.694	P565H	1011	-3.594
ENSMUST00000215332	Inpp4b (BL)	0.833	6	0.694	P565H	1011	-3.594
ENSMUST00000217122	Inpp4b (BL)	0.833	6	0.694	P565H	1011	-3.594
ENSMUST00000026218	Cwf19l1 (BL)	0.833	6	0.694	D83G	420	-3.561
ENSMUST00000190686	Srrm2 (BL)	0.833	6	0.694	P967L	335	-3.547
ENSMUST00000143373	Atp13a5 (BL)	0.833	6	0.694	T1027A	555	-3.498
ENSMUST00000074936	Irak4 (BL)	0.833	6	0.694	R183Q	376	-3.483
ENSMUST00000109248	Irak4 (BL)	0.833	6	0.694	R183Q	376	-3.483
ENSMUST00000096663	Adam25 (BL)	0.833	6	0.694	H174Q	95	-3.478
ENSMUST00000101082	Fancb (BL)	0.833	5	0.717	E435M	122	-3.469
ENSMUST00000042529	Inpp4b (BL)	0.833	6	0.694	P548H	1012	-3.444
ENSMUST00000015277	Lrrk1 (BL)	0.833	6	0.694	G1972S	361	-3.439
ENSMUST00000020200	Cfap54 (BL)	0.833	6	0.694	D488G	166	-3.431
ENSMUST00000033699	Flna (BL)	0.833	6	0.694	A2253V	549	-3.296

Transcript	Gene	A = Consensus score (=strains/36)	B = BL/6J-like strains	Total score = A x (1-B/36)	AA Mutation	Supporting Sequences	PROVEAN Score
ENSMUST00000101454	Flna (BL)	0.833	6	0.694	A2245V	549	-3.296
ENSMUST00000114299	Flna (BL)	0.833	6	0.694	A2245V	549	-3.296
ENSMUST00000035167	Nphp3 (BL)	0.833	6	0.694	A493T	358	-3.278
ENSMUST00000194774	Nphp3 (BL)	0.833	6	0.694	A373T	358	-3.278
ENSMUST00000102517	Dil4 (BL)	0.833	6	0.694	L419Q	463	-3.243
ENSMUST00000057150	Fancb (BL)	0.833	5	0.717	E435M	122	-3.235
ENSMUST00000109851	Inpp4b (BL)	0.833	6	0.694	P433H	554	-3.225
ENSMUST00000076661	Etaa1 (BL)	0.833	6	0.694	D692G	170	-3.207
ENSMUST00000038539	1700123O20Rik (BL)	0.833	6	0.694	H46Y	177	-3.192
ENSMUST00000159839	Gli2 (BL)	0.833	6	0.694	Q44H	238	-3.181
ENSMUST00000161056	Gli2 (BL)	0.833	6	0.694	Q44H	238	-3.181
ENSMUST00000162552	Gli2 (BL)	0.833	6	0.694	Q44H	238	-3.181
ENSMUST00000053760	Utp14b (BL)	0.833	6	0.694	Q209R	302	-3.080
ENSMUST00000151622	Utp14b (BL)	0.833	6	0.694	Q209R	302	-3.080
ENSMUST00000088621	Srrm2 (BL)	0.833	6	0.694	P871L	346	-3.034
ENSMUST00000060989	Sorl1 (BL)	0.833	6	0.694	R1425H	332	-3.025
ENSMUST00000067784	Cdh24 (BL)	0.833	6	0.694	D300N	1530	-3.022
ENSMUST00000005953	Sqor (BL)	0.833	6	0.694	D184G	330	-2.992
ENSMUST00000110506	Sqor (BL)	0.833	6	0.694	D184G	330	-2.992
ENSMUST00000060225	Gpr4 (BL)	0.833	6	0.694	R51H	375	-2.969
ENSMUST00000098816	Slc7a2 (BL)	0.833	6	0.694	G335S	783	-2.955
ENSMUST00000117077	Slc7a2 (BL)	0.833	6	0.694	G335S	783	-2.955
ENSMUST00000144530	Zmynd8 (BL)	0.833	6	0.694	K21R	1336	-2.908
ENSMUST00000193439	Nphp3 (BL)	0.833	6	0.694	A399T	351	-2.908
ENSMUST00000073388	Afmid (BL)	0.833	6	0.694	R33H	191	-2.906
ENSMUST00000055503	Xkr5 (BL)	0.833	6	0.694	K253R	105	-2.900
ENSMUST00000057784	Slc7a2 (BL)	0.833	6	0.694	A342S	791	-2.879
ENSMUST00000095438	Xkr5 (BL)	0.833	6	0.694	K419R	108	-2.875
ENSMUST00000177353	Tdg (BL)	0.833	6	0.694	A190V	486	-2.797
ENSMUST00000074477	Ear6 (BL)	0.833	6	0.694	G80S	184	-2.789
ENSMUST00000169070	Ear6 (BL)	0.833	6	0.694	G80S	184	-2.789
ENSMUST00000018050	Zmynd8 (BL)	0.833	6	0.694	K21R	1568	-2.781
ENSMUST00000088113	Zmynd8 (BL)	0.833	6	0.694	K41R	1607	-2.781
ENSMUST00000099084	Zmynd8 (BL)	0.833	6	0.694	K21R	1562	-2.781
ENSMUST00000109266	Zmynd8 (BL)	0.833	6	0.694	K41R	1597	-2.781
ENSMUST00000109269	Zmynd8 (BL)	0.833	6	0.694	K25R	1553	-2.781
ENSMUST00000170272	Zmynd8 (BL)	0.833	6	0.694	K21R	1578	-2.781
ENSMUST00000177633	Zmynd8 (BL)	0.833	6	0.694	K41R	1578	-2.781
ENSMUST00000166080	Gm28041 (BL)	0.833	6	0.694	E17D	110	-2.780
ENSMUST00000172266	Zfp456 (BL)	0.833	6	0.694	E17D	110	-2.780
ENSMUST00000136842	Zmynd8 (BL)	0.833	6	0.694	K52R	1466	-2.770
ENSMUST00000097911	Kdm4a (BL)	0.833	6	0.694	T339M	600	-2.760
ENSMUST00000106403	Kdm4a (BL)	0.833	6	0.694	T339M	600	-2.760
ENSMUST00000106406	Kdm4a (BL)	0.833	6	0.694	T339M	600	-2.760
ENSMUST00000109262	Zmynd8 (BL)	0.833	6	0.694	K21R	1523	-2.732
ENSMUST00000050288	Kdm4a (BL)	0.833	6	0.694	T339M	614	-2.686
ENSMUST00000119096	Klra4 (BL)	0.833	6	0.694	Q79K	211	-2.643
ENSMUST00000033975	Ddhd2 (BL)	0.833	6	0.694	N637S	388	-2.585
ENSMUST00000038439	Dnajc17 (BL)	0.833	6	0.694	Y273F	330	-2.553
ENSMUST00000076505	Pyroxd2 (BL)	0.806	7	0.649	W234R	359	-13.048
ENSMUST00000032306	Klra2 (BL)	0.806	7	0.649	W166L	205	-11.503
ENSMUST00000048635	Shf (BL)	0.806	7	0.649	K88del	609	-8.909
ENSMUST00000110530	Shf (BL)	0.806	7	0.649	K82del	609	-8.909
ENSMUST00000110531	Shf (BL)	0.806	7	0.649	K88del	609	-8.909
ENSMUST00000168779	2210408I21Rik (BL)	0.806	7	0.649	P499L	337	-8.755
ENSMUST00000121237	Shf (BL)	0.806	7	0.649	K82del	463	-8.740
ENSMUST00000026194	Hps1 (BL)	0.806	7	0.649	C89Y	399	-8.570
ENSMUST00000162004	Hps1 (BL)	0.806	7	0.649	C89Y	399	-8.570
ENSMUST00000138725	Zfp729b (BL)	0.806	7	0.649	P169L	135	-7.699
ENSMUST00000057405	BC027072 (BL)	0.806	7	0.649	P990L	107	-7.449

Transcript	Gene	A = Consensus score (=strains/36)	B = BL/6J-like strains	Total score = A x (1-B/36)	AA Mutation	Supporting Sequences	PROVEAN Score
ENSMUST00000216949	Olf739 (BL)	0.806	7	0.649	W74C	1064	-7.203
ENSMUST00000047903	Colgalt1 (BL)	0.806	7	0.649	P250T	540	-6.975
ENSMUST00000025322	H2-M10.1 (BL)	0.806	7	0.649	R205C	13785	-6.739
ENSMUST00000027881	Sec16b (BL)	0.806	7	0.649	P32L	201	-6.576
ENSMUST00000086130	Sec16b (BL)	0.806	7	0.649	P32L	201	-6.576
ENSMUST00000111700	Sec16b (BL)	0.806	7	0.649	P32L	201	-6.576
ENSMUST00000121226	Abca17 (BL)	0.806	7	0.649	F785V	205	-5.910
ENSMUST00000027368	Slc11a1 (BL)	0.806	7	0.649	G169D	890	-5.903
ENSMUST00000029836	Dnase2b (BL)	0.806	7	0.649	P322L	312	-5.868
ENSMUST00000200633	Dnase2b (BL)	0.806	7	0.649	P322L	312	-5.868
ENSMUST00000008957	Tppp2 (BL)	0.806	7	0.649	G22S	607	-5.736
ENSMUST00000177625	Tppp2 (BL)	0.806	7	0.649	G22S	607	-5.736
ENSMUST00000187516	Slc11a1 (BL)	0.806	7	0.649	G128D	898	-5.728
ENSMUST00000135798	Zfp933 (BL)	0.806	7	0.649	D17A	90	-5.526
ENSMUST00000034521	Jhy (BL)	0.806	7	0.649	P438S	186	-5.474
ENSMUST00000059121	Ubqln1 (BL)	0.806	7	0.649	P445S	112	-5.432
ENSMUST00000028652	Slc28a2 (BL)	0.806	7	0.649	G18C	448	-5.383
ENSMUST00000110524	Slc28a2 (BL)	0.806	7	0.649	G18C	448	-5.383
ENSMUST00000110525	Slc28a2 (BL)	0.806	7	0.649	G18C	448	-5.383
ENSMUST00000105718	Zfp933 (BL)	0.806	7	0.649	D49A	138	-5.290
ENSMUST00000047611	Nthl1 (BL)	0.806	7	0.649	P112S	319	-5.177
ENSMUST00000034189	Ces1c (BL)	0.806	7	0.649	S461F	514	-5.090
ENSMUST00000024849	Emilin2 (BL)	0.806	7	0.649	P136S	221	-4.528
ENSMUST00000180384	Crtam (BL)	0.806	7	0.649	H165N	144	-4.453
ENSMUST00000050471	Pbp2 (BL)	0.806	7	0.649	P60T	303	-4.420
ENSMUST00000003906	Farsa (BL)	0.806	7	0.649	D291G	254	-4.339
ENSMUST00000109754	Farsa (BL)	0.806	7	0.649	D291G	254	-4.339
ENSMUST00000051754	Pcdhb3 (BL)	0.806	7	0.649	P582T	1091	-4.324
ENSMUST00000151524	Slf1 (BL)	0.806	7	0.649	H530N	342	-4.323
ENSMUST00000030886	Miip (BL)	0.806	7	0.649	G93V	219	-4.296
ENSMUST00000119975	Miip (BL)	0.806	7	0.649	G93V	219	-4.296
ENSMUST00000172710	Miip (BL)	0.806	7	0.649	G93V	219	-4.296
ENSMUST00000064190	Rai1 (BL)	0.806	7	0.649	D818N	196	-4.236
ENSMUST00000090806	Rai1 (BL)	0.806	7	0.649	D818N	196	-4.236
ENSMUST00000102688	Rai1 (BL)	0.806	7	0.649	D818N	196	-4.236
ENSMUST00000171108	Rai1 (BL)	0.806	7	0.649	D818N	196	-4.236
ENSMUST00000098825	AI429214 (BL)	0.806	7	0.649	Q279L	98	-4.169
ENSMUST00000220794	E2f6 (BL)	0.806	7	0.649	L10Q	101	-4.160
ENSMUST00000221541	E2f6 (BL)	0.806	7	0.649	L10Q	101	-4.160
ENSMUST00000221934	E2f6 (BL)	0.806	7	0.649	L10Q	101	-4.160
ENSMUST00000051025	Tmem102 (BL)	0.806	7	0.649	G45R	480	-3.840
ENSMUST00000063654	Btla (BL)	0.806	7	0.649	K47T	116	-3.762
ENSMUST00000102802	Btla (BL)	0.806	7	0.649	K47T	116	-3.762
ENSMUST00000194543	Mia3 (BL)	0.806	7	0.649	N217S	154	-3.719
ENSMUST00000207854	Ttc34 (BL)	0.806	7	0.649	R876C	190	-3.510
ENSMUST00000050220	Ttc34 (BL)	0.806	7	0.649	R367C	150	-3.490
ENSMUST00000127134	Rufy4 (BL)	0.806	7	0.649	D34E	116	-3.476
ENSMUST00000144183	Zfp85 (BL)	0.806	7	0.649	L124F	185	-3.434
ENSMUST00000213685	Olf728 (BL)	0.806	7	0.649	T224S	1995	-3.321
ENSMUST00000176940	Aste1 (BL)	0.806	7	0.649	D202N	228	-3.315
ENSMUST00000005952	Slc30a4 (BL)	0.806	7	0.649	Q426H	373	-3.248
ENSMUST00000099457	Slc30a4 (BL)	0.806	7	0.649	Q377H	326	-3.173
ENSMUST00000086617	Myo18b (BL)	0.806	7	0.649	Q1342K	178	-3.131
ENSMUST00000110686	Tmem62 (BL)	0.806	7	0.649	M449I	365	-3.030
ENSMUST00000001583	Ell2 (BL)	0.806	7	0.649	H350Y	265	-3.004
ENSMUST00000008024	Arid1a (BL)	0.806	7	0.649	S1375Y	484	-2.845
ENSMUST00000067582	Tmem62 (BL)	0.806	7	0.649	M579I	364	-2.841
ENSMUST00000102944	Creb3 (BL)	0.806	6	0.672	A72V	154	-2.834
ENSMUST00000035181	Aste1 (BL)	0.806	7	0.649	D202N	248	-2.749
ENSMUST00000040789	Qpct (BL)	0.806	7	0.649	Q195R	341	-2.730

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ENSMUST00000071935	Myo9b (BL)	0.806	7	0.649	L770F	582	-2.638
ENSMUST00000168839	Myo9b (BL)	0.806	7	0.649	L770F	582	-2.638
ENSMUST00000212935	Myo9b (BL)	0.806	7	0.649	L771F	582	-2.638
ENSMUST00000059226	Ifi205 (BL)	0.806	7	0.649	K64R	139	-2.506
ENSMUST00000180041	Stard9 (BL)	0.778	8	0.605	A941_V945del	210	-22.055
ENSMUST00000140843	Stard9 (BL)	0.778	8	0.605	A523_V527del	209	-21.855
ENSMUST00000029915	Tstd3 (BL)	0.778	8	0.605	W65L	128	-12.237
ENSMUST00000036972	3632451O06Rik (BL)	0.778	8	0.605	W522G	148	-9.306
ENSMUST00000118129	3632451O06Rik (BL)	0.778	8	0.605	W522G	148	-9.306
ENSMUST00000145860	Mtus1 (BL)	0.778	8	0.605	C169Y	210	-8.773
ENSMUST00000207976	Olf1314 (BL)	0.778	8	0.605	P58L	1391	-8.770
ENSMUST00000030643	Extl1 (BL)	0.778	8	0.605	P450L	549	-8.748
ENSMUST00000084035	Adam9 (BL)	0.778	8	0.605	R296W	325	-7.031
ENSMUST00000068994	Rtkn2 (BL)	0.778	8	0.605	G449R	358	-6.901
ENSMUST00000118160	Rtkn2 (BL)	0.778	8	0.605	G449R	358	-6.901
ENSMUST00000205518	Olf741 (BL)	0.778	8	0.605	P137S	1060	-6.843
ENSMUST00000213903	Olf741 (BL)	0.778	8	0.605	P137S	1060	-6.843
ENSMUST00000121391	Crybg2 (BL)	0.778	8	0.605	P343L	150	-6.791
ENSMUST00000059115	Mtus1 (BL)	0.778	8	0.605	C169Y	377	-6.401
ENSMUST00000118835	Mtus1 (BL)	0.778	8	0.605	C169Y	377	-6.401
ENSMUST00000066652	Kidins220 (BL)	0.778	8	0.605	E987G	843	-6.395
ENSMUST00000222941	Kidins220 (BL)	0.778	8	0.605	E987G	845	-6.318
ENSMUST00000033957	Adam18 (BL)	0.778	8	0.605	H276R	140	-6.249
ENSMUST00000220459	Kidins220 (BL)	0.778	8	0.605	E945G	846	-6.240
ENSMUST00000126816	Avil (BL)	0.778	8	0.605	G15R	175	-6.225
ENSMUST00000142698	Avil (BL)	0.778	8	0.605	G15R	175	-6.225
ENSMUST00000173833	Adam18 (BL)	0.778	8	0.605	H276R	142	-6.116
ENSMUST00000138208	Dusp14 (BL)	0.778	8	0.605	R45W	357	-6.107
ENSMUST00000018792	Dusp14 (BL)	0.778	8	0.605	R45W	382	-6.066
ENSMUST00000100705	Dusp14 (BL)	0.778	8	0.605	R45W	382	-6.066
ENSMUST00000108101	Dusp14 (BL)	0.778	8	0.605	R45W	382	-6.066
ENSMUST00000164891	Dusp14 (BL)	0.778	8	0.605	R45W	382	-6.066
ENSMUST00000026500	Avil (BL)	0.778	8	0.605	G15R	609	-5.660
ENSMUST00000129173	Avil (BL)	0.778	8	0.605	G15R	609	-5.660
ENSMUST00000068853	Fat2 (BL)	0.778	8	0.605	N816K	242	-5.571
ENSMUST00000108864	Fat2 (BL)	0.778	8	0.605	N816K	242	-5.571
ENSMUST00000027830	Slamf9 (BL)	0.778	8	0.605	P224L	114	-5.341
ENSMUST00000093393	Tbc1d9 (BL)	0.778	8	0.605	D544G	728	-4.864
ENSMUST00000034145	Tbc1d9 (BL)	0.778	8	0.605	D311G	741	-4.743
ENSMUST00000044833	Oas3 (BL)	0.778	8	0.605	Q897H	153	-4.653
ENSMUST00000024930	1600002H07Rik (BL)	0.778	8	0.605	T199A	184	-4.613
ENSMUST00000043296	Dlgap5 (BL)	0.778	8	0.605	L433Q	189	-4.584
ENSMUST00000060574	A2ml1 (BL)	0.778	8	0.605	D1440G	319	-4.496
ENSMUST00000091466	Ttc37 (BL)	0.778	8	0.605	T1164M	326	-4.449
ENSMUST00000024987	Telo2 (BL)	0.778	8	0.605	G205D	279	-4.416
ENSMUST00000115181	Telo2 (BL)	0.778	8	0.605	G205D	279	-4.416
ENSMUST00000052702	BC049715 (BL)	0.778	8	0.605	S239F	89	-4.327
ENSMUST00000112621	Ccdc93 (BL)	0.778	8	0.605	L192P	437	-4.327
ENSMUST00000203499	BC049715 (BL)	0.778	8	0.605	S239F	89	-4.327
ENSMUST00000103231	Nppb (BL)	0.778	8	0.605	H27Y	113	-4.318
ENSMUST00000109745	Gcdh (BL)	0.778	8	0.605	R167G	694	-4.287
ENSMUST00000003907	Gcdh (BL)	0.778	8	0.605	R176G	693	-4.286
ENSMUST00000124677	Speer3 (BL)	0.778	8	0.605	E82G	240	-4.278
ENSMUST00000043550	Traf3ip3 (BL)	0.778	8	0.605	N185K	267	-4.187
ENSMUST00000192020	Traf3ip3 (BL)	0.778	8	0.605	N185K	267	-4.187
ENSMUST00000194786	Fcrl1 (BL)	0.778	8	0.605	S271P	198	-4.124
ENSMUST00000072480	Fcrl1 (BL)	0.778	8	0.605	S271P	201	-4.074
ENSMUST00000163661	Fcrl1 (BL)	0.778	8	0.605	S291P	201	-4.074
ENSMUST00000111603	Rpgrip1 (BL)	0.778	8	0.605	F50L	147	-3.938
ENSMUST00000167200	Fcrl1 (BL)	0.778	8	0.605	S228P	202	-3.905

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ENSMUST00000015499	Cd48 (BL)	0.778	8	0.605	R4I	123	-3.818
ENSMUST00000051995	Jak3 (BL)	0.778	8	0.605	R1032S	501	-3.803
ENSMUST00000110013	Jak3 (BL)	0.778	8	0.605	R1032S	501	-3.803
ENSMUST00000084301	Macf1 (BL)	0.778	8	0.605	A3789V	688	-3.796
ENSMUST00000097897	Macf1 (BL)	0.778	8	0.605	A3793V	686	-3.796
ENSMUST00000106224	Macf1 (BL)	0.778	8	0.605	A3793V	684	-3.796
ENSMUST00000036025	Ccdc93 (BL)	0.778	8	0.605	L192P	438	-3.794
ENSMUST00000024854	Clip4 (BL)	0.778	8	0.605	V381F	395	-3.775
ENSMUST00000019060	Csf2 (BL)	0.778	8	0.605	V139G	131	-3.759
ENSMUST00000030336	Tnfrsf1b (BL)	0.778	8	0.605	S360F	156	-3.731
ENSMUST00000073337	Cramp1l (BL)	0.778	8	0.605	T1174A	403	-3.652
ENSMUST00000165460	Whamm (BL)	0.778	8	0.605	P640L	205	-3.625
ENSMUST00000183178	Ccdc154 (BL)	0.778	8	0.605	P59S	106	-3.624
ENSMUST00000164252	Mettl17 (BL)	0.778	8	0.605	S206R	192	-3.614
ENSMUST00000165100	Mettl17 (BL)	0.778	8	0.605	S206R	192	-3.614
ENSMUST00000039476	Arhgef11 (BL)	0.778	8	0.605	H933Y	624	-3.551
ENSMUST00000048400	Tnks1bp1 (BL)	0.778	8	0.605	D279N	146	-3.549
ENSMUST00000106213	Macf1 (BL)	0.778	8	0.605	A2228V	908	-3.498
ENSMUST00000082108	Macf1 (BL)	0.778	8	0.605	A1766V	895	-3.493
ENSMUST00000030313	Caap1 (BL)	0.778	8	0.605	G221V	309	-3.324
ENSMUST00000047899	Mettl17 (BL)	0.778	8	0.605	S206R	204	-3.311
ENSMUST00000068584	Cd48 (BL)	0.778	8	0.605	R4I	117	-3.307
ENSMUST00000054324	Nod2 (BL)	0.778	8	0.605	A227T	334	-3.237
ENSMUST00000109634	Nod2 (BL)	0.778	8	0.605	A212T	335	-3.232
ENSMUST00000118370	Nod2 (BL)	0.778	8	0.605	A205T	335	-3.232
ENSMUST00000167441	Slc7a10 (BL)	0.778	8	0.605	R17H	126	-3.180
ENSMUST00000002327	Def6 (BL)	0.778	8	0.605	E161K	362	-3.172
ENSMUST00000003550	Ncstn (BL)	0.778	8	0.605	I678T	330	-3.166
ENSMUST00000002412	Ncan (BL)	0.778	8	0.605	E947K	132	-3.164
ENSMUST00000042318	Fsd2 (BL)	0.778	8	0.605	Q86P	276	-3.160
ENSMUST00000173287	Adamtsl3 (BL)	0.778	8	0.605	T485A	365	-3.129
ENSMUST00000212549	D130040H23Rik (BL)	0.778	7	0.627	S298C	106	-3.032
ENSMUST00000111735	Tmem260 (BL)	0.778	8	0.605	L259F	368	-3.031
ENSMUST000000027425	Itm2c (BL)	0.778	8	0.605	A246G	608	-2.993
ENSMUST00000034121	Man2b1 (BL)	0.778	8	0.605	A344V	217	-2.973
ENSMUST00000037649	Rab3gap1 (BL)	0.778	8	0.605	G88R	442	-2.963
ENSMUST00000124720	Tmem260 (BL)	0.778	8	0.605	L107F	379	-2.954
ENSMUST00000076470	Nlrp4e (BL)	0.778	8	0.605	A740V	112	-2.925
ENSMUST00000085856	Zfp157 (BL)	0.778	8	0.605	T176A	135	-2.906
ENSMUST00000185569	Itm2c (BL)	0.778	8	0.605	A209G	615	-2.876
ENSMUST00000044492	Akap9 (BL)	0.778	8	0.605	E2429K	401	-2.749
ENSMUST00000140761	Ppm1m (BL)	0.778	8	0.605	D106H	730	-2.740
ENSMUST00000035565	Pkd1 (BL)	0.778	8	0.605	P3L	319	-2.731
ENSMUST00000035077	Ltf (BL)	0.778	8	0.605	R25Q	327	-2.691
ENSMUST00000184067	Col27a1 (BL)	0.778	8	0.605	E701D	329	-2.684
ENSMUST00000147525	6430573F11Rik (BL)	0.778	8	0.605	G274A	389	-2.678
ENSMUST00000171777	6430573F11Rik (BL)	0.778	8	0.605	G274A	389	-2.678
ENSMUST00000183913	Col27a1 (BL)	0.778	8	0.605	E380D	347	-2.646
ENSMUST00000110741	Fam90a1a (BL)	0.778	8	0.605	S346F	111	-2.621
ENSMUST00000114562	Tmprss7 (BL)	0.778	8	0.605	T327I	378	-2.596
ENSMUST00000046303	Crebl2 (BL)	0.778	8	0.605	N116D	336	-2.579
ENSMUST00000057288	Pdia6 (BL)	0.778	8	0.605	V229M	424	-2.577
ENSMUST00000053909	Oas2 (BL)	0.778	8	0.605	R232Q	187	-2.534
ENSMUST00000104881	Olf585 (BL)	0.750	9	0.562	Y189del	999	-11.230
ENSMUST00000119336	Ankrd24 (BL)	0.750	9	0.562	A786_E789del	221	-9.615
ENSMUST00000055077	Palm3 (BL)	0.750	9	0.562	P671L	108	-8.432
ENSMUST00000077719	Mup21 (BL)	0.750	9	0.562	D144Y	192	-8.031
ENSMUST00000024880	Vit (BL)	0.750	9	0.562	K409I	375	-7.287
ENSMUST00000052535	Olf694 (BL)	0.750	9	0.562	P58T	1048	-7.219
ENSMUST00000216118	Olf694 (BL)	0.750	9	0.562	P58T	1048	-7.219

Transcript	Gene	A = Consensus score (=strains/36)	B = BL/6J-like strains	Total score = A x (1-B/36)	AA Mutation	Supporting Sequences	PROVEAN Score
ENSMUST00000216895	Olfr694 (BL)	0.750	9	0.562	P58T	1048	-7.219
ENSMUST00000164044	Fcgr3 (BL)	0.750	9	0.562	G79W	168	-7.016
ENSMUST00000169017	Fcgr3 (BL)	0.750	9	0.562	G78W	191	-7.005
ENSMUST00000022124	Cd180 (BL)	0.750	9	0.562	P216L	213	-6.846
ENSMUST00000110492	Prag1 (BL)	0.750	9	0.562	E862G	224	-6.117
ENSMUST00000172582	Olfr122 (BL)	0.750	9	0.562	T246I	988	-5.748
ENSMUST00000217119	Olfr122 (BL)	0.750	9	0.562	T246I	988	-5.748
ENSMUST00000067689	Tnrc6b (BL)	0.750	9	0.562	P1576T	1173	-5.668
ENSMUST00000156426	Parp3 (BL)	0.750	9	0.562	D171Y	240	-5.658
ENSMUST00000042842	Cdon (BL)	0.750	9	0.562	G368R	302	-5.622
ENSMUST00000119129	Cdon (BL)	0.750	9	0.562	G368R	302	-5.622
ENSMUST00000155316	Tnip1 (BL)	0.750	9	0.562	R8G	502	-5.554
ENSMUST00000188399	Olfr1215 (BL)	0.750	9	0.562	K79T	751	-5.513
ENSMUST00000216271	Olfr1215 (BL)	0.750	9	0.562	K79T	751	-5.513
ENSMUST00000072018	Alms1 (BL)	0.750	9	0.562	R3229W	166	-5.461
ENSMUST00000018482	Tnip1 (BL)	0.750	9	0.562	R8G	569	-5.179
ENSMUST00000102730	Tnip1 (BL)	0.750	9	0.562	R8G	569	-5.179
ENSMUST00000102731	Tnip1 (BL)	0.750	9	0.562	R8G	569	-5.179
ENSMUST00000108889	Tnip1 (BL)	0.750	9	0.562	R8G	569	-5.179
ENSMUST00000049184	Ushbp1 (BL)	0.750	9	0.562	R640L	150	-4.988
ENSMUST00000135808	Sfxn4 (BL)	0.750	9	0.562	L167P	129	-4.796
ENSMUST00000047783	Rpgrip1l (BL)	0.750	9	0.562	M268T	342	-4.704
ENSMUST00000069293	Dnah7b (BL)	0.750	9	0.562	D1543N	335	-4.466
ENSMUST00000124599	Zfp64 (BL)	0.750	9	0.562	G33R	114	-4.330
ENSMUST00000034902	Gsta2 (BL)	0.750	9	0.562	Q199H	871	-4.293
ENSMUST00000040783	Usp40 (BL)	0.750	9	0.562	A201E	412	-4.176
ENSMUST00000187758	Usp40 (BL)	0.750	9	0.562	A201E	415	-4.152
ENSMUST00000161389	Skint1 (BL)	0.750	9	0.562	Q27P	126	-4.012
ENSMUST00000162158	Skint1 (BL)	0.750	9	0.562	Q27P	124	-3.989
ENSMUST00000049972	Scg2 (BL)	0.750	9	0.562	Q553P	249	-3.950
ENSMUST00000117379	Skint1 (BL)	0.750	9	0.562	Q27P	126	-3.940
ENSMUST00000061552	Peak1 (BL)	0.750	9	0.562	S1085L	286	-3.932
ENSMUST00000105780	Fhad1 (BL)	0.750	9	0.562	P944S	240	-3.922
ENSMUST00000067060	Klfl1 (BL)	0.750	9	0.562	L69H	231	-3.916
ENSMUST00000143427	Trmt1 (BL)	0.750	9	0.562	C39W	263	-3.907
ENSMUST00000162885	Skint1 (BL)	0.750	9	0.562	Q27P	122	-3.890
ENSMUST00000177084	Trmt1 (BL)	0.750	9	0.562	C21W	249	-3.883
ENSMUST00000131700	Trmt1 (BL)	0.750	9	0.562	C46W	261	-3.870
ENSMUST00000073772	Ugt1a9 (BL)	0.750	9	0.562	S139F	698	-3.847
ENSMUST00000153985	Zfp943 (BL)	0.750	9	0.562	E28K	97	-3.832
ENSMUST00000174015	Zfp943 (BL)	0.750	9	0.562	E28K	72	-3.832
ENSMUST00000185234	Scg2 (BL)	0.750	9	0.562	Q513P	262	-3.825
ENSMUST00000152301	Trmt1 (BL)	0.750	9	0.562	C46W	251	-3.815
ENSMUST00000175784	Trmt1 (BL)	0.750	9	0.562	C46W	251	-3.815
ENSMUST00000177531	Trmt1 (BL)	0.750	9	0.562	C46W	251	-3.815
ENSMUST00000216181	Olfr113 (BL)	0.750	9	0.562	L187F	350	-3.792
ENSMUST00000104936	Mageb3 (BL)	0.750	9	0.562	E280K	165	-3.690
ENSMUST00000026546	Adam8 (BL)	0.750	9	0.562	G813E	183	-3.670
ENSMUST00000106069	Adam8 (BL)	0.750	9	0.562	G814E	183	-3.670
ENSMUST00000125370	Trmt1 (BL)	0.750	9	0.562	C46W	283	-3.646
ENSMUST00000039516	Egln3 (BL)	0.750	9	0.562	R65C	393	-3.549
ENSMUST00000164202	Rbm20 (BL)	0.750	9	0.562	P926T	327	-3.547
ENSMUST00000188142	Peak1 (BL)	0.750	9	0.562	S55L	269	-3.538
ENSMUST00000109768	Trmt1 (BL)	0.750	9	0.562	C39W	283	-3.488
ENSMUST00000055349	Zfp943 (BL)	0.750	9	0.562	E28K	129	-3.431
ENSMUST00000036732	BC016579 (BL)	0.750	9	0.562	M113T	115	-3.364
ENSMUST00000001974	Trmt1 (BL)	0.750	9	0.562	C46W	283	-3.334
ENSMUST00000109767	Trmt1 (BL)	0.750	9	0.562	C46W	283	-3.334
ENSMUST00000100627	Trim25 (BL)	0.750	9	0.562	F165L	129	-3.330
ENSMUST00000000284	Trim25 (BL)	0.750	9	0.562	F165L	130	-3.312

Transcript	Gene	A = Consensus score (=strains/36)	B = BL/6J-like strains	Total score = A x (1-B/36)	AA Mutation	Supporting Sequences	PROVEAN Score
ENSMUST00000081503	Pbx4 (BL)	0.750	9	0.562	S373W	1299	-3.280
ENSMUST00000114013	Map2 (BL)	0.750	9	0.562	G947R	913	-3.277
ENSMUST00000072097	Hsh2d (BL)	0.750	9	0.562	S161del	133	-3.216
ENSMUST00000165324	Hsh2d (BL)	0.750	9	0.562	S161del	133	-3.216
ENSMUST00000075030	Olf724 (BL)	0.750	9	0.562	F107L	1433	-3.172
ENSMUST00000213390	Olf724 (BL)	0.750	9	0.562	F107L	1433	-3.172
ENSMUST00000178614	Gm1045 (BL)	0.750	9	0.562	F109I	94	-3.159
ENSMUST00000107896	Trim25 (BL)	0.750	9	0.562	F165L	130	-3.045
ENSMUST00000030897	Megf6 (BL)	0.750	9	0.562	A1110T	241	-3.040
ENSMUST00000069620	Per2 (BL)	0.750	9	0.562	T172S	284	-2.959
ENSMUST00000117396	Ncapg (BL)	0.750	9	0.562	A784V	323	-2.936
ENSMUST00000036759	Washc2 (BL)	0.750	9	0.562	S385L	316	-2.886
ENSMUST00000032825	Mfge8 (BL)	0.750	9	0.562	R284K	339	-2.843
ENSMUST00000107409	Mfge8 (BL)	0.750	9	0.562	R247K	266	-2.843
ENSMUST00000037473	Ap5m1 (BL)	0.750	9	0.562	D289E	353	-2.755
ENSMUST00000182621	Ccdc154 (BL)	0.750	9	0.562	V631F	133	-2.748
ENSMUST00000170242	Myo9b (BL)	0.750	9	0.562	P2097A	599	-2.681
ENSMUST00000128115	Trmt2b (BL)	0.750	9	0.562	L351V	270	-2.657
ENSMUST00000097785	Dst (BL)	0.750	9	0.562	M1156L	778	-2.641
ENSMUST00000115104	Dst (BL)	0.750	9	0.562	M1156L	778	-2.641
ENSMUST00000185269	Dst (BL)	0.750	9	0.562	M830L	965	-2.641
ENSMUST00000183302	Dst (BL)	0.750	9	0.562	M830L	714	-2.565
ENSMUST00000085592	4931406P16Rik (BL)	0.750	9	0.562	M1001V	299	-2.561
ENSMUST00000108074	4931406P16Rik (BL)	0.750	9	0.562	M1001V	299	-2.561
ENSMUST00000050255	Olf125 (BL)	0.750	9	0.562	A25S	411	-2.559
ENSMUST00000213857	Olf125 (BL)	0.750	9	0.562	A25S	411	-2.559
ENSMUST00000110191	Gcnt2 (BL)	0.750	9	0.562	A137E	433	-2.550
ENSMUST00000097786	Dst (BL)	0.750	9	0.562	M1156L	983	-2.540
ENSMUST00000206399	4931406P16Rik (BL)	0.750	9	0.562	M789V	299	-2.527
ENSMUST00000028630	Slc12a1 (BL)	0.722	10	0.521	T96_N100del	884	-33.041
ENSMUST00000110494	Slc12a1 (BL)	0.722	10	0.521	T96_N100del	884	-33.041
ENSMUST00000110495	Slc12a1 (BL)	0.722	10	0.521	T96_N100del	874	-32.403
ENSMUST00000058987	Krtap4-2 (BL)	0.722	10	0.521	C6del	601	-16.385
ENSMUST00000118856	4930432K21Rik (BL)	0.722	10	0.521	G459_P463del	154	-16.351
ENSMUST00000093375	4930432K21Rik (BL)	0.722	10	0.521	G424_P428del	141	-16.014
ENSMUST00000074693	Serpina11 (BL)	0.722	10	0.521	W222C	387	-12.801
ENSMUST00000120251	Serpina11 (BL)	0.722	10	0.521	W220C	387	-12.801
ENSMUST00000151709	Serpina11 (BL)	0.722	10	0.521	W227C	451	-12.795
ENSMUST00000176246	Serpina11 (BL)	0.722	10	0.521	W220C	496	-12.600
ENSMUST00000113142	Ugt1a10 (BL)	0.722	10	0.521	C124S	697	-9.038
ENSMUST00000076086	Vmn1r53 (BL)	0.722	10	0.521	C120Y	171	-8.400
ENSMUST00000125647	Echdc2 (BL)	0.722	10	0.521	P14S	134	-7.562
ENSMUST00000078271	Pcdhb5 (BL)	0.722	10	0.521	P495Q	1070	-6.480
ENSMUST00000163601	Ctbp2 (BL)	0.722	10	0.521	R68P	144	-6.395
ENSMUST00000087122	Speg (BL)	0.722	10	0.521	G1982E	344	-6.323
ENSMUST00000165457	Ctbp2 (BL)	0.722	10	0.521	R158P	232	-6.260
ENSMUST00000172732	Rfc1 (BL)	0.722	10	0.521	Y66N	421	-6.258
ENSMUST00000203471	Rfc1 (BL)	0.722	10	0.521	Y66N	421	-6.258
ENSMUST00000204965	Rfc1 (BL)	0.722	10	0.521	Y66N	421	-6.258
ENSMUST00000047036	Cd3eap (BL)	0.722	10	0.521	G90R	128	-6.168
ENSMUST00000043813	Nudt15 (BL)	0.722	10	0.521	R75C	210	-5.853
ENSMUST00000070617	Scn11a (BL)	0.722	10	0.521	V1113G	242	-5.720
ENSMUST00000215718	Scn11a (BL)	0.722	10	0.521	V1113G	242	-5.720
ENSMUST00000075301	Neb (BL)	0.722	10	0.521	K1788T	722	-5.698
ENSMUST00000168838	Cyp2c69 (BL)	0.722	10	0.521	G135A	569	-5.692
ENSMUST00000036934	Neb (BL)	0.722	10	0.521	K1788T	693	-5.688
ENSMUST00000043915	Serpina12 (BL)	0.722	10	0.521	R110W	118	-5.669
ENSMUST00000037678	Tkfc (BL)	0.722	10	0.521	S252F	254	-5.469
ENSMUST00000050325	H2-Eb2 (BL)	0.722	10	0.521	G179R	3599	-5.347
ENSMUST00000132125	Mdf1 (BL)	0.722	10	0.521	G67R	158	-5.302

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ENSMUST00000213302	Olfr1131 (BL)	0.722	10	0.521	S189L	710	-5.301
ENSMUST00000216756	Olfr1131 (BL)	0.722	10	0.521	S73L	669	-5.272
ENSMUST00000077340	Rnpep (BL)	0.722	10	0.521	P127R	292	-5.241
ENSMUST00000099113	Sirpa (BL)	0.722	10	0.521	F87V	264	-5.043
ENSMUST00000074357	Rnpep (BL)	0.722	10	0.521	P127R	284	-5.032
ENSMUST00000061260	Fat4 (BL)	0.722	10	0.521	T3249M	334	-4.975
ENSMUST00000071642	Mdn1 (BL)	0.722	10	0.521	D1572G	270	-4.889
ENSMUST00000178134	Mdn1 (BL)	0.722	10	0.521	D1572G	270	-4.889
ENSMUST00000035390	Azgp1 (BL)	0.722	10	0.521	S24Y	152	-4.847
ENSMUST00000049262	Sirpa (BL)	0.722	10	0.521	F87V	340	-4.816
ENSMUST00000103202	Sirpa (BL)	0.722	10	0.521	F87V	340	-4.816
ENSMUST00000103203	Sirpa (BL)	0.722	10	0.521	F87V	340	-4.816
ENSMUST00000161620	Sirpa (BL)	0.722	10	0.521	F87V	340	-4.816
ENSMUST00000179001	Sirpa (BL)	0.722	10	0.521	F87V	340	-4.816
ENSMUST00000215298	1700017B05Rik (BL)	0.722	10	0.521	P152S	189	-4.770
ENSMUST00000021134	Tsen54 (BL)	0.722	10	0.521	P244S	256	-4.762
ENSMUST00000129360	Mdfi (BL)	0.722	10	0.521	G67R	125	-4.730
ENSMUST00000106481	Tsen54 (BL)	0.722	10	0.521	P244S	257	-4.695
ENSMUST00000152455	Mdfi (BL)	0.722	10	0.521	G67R	165	-4.640
ENSMUST00000169570	Ctbp2 (BL)	0.722	10	0.521	R158P	566	-4.597
ENSMUST00000024774	Guca1b (BL)	0.722	10	0.521	G189C	281	-4.550
ENSMUST00000102841	Rtn4 (BL)	0.722	10	0.521	S313R	301	-4.437
ENSMUST00000119823	Gm10639 (BL)	0.722	10	0.521	Q199H	941	-4.340
ENSMUST00000121273	Gm10639 (BL)	0.722	10	0.521	Q199H	941	-4.340
ENSMUST00000025314	0610009O20Rik (BL)	0.722	10	0.521	P146S	189	-4.320
ENSMUST00000035164	Topbp1 (BL)	0.722	10	0.521	P1420S	390	-4.159
ENSMUST00000045607	Melk (BL)	0.722	10	0.521	P335L	499	-4.067
ENSMUST00000030627	Rhd (BL)	0.722	10	0.521	H398R	523	-4.053
ENSMUST00000025425	Cep192 (BL)	0.722	10	0.521	R351C	240	-3.974
ENSMUST00000054683	Olfr324 (BL)	0.722	10	0.521	G187S	714	-3.917
ENSMUST00000103032	Llgl2 (BL)	0.722	10	0.521	S480I	808	-3.707
ENSMUST00000177736	Llgl2 (BL)	0.722	10	0.521	S480I	808	-3.707
ENSMUST00000173831	Psemb9 (BL)	0.722	10	0.521	R37H	447	-3.676
ENSMUST000000081747	0610040J01Rik (BL)	0.722	10	0.521	Q226L	103	-3.668
ENSMUST00000028314	Nmi (BL)	0.722	10	0.521	R243C	144	-3.604
ENSMUST00000112705	Nmi (BL)	0.722	10	0.521	R243C	144	-3.604
ENSMUST00000145481	Nmi (BL)	0.722	10	0.521	R243C	144	-3.604
ENSMUST00000164023	Serpina9 (BL)	0.722	10	0.521	P108S	514	-3.599
ENSMUST00000093853	Nxpe4 (BL)	0.722	10	0.521	S142F	355	-3.570
ENSMUST00000215780	Nxpe4 (BL)	0.722	10	0.521	S142F	355	-3.570
ENSMUST00000164148	Serpina16 (BL)	0.722	10	0.521	G14V	452	-3.548
ENSMUST00000058464	Serpina9 (BL)	0.722	10	0.521	P108S	474	-3.483
ENSMUST00000217057	Olfr914 (BL)	0.722	10	0.521	L144F	1404	-3.458
ENSMUST00000086064	Olfr876 (BL)	0.722	10	0.521	A299T	1727	-3.358
ENSMUST00000213368	Olfr876 (BL)	0.722	10	0.521	A299T	1727	-3.358
ENSMUST00000215287	Olfr876 (BL)	0.722	10	0.521	A299T	1727	-3.358
ENSMUST00000062241	Tlr9 (BL)	0.722	10	0.521	S378L	473	-3.289
ENSMUST00000113466	Fgd5 (BL)	0.722	10	0.521	R876Q	280	-3.226
ENSMUST00000086519	Rplp0 (BL)	0.722	10	0.521	A262T	576	-3.218
ENSMUST00000089334	Fgd5 (BL)	0.722	10	0.521	R1034Q	260	-3.128
ENSMUST00000126854	Rapgef3 (BL)	0.722	10	0.521	R457H	1053	-3.102
ENSMUST00000128775	Rapgef3 (BL)	0.722	10	0.521	R457H	1053	-3.102
ENSMUST00000129223	Rapgef3 (BL)	0.722	10	0.521	R457H	1053	-3.102
ENSMUST00000177352	Rapgef3 (BL)	0.722	10	0.521	R415H	1053	-3.102
ENSMUST00000153765	Tmem260 (BL)	0.722	10	0.521	A77T	245	-3.068
ENSMUST00000056907	Smcr8 (BL)	0.722	10	0.521	A360V	294	-3.019
ENSMUST00000102667	Smcr8 (BL)	0.722	10	0.521	A360V	291	-2.869
ENSMUST00000035375	Mdfi (BL)	0.722	10	0.521	G67R	253	-2.853
ENSMUST00000066368	Mdfi (BL)	0.722	10	0.521	G67R	253	-2.853
ENSMUST00000024620	Chd1 (BL)	0.722	10	0.521	D379G	296	-2.842

Transcript	Gene	A = Consensus score (=strains/36)	B = BL/6J-like strains	Total score = A x (1-B/36)	AA Mutation	Supporting Sequences	PROVEAN Score
ENSMUST00000035689	4932438H23Rik (BL)	0.722	10	0.521	P21S	211	-2.825
ENSMUST00000114076	4932438H23Rik (BL)	0.722	10	0.521	P21S	211	-2.825
ENSMUST00000146047	4932438H23Rik (BL)	0.722	10	0.521	P21S	209	-2.803
ENSMUST00000002259	Clgn (BL)	0.722	10	0.521	K291R	634	-2.791
ENSMUST00000109831	Clgn (BL)	0.722	10	0.521	K291R	634	-2.791
ENSMUST00000078869	Serpina1d (BL)	0.722	10	0.521	K292Q	234	-2.779
ENSMUST00000046514	Eprs (BL)	0.722	7	0.582	P618S	291	-2.763
ENSMUST00000064192	Zdhhc19 (BL)	0.722	10	0.521	I180F	126	-2.754
ENSMUST00000084806	Dnah11 (BL)	0.722	10	0.521	P434S	556	-2.710
ENSMUST00000020109	Actr6 (BL)	0.722	10	0.521	S263F	354	-2.687
ENSMUST00000003115	Cdkn1b (BL)	0.722	10	0.521	Q141P	211	-2.667
ENSMUST00000067327	Cdkn1b (BL)	0.722	10	0.521	Q141P	211	-2.667
ENSMUST00000204807	Cdkn1b (BL)	0.722	10	0.521	Q141P	211	-2.667
ENSMUST00000208001	Dnah14 (BL)	0.722	10	0.521	V4321M	140	-2.641
ENSMUST00000214792	Olf740 (BL)	0.722	10	0.521	S8I	1027	-2.616
ENSMUST00000022115	Xrcc4 (BL)	0.722	10	0.521	E125D	305	-2.601
ENSMUST00000048885	Adamts11 (BL)	0.722	10	0.521	T246I	464	-2.580
ENSMUST00000035163	1300017J02Rik (BL)	0.722	10	0.521	M328I	305	-2.560
ENSMUST00000093380	Podn11 (BL)	0.722	9	0.541	A535R	265	-2.554
ENSMUST00000092834	Synrg (BL)	0.694	11	0.482	P868S	1035	-7.357
ENSMUST00000012426	Wnt8a (BL)	0.694	11	0.482	G32R	597	-7.266
ENSMUST00000049714	Synrg (BL)	0.694	11	0.482	P1024S	912	-7.163
ENSMUST00000043058	Serpina3k (BL)	0.694	11	0.482	P68Q	232	-6.911
ENSMUST00000095270	Slc26a10 (BL)	0.694	11	0.482	G451R	286	-6.895
ENSMUST00000222911	Slc26a10 (BL)	0.694	11	0.482	G443R	286	-6.895
ENSMUST00000165099	Dfna5 (BL)	0.694	11	0.482	P269L	262	-6.688
ENSMUST00000101405	Dfna5 (BL)	0.694	11	0.482	P269L	262	-6.588
ENSMUST00000032216	Ptms (BL)	0.694	11	0.482	E67del	89	-6.206
ENSMUST00000170142	Dfna5 (BL)	0.694	11	0.482	P269L	259	-6.188
ENSMUST00000033211	Trim30d (BL)	0.694	11	0.482	P25S	223	-6.172
ENSMUST00000081728	Ctnnd2 (BL)	0.694	11	0.482	G99del	1317	-6.145
ENSMUST00000079625	Tor3a (BL)	0.694	11	0.482	R329C	132	-6.095
ENSMUST00000122242	Tor3a (BL)	0.694	11	0.482	R329C	132	-6.095
ENSMUST00000188964	Tor3a (BL)	0.694	11	0.482	R329C	132	-6.095
ENSMUST00000020437	Mdm1 (BL)	0.694	11	0.482	G608del	373	-5.854
ENSMUST00000164077	Mdm1 (BL)	0.694	11	0.482	G608del	373	-5.854
ENSMUST00000058905	Pars2 (BL)	0.694	11	0.482	G314S	254	-5.853
ENSMUST00000106781	Pars2 (BL)	0.694	11	0.482	G350S	254	-5.853
ENSMUST00000163238	Mdm1 (BL)	0.694	11	0.482	G618del	418	-5.822
ENSMUST00000180168	Gm7102 (BL)	0.694	11	0.482	G171D	148	-5.806
ENSMUST00000108218	Klhl32 (BL)	0.694	11	0.482	R410C	1521	-4.989
ENSMUST00000216124	Olf1249 (BL)	0.694	11	0.482	F151L	837	-4.950
ENSMUST00000211155	Plekha4 (BL)	0.694	11	0.482	G308E	335	-4.916
ENSMUST00000025181	H2-K1 (BL)	0.694	11	0.482	T246I	8989	-4.867
ENSMUST00000005692	Atp4a (BL)	0.694	11	0.482	T495I	2328	-4.865
ENSMUST00000170371	Atp4a (BL)	0.694	11	0.482	T495I	2328	-4.865
ENSMUST00000021693	Slc25a29 (BL)	0.694	11	0.482	T24I	442	-4.840
ENSMUST00000084781	Klhl32 (BL)	0.694	11	0.482	R377C	1522	-4.823
ENSMUST00000172912	H2-K1 (BL)	0.694	11	0.482	T246I	8907	-4.787
ENSMUST00000211797	Plekha4 (BL)	0.694	11	0.482	G237E	307	-4.690
ENSMUST00000209517	Plekha4 (BL)	0.694	11	0.482	G308E	312	-4.683
ENSMUST00000214723	Olf1140 (BL)	0.694	11	0.482	S230C	596	-4.636
ENSMUST00000217572	Olf1140 (BL)	0.694	11	0.482	S230C	596	-4.636
ENSMUST00000044828	Lgr6 (BL)	0.694	11	0.482	N280S	513	-4.624
ENSMUST00000033229	Hbb-y (BL)	0.694	11	0.482	Q40H	1528	-4.578
ENSMUST00000095925	Pnp2 (BL)	0.694	11	0.482	K259M	514	-4.477
ENSMUST00000032341	Art4 (BL)	0.694	11	0.482	E174G	170	-4.399
ENSMUST00000176868	Apobec3 (BL)	0.694	11	0.482	R45G	297	-4.327
ENSMUST00000173075	H2-K1 (BL)	0.694	11	0.482	T266I	8441	-4.305
ENSMUST00000113102	Naaa (BL)	0.694	11	0.482	D163N	296	-4.187

Transcript	Gene	A = Consensus score (=strains/36)	B = BL/6J-like strains	Total score = A x (1-B/36)	AA Mutation	Supporting Sequences	PROVEAN Score
ENSMUST00000159345	Naaa (BL)	0.694	11	0.482	D161N	296	-4.187
ENSMUST00000095450	Serpina1b (BL)	0.694	11	0.482	T252I	234	-4.092
ENSMUST00000164454	Serpina1b (BL)	0.694	11	0.482	T252I	234	-4.092
ENSMUST00000186166	Serpina1b (BL)	0.694	11	0.482	T252I	234	-4.092
ENSMUST00000137968	Lgr6 (BL)	0.694	11	0.482	N3S	358	-4.087
ENSMUST00000208384	Akt1s1 (BL)	0.694	11	0.482	R21Q	165	-3.966
ENSMUST0000044220	Cmc1 (BL)	0.694	11	0.482	M23I	222	-3.609
ENSMUST0000030949	Tas1r3 (BL)	0.694	11	0.482	Q371R	186	-3.579
ENSMUST0000037827	Slc45a1 (BL)	0.694	11	0.482	G737V	331	-3.562
ENSMUST00000123005	Hyal1 (BL)	0.694	11	0.482	G4E	395	-3.560
ENSMUST00000183254	Olf1r67 (BL)	0.694	11	0.482	H178L	806	-3.551
ENSMUST0000023029	L3mbtl2 (BL)	0.694	11	0.482	P682L	1116	-3.530
ENSMUST00000171322	Gm5415 (BL)	0.694	11	0.482	M386I	289	-3.516
ENSMUST0000032286	Klra7 (BL)	0.694	10	0.501	N120S	213	-3.504
ENSMUST00000112013	Klra7 (BL)	0.694	10	0.501	N120S	213	-3.504
ENSMUST00000061419	Gm9833 (BL)	0.694	11	0.482	N487S	952	-3.413
ENSMUST00000135663	Csdc2 (BL)	0.694	11	0.482	S7L	180	-3.407
ENSMUST00000010195	Hyal1 (BL)	0.694	11	0.482	G284E	455	-3.397
ENSMUST00000112387	Hyal1 (BL)	0.694	11	0.482	G284E	455	-3.397
ENSMUST0000044217	Syne2 (BL)	0.694	11	0.482	E5503K	281	-3.366
ENSMUST00000143031	Syne2 (BL)	0.694	11	0.482	E5504K	281	-3.366
ENSMUST0000049304	Klra7 (BL)	0.694	10	0.501	N120S	211	-3.338
ENSMUST00000088011	Klra7 (BL)	0.694	10	0.501	N120S	211	-3.338
ENSMUST0000003659	Comp (BL)	0.694	11	0.482	G377R	992	-3.303
ENSMUST00000170832	Prol1 (BL)	0.694	11	0.482	T171I	45	-3.261
ENSMUST00000101049	Elac2 (BL)	0.694	11	0.482	P27S	303	-3.193
ENSMUST00000108697	Elac2 (BL)	0.694	11	0.482	P27S	303	-3.193
ENSMUST00000101078	Serpina3m (BL)	0.694	11	0.482	E192K	205	-3.181
ENSMUST00000168797	Serpina3m (BL)	0.694	11	0.482	E192K	205	-3.181
ENSMUST00000144392	Hyal1 (BL)	0.694	11	0.482	G284E	457	-3.164
ENSMUST00000057975	Bbs12 (BL)	0.694	11	0.482	C588S	241	-3.086
ENSMUST0000044565	Col16a1 (BL)	0.694	11	0.482	A373V	323	-3.083
ENSMUST00000174229	L3mbtl2 (BL)	0.694	11	0.482	P682L	1115	-3.053
ENSMUST00000143432	Col16a1 (BL)	0.694	11	0.482	A373V	318	-3.042
ENSMUST00000187537	Pign (BL)	0.694	11	0.482	D803G	395	-3.039
ENSMUST00000054746	Olf1r1052 (BL)	0.694	11	0.482	F220L	614	-3.019
ENSMUST00000215090	Olf1r1052 (BL)	0.694	11	0.482	F220L	614	-3.019
ENSMUST00000217166	Olf1r1052 (BL)	0.694	11	0.482	F220L	614	-3.019
ENSMUST00000143577	Col16a1 (BL)	0.694	11	0.482	A58V	320	-2.983
ENSMUST00000081748	Olf1r64 (BL)	0.694	11	0.482	A233K	1020	-2.972
ENSMUST00000079924	Btbd9 (BL)	0.694	11	0.482	R46H	423	-2.949
ENSMUST00000168787	Btbd9 (BL)	0.694	11	0.482	R46H	423	-2.949
ENSMUST00000085280	Syne2 (BL)	0.694	11	0.482	E763K	290	-2.884
ENSMUST00000127783	Akt1s1 (BL)	0.694	11	0.482	R21Q	186	-2.817
ENSMUST00000150335	Akt1s1 (BL)	0.694	11	0.482	R21Q	186	-2.817
ENSMUST00000123926	Sema3b (BL)	0.694	11	0.482	A190T	701	-2.811
ENSMUST00000136232	Akt1s1 (BL)	0.694	11	0.482	R21Q	186	-2.774
ENSMUST00000073448	Sema3b (BL)	0.694	11	0.482	A190T	708	-2.766
ENSMUST00000102529	Sema3b (BL)	0.694	11	0.482	A190T	708	-2.766
ENSMUST00000102530	Sema3b (BL)	0.694	11	0.482	A190T	708	-2.766
ENSMUST00000102531	Sema3b (BL)	0.694	11	0.482	A190T	708	-2.766
ENSMUST00000102532	Sema3b (BL)	0.694	11	0.482	A190T	708	-2.766
ENSMUST00000071325	Nf1 (BL)	0.694	11	0.482	V2128L	727	-2.736
ENSMUST00000108251	Nf1 (BL)	0.694	11	0.482	V2107L	727	-2.736
ENSMUST00000034846	1700017B05Rik (BL)	0.694	11	0.482	G230S	187	-2.696
ENSMUST00000213199	1700017B05Rik (BL)	0.694	11	0.482	G230S	187	-2.696
ENSMUST00000038757	Csdc2 (BL)	0.694	11	0.482	S7L	505	-2.683
ENSMUST00000106878	Olf1r69 (BL)	0.694	11	0.482	F310L	1051	-2.661
ENSMUST00000108121	Bbs12 (BL)	0.694	11	0.482	C473S	240	-2.586
ENSMUST00000212554	Kifc3 (BL)	0.694	11	0.482	K148N	334	-2.583

Transcript	Gene	A = Consensus score (=strains/36)	B = BL/6J-like strains	Total score = A x (1-B/36)	AA Mutation	Supporting Sequences	PROVEAN Score
ENSMUST00000055006	Trim16 (BL)	0.694	11	0.482	A482V	171	-2.576
ENSMUST00000038163	Pnmal1 (BL)	0.694	11	0.482	A116G	132	-2.525
ENSMUST00000062683	Krtap9-3 (BL)	0.667	12	0.445	G18_C20del	378	-24.212
ENSMUST00000178033	Kiss1 (BL)	0.667	12	0.445	V25_L28del	100	-12.388
ENSMUST00000193888	Kiss1 (BL)	0.667	12	0.445	V25_L28del	100	-12.388
ENSMUST00000195286	Kiss1 (BL)	0.667	12	0.445	V25_L28del	100	-12.388
ENSMUST0000027970	Dusp12 (BL)	0.667	12	0.445	Y190C	243	-7.334
ENSMUST00000088448	Pkhd1 (BL)	0.667	12	0.445	P1264L	192	-7.277
ENSMUST00000188712	Fam135a (BL)	0.667	12	0.445	D114G	578	-6.790
ENSMUST00000186999	Fam135a (BL)	0.667	12	0.445	D114G	687	-6.444
ENSMUST00000035757	Pramel5 (BL)	0.667	12	0.445	P448A	187	-6.358
ENSMUST00000105752	Pramel5 (BL)	0.667	12	0.445	P448A	187	-6.358
ENSMUST00000211403	Chd9 (BL)	0.667	12	0.445	H160P	490	-6.217
ENSMUST0000018212	Ints2 (BL)	0.667	12	0.445	H196R	445	-6.135
ENSMUST00000108039	Ints2 (BL)	0.667	12	0.445	H196R	445	-6.135
ENSMUST0000027337	Fam135a (BL)	0.667	12	0.445	D114G	680	-6.049
ENSMUST00000077471	Olf1136 (BL)	0.667	12	0.445	F177L	687	-5.986
ENSMUST00000143255	Olf1221 (BL)	0.667	12	0.445	G203S	534	-5.929
ENSMUST00000213404	Olf1221 (BL)	0.667	12	0.445	G203S	534	-5.929
ENSMUST00000217635	Olf1221 (BL)	0.667	12	0.445	G203S	534	-5.929
ENSMUST00000059839	Ast1 (BL)	0.667	12	0.445	P94L	131	-5.893
ENSMUST00000089673	Ast1 (BL)	0.667	12	0.445	P115L	131	-5.893
ENSMUST00000179618	Ast1 (BL)	0.667	12	0.445	P94L	131	-5.893
ENSMUST00000187369	Fam135a (BL)	0.667	12	0.445	D114G	680	-5.861
ENSMUST00000187752	Fam135a (BL)	0.667	12	0.445	D71G	680	-5.861
ENSMUST00000216851	Olf1084 (BL)	0.667	12	0.445	Q100P	764	-5.830
ENSMUST00000129213	Etnk2 (BL)	0.667	12	0.445	E189V	628	-5.823
ENSMUST00000135222	Etnk2 (BL)	0.667	12	0.445	E292V	625	-5.823
ENSMUST00000188048	Mei1 (BL)	0.667	11	0.463	R492W	307	-5.745
ENSMUST00000189540	Mei1 (BL)	0.667	11	0.463	R492W	307	-5.745
ENSMUST0000027974	Atf6 (BL)	0.667	12	0.445	P237S	308	-5.570
ENSMUST00000021911	2010111I01Rik (BL)	0.667	12	0.445	F220I	432	-5.497
ENSMUST00000091560	2010111I01Rik (BL)	0.667	12	0.445	F220I	432	-5.497
ENSMUST00000214922	Olf1338 (BL)	0.667	12	0.445	N173K	1374	-5.109
ENSMUST00000216559	Olf1338 (BL)	0.667	12	0.445	N173K	1374	-5.109
ENSMUST00000081349	Fmn1 (BL)	0.667	12	0.445	E550G	315	-5.030
ENSMUST00000099576	Fmn1 (BL)	0.667	12	0.445	E776G	266	-4.826
ENSMUST00000102547	Fmn1 (BL)	0.667	12	0.445	E776G	265	-4.826
ENSMUST00000161731	Fmn1 (BL)	0.667	12	0.445	E678G	343	-4.818
ENSMUST00000165017	Nolc1 (BL)	0.667	11	0.463	S230_S232del	368	-4.664
ENSMUST00000055115	Vwce (BL)	0.667	12	0.445	P375S	257	-4.621
ENSMUST00000038842	Ppp1r32 (BL)	0.667	12	0.445	P286S	163	-4.599
ENSMUST00000027217	1500015O10Rik (BL)	0.667	12	0.445	D146N	261	-4.529
ENSMUST00000091554	Cntnap3 (BL)	0.667	12	0.445	H812R	500	-4.431
ENSMUST00000109614	Chd9 (BL)	0.667	12	0.445	H160P	717	-4.333
ENSMUST00000209423	Chd9 (BL)	0.667	12	0.445	H160P	717	-4.333
ENSMUST00000048665	Chd9 (BL)	0.667	12	0.445	H160P	717	-4.324
ENSMUST00000013995	Abca4 (BL)	0.667	12	0.445	P799S	338	-4.296
ENSMUST00000185374	Me1 (BL)	0.667	12	0.445	D488G	686	-4.234
ENSMUST00000030852	Rint1 (BL)	0.667	12	0.445	I168T	347	-4.225
ENSMUST00000052478	Dmrt1 (BL)	0.667	12	0.445	R329H	137	-4.220
ENSMUST00000034989	Me1 (BL)	0.667	12	0.445	D508G	680	-4.219
ENSMUST00000115113	Rint1 (BL)	0.667	12	0.445	I168T	349	-4.214
ENSMUST00000161198	Nat8f1 (BL)	0.667	12	0.445	T206A	139	-4.105
ENSMUST00000048557	Npffr2 (BL)	0.667	12	0.445	E260V	518	-4.042
ENSMUST00000209203	Chd9 (BL)	0.667	12	0.445	H160P	718	-3.999
ENSMUST00000099918	Olf154 (BL)	0.667	12	0.445	N195K	657	-3.971
ENSMUST00000035471	Lama1 (BL)	0.667	12	0.445	A2120V	233	-3.929
ENSMUST00000047443	Mansc1 (BL)	0.667	12	0.445	T192M	117	-3.908
ENSMUST00000007250	Msh5 (BL)	0.667	12	0.445	K804T	485	-3.893

Transcript	Gene	A = Consensus score (=strains/36)	B = BL/6J-like strains	Total score = A x (1-B/36)	AA Mutation	Supporting Sequences	PROVEAN Score
ENSMUST00000097338	Msh5 (BL)	0.667	12	0.445	K804T	485	-3.893
ENSMUST00000045075	Cd300ld (BL)	0.667	12	0.445	P21S	93	-3.889
ENSMUST00000021837	Serpib9c (BL)	0.667	12	0.445	S118P	358	-3.881
ENSMUST00000135801	Coq2 (BL)	0.667	12	0.445	M15V	303	-3.842
ENSMUST00000031262	Coq2 (BL)	0.667	12	0.445	M198V	310	-3.825
ENSMUST00000054472	Bsnd (BL)	0.667	12	0.445	D292N	137	-3.807
ENSMUST00000101398	Ttc6 (BL)	0.667	12	0.445	P109R	98	-3.740
ENSMUST00000169295	Lax1 (BL)	0.667	12	0.445	G342R	152	-3.629
ENSMUST00000061190	Gp5 (BL)	0.667	12	0.445	T269S	105	-3.585
ENSMUST00000035075	Tdgfl (BL)	0.667	12	0.445	R146G	147	-3.579
ENSMUST00000057272	4932438A13Rik (BL)	0.667	12	0.445	T1487R	786	-3.572
ENSMUST00000152564	4932438A13Rik (BL)	0.667	12	0.445	T1487R	786	-3.572
ENSMUST00000032843	Tmem126b (BL)	0.667	12	0.445	T222P	212	-3.494
ENSMUST00000047446	Sidt1 (BL)	0.667	12	0.445	R172P	833	-3.475
ENSMUST00000136381	Sidt1 (BL)	0.667	12	0.445	R172P	833	-3.475
ENSMUST00000094665	Pla2g4d (BL)	0.667	12	0.445	P19H	335	-3.451
ENSMUST00000022182	F2rl2 (BL)	0.667	12	0.445	M164T	362	-3.434
ENSMUST000000218607	Uhrf1bp1l (BL)	0.667	12	0.445	D59E	391	-3.423
ENSMUST00000069837	Slit3 (BL)	0.667	12	0.445	G606S	1053	-3.345
ENSMUST00000026381	Padi4 (BL)	0.667	12	0.445	R612H	191	-3.276
ENSMUST00000046384	C1qb (BL)	0.667	12	0.445	R115G	483	-3.260
ENSMUST00000030328	9430007A20Rik (BL)	0.667	12	0.445	N238H	113	-3.248
ENSMUST00000029574	Vcam1 (BL)	0.667	12	0.445	D693N	226	-3.213
ENSMUST00000039484	Zc3h12d (BL)	0.667	12	0.445	P302L	114	-3.207
ENSMUST00000174751	H2-Aa (BL)	0.667	12	0.445	T73A	1326	-3.206
ENSMUST00000038876	Emp3 (BL)	0.667	12	0.445	I154T	363	-3.155
ENSMUST00000164119	Emp3 (BL)	0.667	12	0.445	I154T	363	-3.155
ENSMUST00000210297	Emp3 (BL)	0.667	12	0.445	I154T	363	-3.155
ENSMUST00000113130	Mroh2a (BL)	0.667	12	0.445	M416I	178	-3.004
ENSMUST00000045870	Rnf225 (BL)	0.667	12	0.445	G245D	71	-2.959
ENSMUST00000047702	Cd160 (BL)	0.667	12	0.445	S76N	119	-2.933
ENSMUST00000107074	Cd160 (BL)	0.667	12	0.445	S76N	119	-2.933
ENSMUST00000039949	Eme1 (BL)	0.667	12	0.445	A283V	184	-2.926
ENSMUST00000173651	Gtf2i (BL)	0.667	12	0.445	A5V	780	-2.852
ENSMUST00000034091	Rbl2 (BL)	0.667	12	0.445	Q443R	554	-2.817
ENSMUST00000173263	Gtf2i (BL)	0.667	12	0.445	A5V	780	-2.786
ENSMUST00000209518	Rbl2 (BL)	0.667	12	0.445	Q443R	550	-2.784
ENSMUST00000113528	Majin (BL)	0.667	12	0.445	R183T	156	-2.709
ENSMUST00000099789	Olf1220 (BL)	0.667	12	0.445	R298Q	825	-2.689
ENSMUST00000099806	Olf1220 (BL)	0.667	12	0.445	R298Q	825	-2.689
ENSMUST00000213288	Olf1220 (BL)	0.667	12	0.445	R298Q	825	-2.689
ENSMUST00000211136	Rbl2 (BL)	0.667	12	0.445	Q400R	662	-2.686
ENSMUST00000049887	Nupl2 (BL)	0.667	12	0.445	A308G	228	-2.685
ENSMUST00000087541	Trmt2b (BL)	0.667	12	0.445	A431T	276	-2.676
ENSMUST00000113252	Trmt2b (BL)	0.667	12	0.445	A431T	276	-2.676
ENSMUST00000165991	Cd160 (BL)	0.667	12	0.445	S76N	117	-2.667
ENSMUST00000040655	H2-Aa (BL)	0.667	12	0.445	T156A	1498	-2.624
ENSMUST00000072156	Tiam2 (BL)	0.667	12	0.445	A860V	439	-2.577
ENSMUST00000169838	Tiam2 (BL)	0.667	12	0.445	A860V	439	-2.577
ENSMUST00000113403	Epha5 (BL)	0.667	12	0.445	A861S	2555	-2.555
ENSMUST00000113399	Epha5 (BL)	0.667	12	0.445	A861S	2316	-2.543
ENSMUST00000113406	Epha5 (BL)	0.667	12	0.445	A838S	2562	-2.526
ENSMUST00000084097	Aurkaip1 (BL)	0.667	12	0.445	L59S	207	-2.516
ENSMUST00000105591	Aurkaip1 (BL)	0.667	12	0.445	L59S	207	-2.516
ENSMUST00000105592	Aurkaip1 (BL)	0.667	12	0.445	L59S	207	-2.516
ENSMUST00000107272	Cgn (BL)	0.667	12	0.445	R639Q	194	-2.515
ENSMUST00000107273	Cgn (BL)	0.667	12	0.445	R647Q	194	-2.515
ENSMUST00000159200	Prmt4 (BL)	0.639	12	0.426	P331L	140	-8.012
ENSMUST00000185144	Mlip (BL)	0.639	13	0.408	P397S	495	-7.029
ENSMUST00000147630	Zfp97 (BL)	0.639	13	0.408	G346R	123	-6.965

Transcript	Gene	A = Consensus score (=strains/36)	B = BL/6J-like strains	Total score = A x (1-B/36)	AA Mutation	Supporting Sequences	PROVEAN Score
ENSMUST00000183955	Mlip (BL)	0.639	13	0.408	P441S	504	-6.763
ENSMUST00000184322	Mlip (BL)	0.639	13	0.408	P364S	500	-6.758
ENSMUST00000017290	Bracl (BL)	0.639	13	0.408	P765S	463	-6.721
ENSMUST00000080405	Oog2 (BL)	0.639	13	0.408	G84E	154	-6.675
ENSMUST00000021240	Cdc34b (BL)	0.639	13	0.408	V101D	581	-6.552
ENSMUST00000188741	Cdc34b (BL)	0.639	13	0.408	V101D	581	-6.552
ENSMUST00000170704	Dthd1 (BL)	0.639	13	0.408	L564del	216	-6.549
ENSMUST00000062202	Sned1 (BL)	0.639	13	0.408	P1244S	299	-6.520
ENSMUST00000037900	Cpne7 (BL)	0.639	13	0.408	E83G	569	-6.310
ENSMUST00000033465	Vgll1 (BL)	0.639	13	0.408	P127A	105	-6.278
ENSMUST00000114745	Vgll1 (BL)	0.639	13	0.408	P127A	105	-6.278
ENSMUST00000114746	Vgll1 (BL)	0.639	13	0.408	P127A	105	-6.278
ENSMUST00000115029	Arid5a (BL)	0.639	13	0.408	P381S	236	-5.601
ENSMUST00000203405	Clec2g (BL)	0.639	13	0.408	Y52C	106	-5.587
ENSMUST00000204259	Clec2g (BL)	0.639	13	0.408	Y58C	106	-5.587
ENSMUST00000031051	Cgref1 (BL)	0.639	13	0.408	E231del	140	-5.576
ENSMUST00000140796	Eif4g3 (BL)	0.639	13	0.408	E747G	1088	-5.512
ENSMUST00000037709	Tm7sf3 (BL)	0.639	13	0.408	F470V	294	-5.435
ENSMUST00000000254	Clec2g (BL)	0.639	13	0.408	Y109C	100	-5.362
ENSMUST00000187990	Olf1246 (BL)	0.639	13	0.408	T46M	830	-5.276
ENSMUST00000213221	Olf1246 (BL)	0.639	13	0.408	T46M	830	-5.276
ENSMUST00000217192	Olf1246 (BL)	0.639	13	0.408	T46M	830	-5.276
ENSMUST00000217254	Olf1246 (BL)	0.639	13	0.408	T46M	830	-5.276
ENSMUST00000097778	Arid5a (BL)	0.639	13	0.408	P569S	238	-5.257
ENSMUST00000115032	Arid5a (BL)	0.639	13	0.408	P540S	238	-5.257
ENSMUST00000137906	Arid5a (BL)	0.639	13	0.408	P482S	238	-5.257
ENSMUST00000084214	Eif4g3 (BL)	0.639	13	0.408	E1323G	1141	-5.194
ENSMUST00000047104	Prph (BL)	0.639	13	0.408	T359M	893	-5.187
ENSMUST00000024249	Prph (BL)	0.639	13	0.408	T327M	896	-5.171
ENSMUST00000185039	Mlip (BL)	0.639	13	0.408	Q206L	526	-5.171
ENSMUST00000021506	Serpina3n (BL)	0.639	13	0.408	S258F	197	-5.138
ENSMUST00000048427	Ankrd35 (BL)	0.639	13	0.408	A485del	186	-5.122
ENSMUST00000056549	Zfp235 (BL)	0.639	13	0.408	R403C	451	-5.110
ENSMUST00000105831	Eif4g3 (BL)	0.639	13	0.408	E1312G	1147	-5.039
ENSMUST00000184138	Mlip (BL)	0.639	13	0.408	Q154L	557	-5.038
ENSMUST00000184006	Mlip (BL)	0.639	13	0.408	Q154L	428	-5.007
ENSMUST00000034910	Mlip (BL)	0.639	13	0.408	Q154L	428	-5.003
ENSMUST00000184848	Mlip (BL)	0.639	13	0.408	Q154L	457	-4.984
ENSMUST00000173682	Rusc2 (BL)	0.639	13	0.408	G299S	287	-4.935
ENSMUST00000084215	Eif4g3 (BL)	0.639	13	0.408	E1324G	1141	-4.905
ENSMUST00000205033	Antxr1 (BL)	0.639	13	0.408	C479F	567	-4.893
ENSMUST00000069660	D430042O09Rik (BL)	0.639	13	0.408	D951G	292	-4.834
ENSMUST00000124223	D430042O09Rik (BL)	0.639	13	0.408	D925G	292	-4.834
ENSMUST00000168878	Shroom3 (BL)	0.639	13	0.408	E1270G	168	-4.798
ENSMUST00000070892	Dsg3 (BL)	0.639	13	0.408	H22Q	301	-4.695
ENSMUST00000184316	Mlip (BL)	0.639	13	0.408	Q198L	519	-4.686
ENSMUST00000030490	Stil (BL)	0.639	13	0.408	H942R	358	-4.682
ENSMUST00000184415	Mlip (BL)	0.639	13	0.408	Q206L	540	-4.488
ENSMUST00000034618	Pdzd3 (BL)	0.639	12	0.426	R393C	216	-4.313
ENSMUST00000035645	Rusc2 (BL)	0.639	13	0.408	G299S	311	-4.181
ENSMUST00000098106	Rusc2 (BL)	0.639	13	0.408	G299S	311	-4.181
ENSMUST00000131668	Rusc2 (BL)	0.639	13	0.408	G299S	311	-4.181
ENSMUST00000113051	Shroom3 (BL)	0.639	13	0.408	E1226G	167	-4.114
ENSMUST00000113054	Shroom3 (BL)	0.639	13	0.408	E1226G	167	-4.114
ENSMUST00000113055	Shroom3 (BL)	0.639	13	0.408	E1401G	167	-4.114
ENSMUST00000217368	Olf1133 (BL)	0.639	13	0.408	R123H	720	-3.952
ENSMUST00000043822	Cblc (BL)	0.639	13	0.408	D416G	163	-3.865
ENSMUST00000143764	Fsip2 (BL)	0.639	13	0.408	K2630N	96	-3.804
ENSMUST00000043634	Scube1 (BL)	0.639	13	0.408	C11Y	930	-3.746
ENSMUST00000107770	Tstd2 (BL)	0.639	13	0.408	D303N	335	-3.717

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ENSMUST00000107772	Tstd2 (BL)	0.639	13	0.408	D303N	335	-3.717
ENSMUST00000089293	Cbx7 (BL)	0.639	13	0.408	G110R	276	-3.643
ENSMUST00000052774	Tyw3 (BL)	0.639	13	0.408	S146G	225	-3.601
ENSMUST00000122976	Tyw3 (BL)	0.639	13	0.408	S145G	215	-3.563
ENSMUST00000102821	Stk10 (BL)	0.639	13	0.408	P377S	272	-3.486
ENSMUST00000213315	Olf1129 (BL)	0.639	13	0.408	I190F	517	-3.483
ENSMUST00000214773	Olf1129 (BL)	0.639	13	0.408	I190F	517	-3.483
ENSMUST00000163605	Ddx11 (BL)	0.639	13	0.408	M657V	384	-3.470
ENSMUST00000073211	Myom1 (BL)	0.639	13	0.408	G1253S	399	-3.333
ENSMUST00000080834	Zfp82 (BL)	0.639	13	0.408	A304V	745	-3.312
ENSMUST00000182546	Zfp82 (BL)	0.639	13	0.408	A274V	740	-3.312
ENSMUST00000123027	Tnfrsf8 (BL)	0.639	13	0.408	D161G	133	-3.308
ENSMUST00000108449	Cblc (BL)	0.639	13	0.408	D372G	163	-3.280
ENSMUST00000046110	Astn1 (BL)	0.639	13	0.408	T1037N	842	-3.263
ENSMUST00000193042	Astn1 (BL)	0.639	13	0.408	T1045N	841	-3.263
ENSMUST00000069507	C4b (BL)	0.639	13	0.408	T604M	214	-3.258
ENSMUST00000022638	Nefm (BL)	0.639	13	0.408	P699L	336	-3.245
ENSMUST00000093867	Olf893 (BL)	0.639	13	0.408	Q26R	1431	-3.235
ENSMUST00000211975	Olf893 (BL)	0.639	13	0.408	Q24R	1431	-3.235
ENSMUST00000014830	Ceacam16 (BL)	0.639	13	0.408	T247M	177	-3.205
ENSMUST00000133930	BC030867 (BL)	0.639	13	0.408	G205E	196	-3.146
ENSMUST00000094794	Psg27 (BL)	0.639	13	0.408	L171F	98	-3.136
ENSMUST00000133437	Btbd18 (BL)	0.639	13	0.408	G330E	137	-3.127
ENSMUST00000086694	Serp1b3b (BL)	0.639	13	0.408	S385C	204	-3.087
ENSMUST00000166100	Serp1b3b (BL)	0.639	13	0.408	S385C	204	-3.087
ENSMUST00000049583	Zbtb40 (BL)	0.639	13	0.408	T393M	313	-3.082
ENSMUST00000056053	Setd1b (BL)	0.639	13	0.408	G1414S	111	-2.900
ENSMUST00000098334	Ankrd11 (BL)	0.639	13	0.408	E2147K	343	-2.900
ENSMUST00000163030	Setd1b (BL)	0.639	13	0.408	G1414S	111	-2.900
ENSMUST00000100369	Fam187a (BL)	0.639	13	0.408	D211A	213	-2.879
ENSMUST00000100392	BC030867 (BL)	0.639	13	0.408	G205E	196	-2.879
ENSMUST00000113565	Obsl1 (BL)	0.639	13	0.408	E858K	332	-2.862
ENSMUST00000030013	Xpa (BL)	0.639	13	0.408	E244K	306	-2.849
ENSMUST00000061618	Pat11 (BL)	0.639	13	0.408	R389Q	294	-2.841
ENSMUST00000078691	Bak1 (BL)	0.639	13	0.408	L181F	239	-2.836
ENSMUST00000031446	Tmem132b (BL)	0.639	13	0.408	D621N	789	-2.835
ENSMUST00000076060	Scube1 (BL)	0.639	13	0.408	C11Y	1056	-2.777
ENSMUST00000171496	Scube1 (BL)	0.639	13	0.408	C11Y	1056	-2.777
ENSMUST00000075045	Gm13084 (BL)	0.639	13	0.408	H66R	153	-2.747
ENSMUST00000016907	Scube1 (BL)	0.639	13	0.408	C11Y	1072	-2.717
ENSMUST00000174836	Setd1b (BL)	0.639	13	0.408	G1373S	116	-2.633
ENSMUST00000106455	Toe1 (BL)	0.639	13	0.408	M128I	322	-2.582
ENSMUST00000030339	Tnfrsf8 (BL)	0.639	13	0.408	D161G	127	-2.563
ENSMUST00000030451	Toe1 (BL)	0.639	13	0.408	M128I	323	-2.560
ENSMUST00000033740	Zfp92 (BL)	0.611	14	0.373	C314Y	105	-10.753
ENSMUST00000001116	Luzp1 (BL)	0.611	14	0.373	A907_V911del	285	-10.456
ENSMUST00000063021	Luzp1 (BL)	0.611	14	0.373	A907_V911del	285	-10.456
ENSMUST00000105849	Luzp1 (BL)	0.611	14	0.373	A907_V911del	285	-10.456
ENSMUST00000170102	Luzp1 (BL)	0.611	14	0.373	A907_V911del	285	-10.456
ENSMUST00000105054	2300003K06Rik (BL)	0.611	14	0.373	C105Y	590	-8.179
ENSMUST00000194796	Kcnmb2 (BL)	0.611	14	0.373	H15Q	247	-7.333
ENSMUST00000066568	Fpgt (BL)	0.611	14	0.373	R517C	221	-6.980
ENSMUST00000059676	Aqp12 (BL)	0.611	14	0.373	E40G	204	-6.546
ENSMUST00000105766	Pramef25 (BL)	0.611	14	0.373	P75L	147	-6.406
ENSMUST00000114232	H2-DMb1 (BL)	0.611	14	0.373	P114A	326	-6.098
ENSMUST00000096452	BC005561 (BL)	0.611	14	0.373	E135G	563	-6.097
ENSMUST00000135986	Ccdc13 (BL)	0.611	14	0.373	P304S	224	-6.094
ENSMUST00000039507	Oscar (BL)	0.611	13	0.390	P63S	150	-6.065
ENSMUST00000108645	Oscar (BL)	0.611	13	0.390	P57S	150	-6.065
ENSMUST00000148012	Oscar (BL)	0.611	13	0.390	P46S	150	-6.065

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ENSMUST00000037055	Atp13a2 (BL)	0.611	14	0.373	R539C	356	-6.059
ENSMUST00000054651	Pla2g4f (BL)	0.611	14	0.373	H99P	301	-5.938
ENSMUST00000127833	Atp13a2 (BL)	0.611	14	0.373	R539C	356	-5.870
ENSMUST00000064307	Aatk (BL)	0.611	14	0.373	R354G	227	-5.544
ENSMUST00000103019	Aatk (BL)	0.611	14	0.373	R297G	227	-5.544
ENSMUST00000103020	Aatk (BL)	0.611	14	0.373	R297G	227	-5.544
ENSMUST00000108015	Zfp619 (BL)	0.611	14	0.373	G772E	155	-5.500
ENSMUST00000078825	Fcgr4 (BL)	0.611	14	0.373	T57I	227	-5.317
ENSMUST00000213724	Olf1219 (BL)	0.611	14	0.373	R298G	794	-4.984
ENSMUST00000214442	Olf1219 (BL)	0.611	14	0.373	R298G	794	-4.984
ENSMUST00000215225	Olf1219 (BL)	0.611	14	0.373	R298G	794	-4.984
ENSMUST00000217421	Olf1219 (BL)	0.611	14	0.373	R298G	794	-4.984
ENSMUST00000043676	Sspo (BL)	0.611	14	0.373	A2852E	87	-4.952
ENSMUST00000169350	Sspo (BL)	0.611	14	0.373	A2997E	87	-4.952
ENSMUST00000001824	Folh1 (BL)	0.611	14	0.373	G240A	724	-4.737
ENSMUST00000105031	Klhdc7a (BL)	0.611	14	0.373	G65A	123	-4.574
ENSMUST00000107271	Folh1 (BL)	0.611	14	0.373	G240A	724	-4.520
ENSMUST00000028934	Cst11 (BL)	0.611	14	0.373	R4G	90	-4.516
ENSMUST00000073127	Ncapd3 (BL)	0.611	14	0.373	E422T	254	-4.347
ENSMUST00000216677	Ncapd3 (BL)	0.611	14	0.373	E422T	254	-4.347
ENSMUST00000086198	Ncapd3 (BL)	0.611	14	0.373	E422T	257	-4.180
ENSMUST00000084947	Trmt61a (BL)	0.611	14	0.373	R166C	318	-3.904
ENSMUST00000168338	Trmt61a (BL)	0.611	14	0.373	R166C	318	-3.904
ENSMUST00000034457	Urb2 (BL)	0.611	14	0.373	F842S	232	-3.881
ENSMUST00000009667	Ush1c (BL)	0.611	14	0.373	E375K	369	-3.878
ENSMUST00000143155	Ush1c (BL)	0.611	14	0.373	E375K	369	-3.878
ENSMUST00000022095	Irx4 (BL)	0.611	14	0.373	P248H	206	-3.870
ENSMUST00000078680	Ush1c (BL)	0.611	14	0.373	E375K	387	-3.870
ENSMUST00000176371	Ush1c (BL)	0.611	14	0.373	E344K	387	-3.870
ENSMUST00000176684	Irx4 (BL)	0.611	14	0.373	P248H	206	-3.870
ENSMUST00000177212	Ush1c (BL)	0.611	14	0.373	E356K	387	-3.870
ENSMUST00000080953	Lrp2 (BL)	0.611	14	0.373	T2421M	368	-3.848
ENSMUST00000001036	Tyk2 (BL)	0.611	14	0.373	R261H	264	-3.823
ENSMUST00000214454	Tyk2 (BL)	0.611	14	0.373	R238H	264	-3.823
ENSMUST00000216874	Tyk2 (BL)	0.611	14	0.373	R261H	264	-3.823
ENSMUST00000035548	Alpk2 (BL)	0.611	14	0.373	E149G	177	-3.741
ENSMUST00000173168	Urb2 (BL)	0.611	14	0.373	F842S	229	-3.714
ENSMUST00000081645	Pramef6 (BL)	0.611	14	0.373	H74D	233	-3.704
ENSMUST00000185370	Sspo (BL)	0.611	14	0.373	G275R	86	-3.696
ENSMUST00000114027	Crygf (BL)	0.611	14	0.373	R80H	604	-3.679
ENSMUST00000172235	Rnf213 (BL)	0.611	14	0.373	S113L	126	-3.659
ENSMUST00000222477	Platr25 (BL)	0.611	14	0.373	S36I	142	-3.658
ENSMUST00000200079	Rrh (BL)	0.611	14	0.373	N201H	288	-3.592
ENSMUST00000221996	Platr25 (BL)	0.611	14	0.373	S68I	139	-3.509
ENSMUST00000043884	Lrrn3 (BL)	0.611	14	0.373	S573F	899	-3.483
ENSMUST00000085548	Olf112 (BL)	0.611	14	0.373	S10R	337	-3.428
ENSMUST00000208832	Olf112 (BL)	0.611	14	0.373	S10R	337	-3.428
ENSMUST00000213274	Olf112 (BL)	0.611	14	0.373	S10R	337	-3.428
ENSMUST00000174798	Olf112 (BL)	0.611	14	0.373	S10R	349	-3.423
ENSMUST00000106828	Trim30c (BL)	0.611	10	0.441	K272P	225	-3.421
ENSMUST00000027082	Crygf (BL)	0.611	14	0.373	R80H	592	-3.411
ENSMUST00000171313	Rrh (BL)	0.611	14	0.373	N298H	293	-3.293
ENSMUST00000196902	Rrh (BL)	0.611	14	0.373	N298H	293	-3.293
ENSMUST00000060513	Acad8 (BL)	0.611	14	0.373	G207E	378	-3.273
ENSMUST00000120367	Acad8 (BL)	0.611	14	0.373	G207E	378	-3.273
ENSMUST00000073151	Nlrp9b (BL)	0.611	14	0.373	T743I	119	-3.241
ENSMUST00000103212	Ube4b (BL)	0.611	14	0.373	D408E	481	-3.239
ENSMUST00000066330	Mprip (BL)	0.611	14	0.373	T448A	381	-3.211
ENSMUST00000139420	Mvk (BL)	0.611	14	0.373	Y22F	315	-3.144
ENSMUST00000072031	Mprip (BL)	0.611	14	0.373	T484A	540	-3.129

Transcript	Gene	A = Consensus score (=strains/36)	B = BL/6J-like strains	Total score = A x (1-B/36)	AA Mutation	Supporting Sequences	PROVEAN Score
ENSMUST00000116371	Mprip (BL)	0.611	14	0.373	T484A	540	-3.129
ENSMUST00000108751	Mprip (BL)	0.611	14	0.373	T446A	540	-3.126
ENSMUST00000024338	C1qtnf12 (BL)	0.611	12	0.407	D117G	264	-3.123
ENSMUST00000213609	Olf1218 (BL)	0.611	14	0.373	T77I	797	-3.093
ENSMUST00000215048	Olf1218 (BL)	0.611	14	0.373	T77I	797	-3.093
ENSMUST00000215054	Olf1218 (BL)	0.611	14	0.373	T77I	797	-3.093
ENSMUST00000105767	Pramef6 (BL)	0.611	14	0.373	H74D	216	-3.063
ENSMUST00000209044	Whamm (BL)	0.611	14	0.373	I196T	109	-3.047
ENSMUST00000039373	Uba6 (BL)	0.611	14	0.373	K978N	349	-2.926
ENSMUST00000113373	Uba6 (BL)	0.611	14	0.373	K947N	349	-2.926
ENSMUST00000213737	Olf1305 (BL)	0.611	14	0.373	H6Y	1433	-2.915
ENSMUST00000080165	Olf292 (BL)	0.611	14	0.373	T263I	260	-2.879
ENSMUST00000133861	Mprip (BL)	0.611	14	0.373	T470A	657	-2.819
ENSMUST0000028522	Itga6 (BL)	0.611	14	0.373	V975L	454	-2.770
ENSMUST00000112101	Itga6 (BL)	0.611	14	0.373	V975L	456	-2.748
ENSMUST0000043760	Mvk (BL)	0.611	14	0.373	Y216F	329	-2.700
ENSMUST00000112239	Mvk (BL)	0.611	14	0.373	Y228F	329	-2.700
ENSMUST00000032827	Hapln3 (BL)	0.611	14	0.373	L12F	254	-2.684
ENSMUST00000092889	Taok3 (BL)	0.611	14	0.373	V388A	800	-2.644
ENSMUST00000111978	Taok3 (BL)	0.611	14	0.373	V388A	800	-2.644
ENSMUST00000179276	Taok3 (BL)	0.611	14	0.373	V388A	800	-2.644
ENSMUST00000124260	Mvk (BL)	0.611	14	0.373	Y228F	311	-2.635
ENSMUST00000137167	Mvk (BL)	0.611	14	0.373	Y216F	311	-2.635
ENSMUST00000182994	Ank2 (BL)	0.611	14	0.373	R442W	954	-2.622
ENSMUST00000013759	Fnbp4 (BL)	0.611	14	0.373	S238P	238	-2.602
ENSMUST00000038154	Mgarp (BL)	0.611	14	0.373	P182Q	99	-2.591
ENSMUST00000108046	Mgarp (BL)	0.611	14	0.373	P174Q	99	-2.591
ENSMUST00000141156	Mgarp (BL)	0.611	14	0.373	P196Q	99	-2.591
ENSMUST00000004201	Col5a3 (BL)	0.611	14	0.373	P301L	264	-2.572
ENSMUST00000101217	Ripply1 (BL)	0.611	14	0.373	R109H	92	-2.565
ENSMUST00000214857	Olf1104 (BL)	0.611	14	0.373	L82V	855	-2.539
ENSMUST00000215972	Olf1104 (BL)	0.611	14	0.373	L82V	855	-2.539
ENSMUST00000182610	Ank2 (BL)	0.611	14	0.373	R406W	917	-2.532
ENSMUST00000144061	Samd8 (BL)	0.611	14	0.373	E25K	41	-2.527
ENSMUST00000215763	Olf1045 (BL)	0.611	14	0.373	N307S	1048	-2.527
ENSMUST00000061169	Gal3st3 (BL)	0.611	14	0.373	R17H	180	-2.518
ENSMUST00000123498	Mipol1 (BL)	0.611	14	0.373	E148K	414	-2.515
ENSMUST00000130447	Mipol1 (BL)	0.611	14	0.373	E148K	414	-2.515
ENSMUST00000145003	Mipol1 (BL)	0.611	14	0.373	E148K	414	-2.515
ENSMUST00000153137	Mipol1 (BL)	0.611	14	0.373	E148K	413	-2.504
ENSMUST00000033854	Defb8 (BL)	0.583	15	0.340	C31Y	56	-10.753
ENSMUST00000037145	Cdhr2 (BL)	0.583	15	0.340	S698del	178	-10.495
ENSMUST00000048893	1700013G24Rik (BL)	0.583	15	0.340	G219del	72	-8.647
ENSMUST00000030551	Alpl (BL)	0.583	15	0.340	P324L	424	-8.615
ENSMUST00000105788	Clenkb (BL)	0.583	15	0.340	P637L	352	-7.517
ENSMUST00000006378	Clenkb (BL)	0.583	15	0.340	P637L	350	-7.485
ENSMUST00000097813	Rsg1 (BL)	0.583	15	0.340	R106C	216	-7.331
ENSMUST00000038280	Fermt1 (BL)	0.583	15	0.340	R522C	1010	-7.276
ENSMUST00000061717	Pcdhb6 (BL)	0.583	15	0.340	G531V	1041	-7.133
ENSMUST00000081103	Fcgr2b (BL)	0.583	15	0.340	P155L	331	-6.629
ENSMUST00000159688	Fcgr2b (BL)	0.583	15	0.340	P155L	440	-6.551
ENSMUST00000027966	Fcgr2b (BL)	0.583	15	0.340	P155L	440	-6.543
ENSMUST00000102699	Mutyh (BL)	0.583	15	0.340	P312T	482	-6.315
ENSMUST00000162726	Znhit2 (BL)	0.583	15	0.340	P185L	149	-6.260
ENSMUST00000138112	Ccdc170 (BL)	0.583	14	0.356	R35W	293	-6.131
ENSMUST00000086464	Vsig10 (BL)	0.583	15	0.340	S63F	202	-5.586
ENSMUST00000040844	Ankrd27 (BL)	0.583	15	0.340	P730S	384	-5.561
ENSMUST00000111967	Vsig10 (BL)	0.583	15	0.340	S90F	208	-5.519
ENSMUST00000032877	Ddias (BL)	0.583	15	0.340	S18W	124	-5.440
ENSMUST00000085052	Serpina3b (BL)	0.583	15	0.340	G13E	198	-5.214

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ENSMUST00000204423	Gm44511 (BL)	0.583	15	0.340	S193L	150	-5.193
ENSMUST00000030179	Cd72 (BL)	0.583	15	0.340	R251G	140	-5.175
ENSMUST00000107926	Cd72 (BL)	0.583	15	0.340	R251G	140	-5.175
ENSMUST00000107925	Cd72 (BL)	0.583	15	0.340	R251G	138	-5.164
ENSMUST00000204394	Gm44511 (BL)	0.583	15	0.340	S193L	152	-5.161
ENSMUST00000098104	Cd72 (BL)	0.583	15	0.340	R197G	133	-5.141
ENSMUST00000190503	Ankrd27 (BL)	0.583	15	0.340	P675S	386	-5.121
ENSMUST00000098105	Cd72 (BL)	0.583	15	0.340	R227G	133	-5.008
ENSMUST00000097649	Lrrfip1 (BL)	0.583	15	0.340	H683Q	608	-4.811
ENSMUST00000145956	Pold1 (BL)	0.583	15	0.340	P114L	298	-4.770
ENSMUST00000061279	Pcdhga11 (BL)	0.583	15	0.340	S722L	954	-4.660
ENSMUST00000131377	Rbm12 (BL)	0.583	15	0.340	T122I	394	-4.570
ENSMUST00000132494	Gm28036 (BL)	0.583	15	0.340	T122I	399	-4.465
ENSMUST00000105593	Ankrd65 (BL)	0.583	15	0.340	G22A	89	-4.459
ENSMUST00000058133	Eif4g3 (BL)	0.583	15	0.340	W23R	1054	-4.417
ENSMUST00000030547	Hspg2 (BL)	0.583	15	0.340	T3932M	203	-4.392
ENSMUST00000171332	Hspg2 (BL)	0.583	15	0.340	T3940M	203	-4.392
ENSMUST00000128499	Rbm12 (BL)	0.583	15	0.340	T122I	392	-4.381
ENSMUST00000138068	Rbm12 (BL)	0.583	15	0.340	T122I	391	-4.351
ENSMUST00000105771	Gm13088 (BL)	0.583	15	0.340	S360F	142	-4.317
ENSMUST00000053257	Speer4b (BL)	0.583	15	0.340	Q63P	237	-4.289
ENSMUST00000059647	Rbm12 (BL)	0.583	15	0.340	T122I	400	-4.265
ENSMUST00000109604	Rbm12 (BL)	0.583	15	0.340	T122I	400	-4.265
ENSMUST00000051756	Il31ra (BL)	0.583	15	0.340	N573D	161	-4.212
ENSMUST00000094526	Gm13119 (BL)	0.583	15	0.340	G122E	151	-4.057
ENSMUST00000105763	Gm13101 (BL)	0.583	15	0.340	S268P	146	-4.028
ENSMUST00000118515	Emc10 (BL)	0.583	15	0.340	S83L	284	-3.929
ENSMUST00000051014	Exph5 (BL)	0.583	15	0.340	D1936V	212	-3.926
ENSMUST00000214392	Olf322 (BL)	0.583	15	0.340	M187T	900	-3.907
ENSMUST00000138328	Emc10 (BL)	0.583	15	0.340	S83L	284	-3.882
ENSMUST00000118808	Emc10 (BL)	0.583	15	0.340	S83L	283	-3.879
ENSMUST00000163869	Triml2 (BL)	0.583	15	0.340	Q230L	105	-3.810
ENSMUST00000209200	Triml2 (BL)	0.583	15	0.340	Q230L	105	-3.810
ENSMUST00000210136	Triml2 (BL)	0.583	15	0.340	Q230L	105	-3.810
ENSMUST00000209872	Triml2 (BL)	0.583	15	0.340	Q183L	96	-3.729
ENSMUST00000056129	Npas4 (BL)	0.583	15	0.340	I309F	221	-3.627
ENSMUST00000111605	Tnks1bp1 (BL)	0.583	15	0.340	V619A	144	-3.533
ENSMUST0000009772	Tex15 (BL)	0.583	15	0.340	H568R	133	-3.499
ENSMUST00000039818	Aldh4a1 (BL)	0.583	15	0.340	T60M	373	-3.464
ENSMUST00000019291	Psg28 (BL)	0.583	15	0.340	P147S	100	-3.460
ENSMUST00000082170	Fat3 (BL)	0.583	15	0.340	P735L	861	-3.386
ENSMUST00000217308	Fat3 (BL)	0.583	15	0.340	P735L	861	-3.386
ENSMUST00000041123	Muc20 (BL)	0.583	15	0.340	P293S	113	-3.293
ENSMUST00000106360	Olf1331 (BL)	0.583	15	0.340	R132S	1564	-3.260
ENSMUST00000213228	Olf194 (BL)	0.583	15	0.340	T9S	815	-3.174
ENSMUST00000216519	Olf194 (BL)	0.583	15	0.340	T9S	815	-3.174
ENSMUST00000115116	Muc20 (BL)	0.583	15	0.340	P293S	102	-3.160
ENSMUST00000044851	Pcdhga12 (BL)	0.583	15	0.340	E61K	938	-3.158
ENSMUST00000100054	Nhsl1 (BL)	0.583	15	0.340	R77Q	450	-3.112
ENSMUST00000212404	Spire2 (BL)	0.583	15	0.340	R234Q	248	-3.099
ENSMUST00000029158	Aar2 (BL)	0.583	15	0.340	S166F	270	-3.040
ENSMUST00000109570	Aar2 (BL)	0.583	15	0.340	S166F	270	-3.040
ENSMUST00000037341	Nhsl1 (BL)	0.583	15	0.340	R125Q	449	-3.012
ENSMUST00000152136	Iqck (BL)	0.583	15	0.340	A49V	134	-2.980
ENSMUST00000208658	Iqck (BL)	0.583	15	0.340	A49V	134	-2.980
ENSMUST00000203169	Wdr49 (BL)	0.583	15	0.340	S121L	193	-2.866
ENSMUST00000039173	2310035C23Rik (BL)	0.583	15	0.340	L82P	705	-2.690
ENSMUST00000190501	2310035C23Rik (BL)	0.583	15	0.340	L82P	705	-2.690
ENSMUST00000086721	2310035C23Rik (BL)	0.583	15	0.340	L82P	705	-2.672
ENSMUST00000109370	Svs3a (BL)	0.583	15	0.340	A70E	44	-2.632

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ENSMUST00000068996	9430038I01Rik (BL)	0.583	15	0.340	A95S	50	-2.589
ENSMUST00000030069	Ptgr1 (BL)	0.583	15	0.340	H301Y	352	-2.577
ENSMUST00000072431	S100pbp (BL)	0.583	15	0.340	T83I	229	-2.573
ENSMUST00000106061	S100pbp (BL)	0.583	15	0.340	T83I	229	-2.573
ENSMUST00000117350	S100pbp (BL)	0.583	15	0.340	T83I	229	-2.573
ENSMUST00000117497	S100pbp (BL)	0.583	15	0.340	T83I	229	-2.573
ENSMUST00000117965	S100pbp (BL)	0.583	15	0.340	T83I	229	-2.573
ENSMUST00000126201	Polg2 (BL)	0.583	15	0.340	L53F	236	-2.563
ENSMUST00000134029	Polg2 (BL)	0.583	15	0.340	L53F	236	-2.563
ENSMUST00000155107	Polg2 (BL)	0.583	15	0.340	L53F	236	-2.563
ENSMUST00000020668	Havcr2 (BL)	0.583	15	0.340	V28F	135	-2.558
ENSMUST00000117404	9430038I01Rik (BL)	0.583	15	0.340	A95S	46	-2.507
ENSMUST00000120340	9430038I01Rik (BL)	0.583	15	0.340	A95S	45	-2.507
ENSMUST00000098274	Gucy2d (BL)	0.556	16	0.309	G728_E730del	222	-10.448
ENSMUST00000206435	Gucy2d (BL)	0.556	16	0.309	G729_E731del	222	-10.448
ENSMUST00000049787	Lrrn4 (BL)	0.556	16	0.309	T299_G300del	97	-9.155
ENSMUST00000175734	Psd2 (BL)	0.556	16	0.309	P558L	355	-7.856
ENSMUST00000176873	Psd2 (BL)	0.556	16	0.309	P558L	355	-7.856
ENSMUST00000177432	Psd2 (BL)	0.556	16	0.309	P554L	357	-7.832
ENSMUST00000115716	Psd2 (BL)	0.556	16	0.309	P557L	357	-7.823
ENSMUST00000041231	Psme4 (BL)	0.556	16	0.309	C651Y	410	-7.705
ENSMUST00000099841	Olf1157 (BL)	0.556	16	0.309	F94S	926	-6.846
ENSMUST00000003599	Pcdhgb6 (BL)	0.556	16	0.309	R248W	898	-6.681
ENSMUST00000051111	Olf905 (BL)	0.556	16	0.309	G233D	1434	-6.510
ENSMUST00000214377	Olf905 (BL)	0.556	16	0.309	G233D	1434	-6.510
ENSMUST00000085708	Stat2 (BL)	0.556	16	0.309	N416del	215	-6.264
ENSMUST00000030524	Pla2g5 (BL)	0.556	16	0.309	G34R	162	-5.950
ENSMUST00000102511	Pla2g5 (BL)	0.556	16	0.309	G34R	162	-5.950
ENSMUST00000102512	Pla2g5 (BL)	0.556	16	0.309	G34R	162	-5.950
ENSMUST00000102513	Pla2g5 (BL)	0.556	16	0.309	G34R	162	-5.950
ENSMUST00000070755	Rad54b (BL)	0.556	16	0.309	R433T	342	-5.858
ENSMUST00000032433	Smco2 (BL)	0.556	16	0.309	L23del	106	-5.850
ENSMUST00000148851	Zfp105 (BL)	0.556	16	0.309	S39Y	89	-5.789
ENSMUST00000032396	Lrmp (BL)	0.556	16	0.309	R438G	197	-5.499
ENSMUST00000159258	Lmo7 (BL)	0.556	16	0.309	R391W	508	-5.439
ENSMUST00000196964	Ccdc144b (BL)	0.556	16	0.309	E91A	233	-5.364
ENSMUST00000062322	Pprc1 (BL)	0.556	16	0.309	P509L	433	-5.274
ENSMUST00000111899	Pprc1 (BL)	0.556	16	0.309	P508L	433	-5.274
ENSMUST00000099392	Pprc1 (BL)	0.556	16	0.309	P505L	417	-5.166
ENSMUST00000063262	Zfp68 (BL)	0.556	16	0.309	H180Q	144	-4.717
ENSMUST00000110905	Zfp68 (BL)	0.556	16	0.309	H180Q	144	-4.717
ENSMUST00000095349	Ubxn8 (BL)	0.556	16	0.309	T241N	219	-4.509
ENSMUST00000085852	Zfp68 (BL)	0.556	16	0.309	H142Q	139	-4.453
ENSMUST00000017561	Plxdc1 (BL)	0.556	16	0.309	E272A	490	-4.452
ENSMUST00000107565	Plxdc1 (BL)	0.556	16	0.309	E279A	490	-4.452
ENSMUST00000032518	Clec2h (BL)	0.556	16	0.309	N168S	83	-4.400
ENSMUST00000053652	Tas2r105 (BL)	0.556	16	0.309	I44T	126	-4.325
ENSMUST00000164936	Zfp493 (BL)	0.556	16	0.309	G143D	169	-4.180
ENSMUST00000080171	Cyp2c50 (BL)	0.556	16	0.309	S336R	582	-4.151
ENSMUST00000049178	Cyp2c37 (BL)	0.556	16	0.309	C372S	597	-4.139
ENSMUST00000068094	Cyp2c50 (BL)	0.556	16	0.309	S277R	460	-4.113
ENSMUST00000213223	Olf298 (BL)	0.556	16	0.309	R120H	170	-4.023
ENSMUST00000216968	Olf298 (BL)	0.556	16	0.309	R120H	170	-4.023
ENSMUST00000217110	Olf298 (BL)	0.556	16	0.309	R120H	170	-4.023
ENSMUST00000168438	Pde4dip (BL)	0.556	16	0.309	D1066N	741	-3.973
ENSMUST00000087605	Myo1f (BL)	0.556	16	0.309	G899S	671	-3.912
ENSMUST00000072363	Kprp (BL)	0.556	16	0.309	C94Y	87	-3.894
ENSMUST00000090750	Pde4dip (BL)	0.556	16	0.309	D1066N	742	-3.873
ENSMUST00000065781	Tas2r107 (BL)	0.556	16	0.309	L236F	134	-3.872
ENSMUST00000166644	Ccdc144b (BL)	0.556	16	0.309	E91A	181	-3.752

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ENSMUST00000200469	Ccdc144b (BL)	0.556	16	0.309	E91A	181	-3.752
ENSMUST00000215365	Olf295 (BL)	0.556	16	0.309	L11F	261	-3.693
ENSMUST00000097992	Focad (BL)	0.556	16	0.309	Y756F	348	-3.666
ENSMUST00000159342	Focad (BL)	0.556	16	0.309	Y670F	350	-3.637
ENSMUST00000216144	Olf1231 (BL)	0.556	16	0.309	F245C	1517	-3.611
ENSMUST00000076521	Irf6 (BL)	0.556	16	0.309	P119T	334	-3.565
ENSMUST00000179162	Fer1l5 (BL)	0.556	16	0.309	E904K	191	-3.465
ENSMUST00000131066	Cage1 (BL)	0.556	16	0.309	L188F	160	-3.377
ENSMUST00000028691	Arfgap2 (BL)	0.556	16	0.309	D481N	740	-3.251
ENSMUST00000080008	Arfgap2 (BL)	0.556	16	0.309	D467N	740	-3.251
ENSMUST00000076119	Tas2r125 (BL)	0.556	16	0.309	K261N	80	-3.244
ENSMUST00000053215	Pik3cg (BL)	0.556	16	0.309	P262S	368	-3.210
ENSMUST00000085469	Pik3cg (BL)	0.556	16	0.309	P262S	368	-3.210
ENSMUST00000156904	Pik3cg (BL)	0.556	16	0.309	P262S	368	-3.210
ENSMUST00000220366	Pik3cg (BL)	0.556	16	0.309	P262S	368	-3.210
ENSMUST00000042220	Naip6 (BL)	0.556	16	0.309	I538S	214	-3.187
ENSMUST00000118574	Naip6 (BL)	0.556	16	0.309	I538S	214	-3.187
ENSMUST00000074969	Cage1 (BL)	0.556	16	0.309	L188F	171	-3.177
ENSMUST00000110233	Cage1 (BL)	0.556	16	0.309	L188F	171	-3.177
ENSMUST00000043042	Tmco4 (BL)	0.556	16	0.309	M81I	348	-3.126
ENSMUST00000050949	Tmco4 (BL)	0.556	16	0.309	M81I	348	-3.126
ENSMUST00000108653	Nlrp12 (BL)	0.556	16	0.309	G772D	339	-3.126
ENSMUST00000107979	Fam205a1 (BL)	0.556	16	0.309	V667F	140	-3.036
ENSMUST00000091014	Map9 (BL)	0.556	10	0.402	R179Q	191	-2.986
ENSMUST00000195640	Map9 (BL)	0.556	10	0.402	R179Q	191	-2.986
ENSMUST00000039412	Mcp1 (BL)	0.556	14	0.340	E615T	254	-2.981
ENSMUST00000041633	Tap1 (BL)	0.556	16	0.309	D277G	245	-2.871
ENSMUST00000111623	Ppfbp1 (BL)	0.556	16	0.309	P371L	1078	-2.840
ENSMUST00000109937	Clmn (BL)	0.556	16	0.309	E665K	250	-2.809
ENSMUST0000016631	Ppfbp1 (BL)	0.556	16	0.309	P360L	1079	-2.807
ENSMUST00000121146	Tdrd5 (BL)	0.556	16	0.309	E726G	243	-2.638
ENSMUST00000170086	Tap1 (BL)	0.556	16	0.309	D277G	246	-2.638
ENSMUST00000109936	Clmn (BL)	0.556	16	0.309	E665K	276	-2.631
ENSMUST00000109800	Ccm2l (BL)	0.556	16	0.309	P472L	222	-2.521
ENSMUST00000023138	Shisa9 (BL)	0.556	16	0.309	A302V	371	-2.507
ENSMUST00000109732	Zfp429 (BL)	0.528	17	0.279	C264R	97	-9.750
ENSMUST00000060270	Zfp473 (BL)	0.528	17	0.279	C702Y	162	-9.465
ENSMUST00000118162	Zfp473 (BL)	0.528	17	0.279	C701Y	162	-9.465
ENSMUST00000120074	Zfp473 (BL)	0.528	17	0.279	C702Y	162	-9.465
ENSMUST00000120798	Zfp473 (BL)	0.528	17	0.279	C701Y	162	-9.465
ENSMUST00000141437	6430550D23Rik (BL)	0.528	17	0.279	D20Y	93	-8.575
ENSMUST00000139116	6430550D23Rik (BL)	0.528	17	0.279	D20Y	93	-8.503
ENSMUST00000140657	6430550D23Rik (BL)	0.528	17	0.279	D20Y	94	-8.489
ENSMUST00000109617	6430550D23Rik (BL)	0.528	17	0.279	D20Y	97	-8.178
ENSMUST00000095991	Olf172 (BL)	0.528	17	0.279	C75Y	626	-7.482
ENSMUST00000163808	Iltifb (BL)	0.528	17	0.279	R73W	225	-7.392
ENSMUST00000216026	Olf1214 (BL)	0.528	17	0.279	P252S	825	-7.385
ENSMUST00000217469	Olf1214 (BL)	0.528	17	0.279	P252S	825	-7.385
ENSMUST00000104874	Olf26 (BL)	0.528	17	0.279	G16E	1565	-7.167
ENSMUST00000039994	Cep250 (BL)	0.528	17	0.279	R847W	341	-7.011
ENSMUST00000094421	Cep250 (BL)	0.528	17	0.279	R827W	341	-7.011
ENSMUST00000109619	Cep250 (BL)	0.528	17	0.279	R848W	341	-7.011
ENSMUST00000036111	Mrps35 (BL)	0.528	17	0.279	Y216C	322	-6.834
ENSMUST00000131105	Tap2 (BL)	0.528	13	0.337	G57E	150	-6.730
ENSMUST00000124501	Tex15 (BL)	0.528	17	0.279	F157C	116	-6.701
ENSMUST00000197502	Supt20 (BL)	0.528	17	0.279	R11C	1097	-6.498
ENSMUST00000162316	Apopt1 (BL)	0.528	17	0.279	Y63C	167	-6.348
ENSMUST00000170552	Supt20 (BL)	0.528	17	0.279	R11C	1099	-6.311
ENSMUST00000199674	Supt20 (BL)	0.528	17	0.279	R11C	1100	-6.311
ENSMUST00000200439	Supt20 (BL)	0.528	17	0.279	R11C	1099	-6.311

Transcript	Gene	A = Consensus score (=strains/36)	B = BL/6J-like strains	Total score = A x (1-B/36)	AA Mutation	Supporting Sequences	PROVEAN Score
ENSMUST00000087399	Tnxb (BL)	0.528	17	0.279	G2414E	164	-6.111
ENSMUST00000153281	Ttc9c (BL)	0.528	17	0.279	D73H	281	-6.009
ENSMUST00000163220	Apopt1 (BL)	0.528	17	0.279	Y63C	246	-5.840
ENSMUST00000088092	Ttc9c (BL)	0.528	17	0.279	D73H	283	-5.544
ENSMUST00000096751	Ttc9c (BL)	0.528	17	0.279	D73H	283	-5.544
ENSMUST00000066708	Dmp1 (BL)	0.528	17	0.279	G116D	528	-5.508
ENSMUST00000194418	Pcdhga4 (BL)	0.528	17	0.279	P159L	867	-5.395
ENSMUST00000032441	Ccdc91 (BL)	0.528	17	0.279	E324G	448	-5.369
ENSMUST00000040519	Apopt1 (BL)	0.528	17	0.279	Y63C	182	-5.196
ENSMUST00000036618	Stab1 (BL)	0.528	17	0.279	D942N	261	-4.765
ENSMUST00000148681	Hp1bp3 (BL)	0.528	17	0.279	D33G	367	-4.749
ENSMUST00000144908	Gm13762 (BL)	0.528	17	0.279	H192Y	839	-4.523
ENSMUST00000168169	Gm13762 (BL)	0.528	17	0.279	H192Y	839	-4.523
ENSMUST00000017544	Stac2 (BL)	0.528	17	0.279	E181A	442	-4.478
ENSMUST00000163658	Vmn1r69 (BL)	0.528	17	0.279	L273Q	103	-4.399
ENSMUST00000070531	Uts2b (BL)	0.528	17	0.279	F55L	186	-4.395
ENSMUST00000223266	A530016L24Rik (BL)	0.528	17	0.279	R17C	100	-4.309
ENSMUST00000025197	Tap2 (BL)	0.528	13	0.337	G57E	193	-4.242
ENSMUST00000057465	A530016L24Rik (BL)	0.528	17	0.279	R17C	96	-4.163
ENSMUST00000002979	Lamb1 (BL)	0.528	17	0.279	T207A	389	-3.909
ENSMUST00000029419	Veph1 (BL)	0.528	17	0.279	R739H	439	-3.895
ENSMUST00000035433	Hesx1 (BL)	0.528	17	0.279	D55G	319	-3.884
ENSMUST00000114988	Fam234a (BL)	0.528	17	0.279	F489L	277	-3.723
ENSMUST00000118487	Fam234a (BL)	0.528	17	0.279	F489L	277	-3.723
ENSMUST00000022499	Rnaseh2b (BL)	0.528	17	0.279	P239T	487	-3.534
ENSMUST00000030541	Hp1bp3 (BL)	0.528	17	0.279	D197G	397	-3.515
ENSMUST00000097836	Hp1bp3 (BL)	0.528	17	0.279	D159G	397	-3.515
ENSMUST00000105825	Hp1bp3 (BL)	0.528	17	0.279	D159G	397	-3.515
ENSMUST00000105826	Hp1bp3 (BL)	0.528	17	0.279	D197G	397	-3.515
ENSMUST00000105827	Hp1bp3 (BL)	0.528	17	0.279	D197G	397	-3.515
ENSMUST00000165861	Hp1bp3 (BL)	0.528	17	0.279	D197G	397	-3.515
ENSMUST00000021628	Akr1c21 (BL)	0.528	17	0.279	R91H	675	-3.510
ENSMUST00000044003	Abca6 (BL)	0.528	17	0.279	E495K	158	-3.495
ENSMUST00000114054	Cldn34d (BL)	0.528	17	0.279	T17A	88	-3.457
ENSMUST00000193565	Gm37596 (BL)	0.528	17	0.279	K265E	769	-3.451
ENSMUST00000027178	Als2 (BL)	0.528	17	0.279	S469L	438	-3.380
ENSMUST00000163058	Als2 (BL)	0.528	17	0.279	S469L	438	-3.380
ENSMUST00000223285	Akr1c21 (BL)	0.528	17	0.279	R91H	618	-3.308
ENSMUST00000088294	Acrbp (BL)	0.528	17	0.279	H201R	154	-3.285
ENSMUST00000097737	Pusl1 (BL)	0.528	17	0.279	F18L	169	-3.255
ENSMUST00000053289	Zfp748 (BL)	0.528	17	0.279	D65N	123	-3.226
ENSMUST00000106026	Zfp995 (BL)	0.528	17	0.279	V134A	134	-3.208
ENSMUST00000190066	Zfp995 (BL)	0.528	17	0.279	V134A	134	-3.208
ENSMUST00000112414	Acrbp (BL)	0.528	17	0.279	H201R	156	-3.138
ENSMUST00000179364	Smim18 (BL)	0.528	17	0.279	Y14_Q15del	192	-3.051
ENSMUST00000063980	Zkscan7 (BL)	0.528	17	0.279	T704I	480	-3.029
ENSMUST00000044642	Micall2 (BL)	0.528	17	0.279	S331I	131	-3.003
ENSMUST00000141518	Fblim1 (BL)	0.528	17	0.279	R159I	173	-3.002
ENSMUST00000037811	Apob (BL)	0.528	17	0.279	K2254N	194	-2.935
ENSMUST00000179801	Gm7694 (BL)	0.528	17	0.279	A111V	303	-2.932
ENSMUST00000170773	Micall2 (BL)	0.528	17	0.279	S248I	146	-2.844
ENSMUST00000126172	Ttc29 (BL)	0.528	17	0.279	R11H	131	-2.834
ENSMUST00000029822	Tacr3 (BL)	0.528	17	0.279	S431F	594	-2.779
ENSMUST00000087853	Prb1 (BL)	0.528	17	0.279	P214L	120	-2.779
ENSMUST00000029155	Epb41l1 (BL)	0.528	17	0.279	F142Y	855	-2.769
ENSMUST00000103135	Epb41l1 (BL)	0.528	17	0.279	F142Y	855	-2.769
ENSMUST00000103136	Epb41l1 (BL)	0.528	17	0.279	F142Y	855	-2.769
ENSMUST00000103137	Epb41l1 (BL)	0.528	17	0.279	F142Y	855	-2.769
ENSMUST00000109574	Epb41l1 (BL)	0.528	17	0.279	F142Y	829	-2.769
ENSMUST00000109577	Epb41l1 (BL)	0.528	17	0.279	F142Y	835	-2.766

Transcript	Gene	A = Consensus score (=strains/36)	B = BL/6J-like strains	Total score = A x (1-B/36)	AA Mutation	Supporting Sequences	PROVEAN Score
ENSMUST00000080518	Sbsn (BL)	0.528	17	0.279	N96S	152	-2.721
ENSMUST00000078409	Trim61 (BL)	0.528	17	0.279	E185K	178	-2.674
ENSMUST00000109572	Epb41l1 (BL)	0.528	17	0.279	F142Y	848	-2.627
ENSMUST00000132981	Crat (BL)	0.528	17	0.279	H49Y	457	-2.616
ENSMUST0000004203	Ppan (BL)	0.528	17	0.279	P411Q	141	-2.589
ENSMUST00000169504	Tdrd3 (BL)	0.528	17	0.279	F559V	452	-2.502
ENSMUST0000032696	Zfp93 (BL)	0.472	13	0.302	S295R	457	-3.208
ENSMUST00000108438	Zfp93 (BL)	0.472	13	0.302	S295R	457	-3.208
ENSMUST0000040828	H2-Ab1 (BL)	0.417	11	0.290	K39M	2431	-4.575