

Supplemental Table 1. Genes and single nucleotide polymorphisms (SNPs) in pro- and anti-inflammatory cytokine genes analyzed for morning and evening fatigue

Gene	SNP	Position	Chr	MAF	Alleles	MORNING FATIGUE			EVENING FATIGUE		
						Chi Square	p-value	Model	Chi Square	p-value	Model
<i>IFNG1</i>	rs2069728	66834051	12	.079	G>A	7.915	.019	A	0.419	.811	A
<i>IFNG1</i>	rs2069727	66834490	12	.411	A>G	1.241	.538	A	3.942	.139	A
<i>IFNG1</i>	rs2069718	66836429	12	.442	C>T	0.976	.614	A	5.243	.073	A
<i>IFNG1</i>	rs1861493	66837463	12	.264	A>G	0.158	.924	A	FE	.025	D
<i>IFNG1</i>	rs1861494	66837676	12	.279	T>C	0.115	.944	A	3.743	.155	A
<i>IFNG1</i>	rs2069709	66839970	12	.008	G>T	n/a	n/a	n/a	n/a	n/a	n/a
<i>IFNG1</i>	HapA3		12			0.158	.924		6.013	.049	
<i>IFNG1</i>	HapA5		12			1.241	.538		3.942	.139	
<i>IFNGR1</i>	rs9376268	137574444	6	.246	G>A	0.014	.993	A	2.759	.252	A
<i>IL1B</i>	rs1071676	106042060	2	.198	G>C	0.024	.988	A	5.368	.068	A
<i>IL1B</i>	rs1143643	106042929	2	.331	G>A	0.148	.929	A	1.125	.570	A
<i>IL1B</i>	rs1143642	106043180	2	.095	C>T	0.543	.762	A	0.831	.660	A
<i>IL1B</i>	rs1143634	106045017	2	.196	C>T	0.056	.973	A	5.612	.060	A
<i>IL1B</i>	rs1143633	106045094	2	.345	G>A	0.122	.941	A	1.427	.490	A
<i>IL1B</i>	rs1143630	106046282	2	.103	C>A	1.357	.507	A	FE	.041	D
<i>IL1B</i>	rs3917356	106046990	2	.432	G>A	3.932	.140	A	1.419	.492	A
<i>IL1B</i>	rs1143629	106048145	2	.353	T>C	4.557	.102	A	1.800	.407	A
<i>IL1B</i>	rs1143627	106049014	2	.390	T>C	4.170	.124	A	3.255	.196	A
<i>IL1B</i>	rs16944	106049494	2	.380	G>A	4.320	.115	A	1.755	.416	A

IL1B	rs1143623	106050452	2	.248	G>C	3.433	.180	A	1.727	.422	A
IL1B	rs13032029	106055022	2	.428	C>T	4.197	.123	A	1.392	.499	A
IL1B	HapA1					0.197	.906		1.311	.519	
IL1B	HapA3					FE	.861		FE	.445	
IL1B	HapA4					0.130	.937		1.153	.562	
IL1B	HapA5					0.030	.985		5.483	.064	
IL1B	HapB1					0.144	.931		2.779	.249	
IL1B	HapB7					2.770	.250		2.323	.313	
IL1B	HapB9					4.810	.090		1.351	.509	
IL1B	HapB11					1.018	.601		3.431	.180	
IL1R1	rs949963	96533648	2	.213	G>A	1.954	.376	A	0.616	.735	A
IL1R1	rs2228139	96545511	2	.066	C>G	1.422	.491	A	3.342	.188	A
IL1R1	rs3917320	96556738	2	.068	A>C	FE	.688	A	FE	.557	A
IL1R1	rs2110726	96558145	2	.333	C>T	0.205	.902	A	3.826	.148	A
IL1R1	rs3917332	96560387	2	.124	A>T	3.468	.177	A	0.718	.698	A
IL1R2	rs4141134	96370336	2	.401	T>C	2.723	.256	A	3.452	.178	A
IL1R2	rs11674595	96374804	2	.233	T>C	0.738	.691	A	0.535	.765	A
IL1R2	rs7570441	96380807	2	.393	G>A	0.250	.882	A	0.459	.795	A
IL1R2	HapA1					2.229	.328		4.432	.109	
IL1R2	HapA2					1.621	.445		0.745	.689	
IL1R2	HapA4					2.095	.351		3.603	.165	
IL2	rs1479923	119096993	4	.302	C>T	1.129	.569	A	0.789	.674	A

IL2	rs2069776	119098582	4	.244	T>C	0.382	.826	A	1.798	.407	A
IL2	rs2069772	119099739	4	.238	A>G	0.087	.957	A	1.027	.598	A
IL2	rs2069777	119103043	4	.054	C>T	FE	.506	A	FE	.748	A
IL2	rs2069763	119104088	4	.287	T>G	1.362	.506	A	1.042	.594	A
IL2	HapA1					0.343	.842		0.147	.929	
IL2	HapA2					0.132	.936		0.962	.618	
IL2	HapA3					0.206	.902		1.618	.445	
IL2	HapA5					1.129	.569		0.789	.674	
IL4	rs2243248	127200946	5	.101	T>G	0.012	.994	A	FE	.037	D
IL4	rs2243250	127201455	5	.260	C>T	n/a	n/a	n/a	n/a	n/a	n/a
IL4	rs2070874	127202011	5	.219	C>T	1.986	.371	A	1.004	.605	A
IL4	rs2227284	127205027	5	.399	C>A	2.949	.229	A	3.145	.208	A
IL4	rs2227282	127205481	5	.401	C>G	2.110	.348	A	2.374	.305	A
IL4	rs2243263	127205601	5	.124	C>G	FE	.873	A	FE	.067	A
IL4	rs2243266	127206091	5	.203	G>A	0.825	.662	A	0.563	.755	A
IL4	rs2243267	127206188	5	.205	G>C	0.891	.641	A	0.601	.740	A
IL4	rs2243274	127207134	5	.262	G>A	2.975	.226	A	0.398	.820	A
IL4	HapA1					1.716	.424		1.845	.397	
IL4	HapA10					0.807	.668		0.452	.798	
IL6	rs4719714	22643793	7	.196	A>T	6.650	.036	A	4.257	.119	A
IL6	rs2069827	22648536	7	.071	G>T	0.948	.623	A	0.681	.712	A
IL6	rs1800796	22649326	7	.095	C>G	n/a	n/a	n/a	n/a	n/a	n/a

<i>IL6</i>	rs1800795	22649725	7	.355	C>G	0.670	.715	A	FE	.018	R
<i>IL6</i>	rs2069835	22650951	7	.066	T>C	FE	.154	A	FE	.071	A
<i>IL6</i>	rs2066992	22651329	7	.091	G>T	n/a	n/a	n/a	n/a	n/a	n/a
<i>IL6</i>	rs2069840	22651652	7	.308	C>G	1.390	.499	A	1.380	.502	A
<i>IL6</i>	rs1554606	22651787	7	.405	G>T	0.307	.858	A	3.923	.141	A
<i>IL6</i>	rs2069845	22653229	7	.405	A>G	0.307	.858	A	3.923	.141	A
<i>IL6</i>	rs2069849	22654236	7	.039	C>T	n/a	n/a	n/a	n/a	n/a	n/a
<i>IL6</i>	rs2069861	22654734	7	.083	C>T	FE	.195	A	FE	.186	A
<i>IL6</i>	rs35610689	22656903	7	.242	A>G	3.232	.199	A	0.650	.723	A
<i>IL6</i>	HapA4					1.584	.453		1.448	.485	
<i>IL6</i>	HapA6					0.570	.752		5.303	.071	
<i>IL8</i>	rs4073	70417508	4	.498	T>A	0.824	.662	A	1.164	.559	A
<i>IL8</i>	rs2227306	70418539	4	.366	C>T	0.341	.843	A	1.361	.506	A
<i>IL8</i>	rs2227543	70419394	4	.374	C>T	0.528	.768	A	0.536	.765	A
<i>IL8</i>	HapA1					4.642	.098		2.045	.360	
<i>IL8</i>	HapA3					0.341	.843		1.361	.506	
<i>IL8</i>	HapA4					0.824	.662		1.164	.559	
<i>IL10</i>	rs3024505	177638230	1	.138	C>T	0.185	.912	A	2.071	.355	A
<i>IL10</i>	rs3024498	177639855	1	.236	A>G	2.044	.360	A	2.294	.318	A
<i>IL10</i>	rs3024496	177640190	1	.459	T>C	0.352	.838	A	0.217	.897	A
<i>IL10</i>	rs1878672	177642039	1	.452	G>C	0.292	.864	A	0.505	.777	A
<i>IL10</i>	rs3024492	177642438	1	.207	T>A	1.756	.416	A	1.542	.463	A

<i>IL10</i>	rs1518111	177642971	1	.267	G>A	0.268	.874	A	2.636	.268	A
<i>IL10</i>	rs1518110	177643187	1	.267	G>T	0.268	.874	A	2.636	.268	A
<i>IL10</i>	rs3024491	177643372	1	.448	G>T	0.730	.694	A	0.080	.961	A
<i>IL10</i>	HapA5					0.580	.748		1.839	.399	
<i>IL10</i>	HapA6					0.267	.875		2.695	.260	
<i>IL10</i>	HapA8					1.796	.407		1.529	.466	
<i>IL10</i>	HapA9					0.177	.915		2.094	.351	
<i>IL13</i>	rs1881457	127184713	5	.192	A>C	4.643	.098	A	0.627	.731	A
<i>IL13</i>	rs1800925	127185113	5	.227	C>T	5.212	.074	A	0.746	.689	A
<i>IL13</i>	rs2069743	127185579	5	.021	A>G	n/a	n/a	n/a	n/a	n/a	n/a
<i>IL13</i>	rs1295686	127188147	5	.252	G>A	0.691	.708	A	3.272	.195	A
<i>IL13</i>	rs20541	127188268	5	.174	C>T	0.514	.773	A	1.741	.419	A
<i>IL13</i>	HapA1					1.289	.525		4.652	.098	
<i>IL13</i>	HapA4					0.343	.842		1.973	.373	
<i>IL17A</i>	rs4711998	51881422	6	.293	G>A	0.027	.987	A	0.310	.856	A
<i>IL17A</i>	rs8193036	51881562	6	.255	T>C	3.347	.188	A	4.092	.129	A
<i>IL17A</i>	rs3819024	51881855	6	.374	A>G	0.022	.989	A	1.532	.465	A
<i>IL17A</i>	rs2275913	51882102	6	.345	G>A	2.204	.332	A	0.241	.886	A
<i>IL17A</i>	rs3804513	51884266	6	.027	A>T	n/a	n/a	n/a	n/a	n/a	n/a
<i>IL17A</i>	rs7747909	51885318	6	.225	G>A	0.757	.685	A	1.508	.470	A
<i>NFKB1</i>	rs3774933	103645369	4	.444	T>C	1.710	.425	A	1.635	.442	A
<i>NFKB1</i>	rs170731	103667933	4	.397	A>T	0.239	.887	A	0.998	.607	A

<i>NFKB1</i>	rs17032779	103685279	4	.023	T>C	n/a	n/a	n/a	n/a	n/a	n/a
<i>NFKB1</i>	rs230510	103695201	4	.366	T>A	1.604	.448	A	4.861	.088	A
<i>NFKB1</i>	rs230494	103706005	4	.477	A>G	1.282	.527	A	1.006	.605	A
<i>NFKB1</i>	rs4648016	103708706	4	.017	C>T	n/a	n/a	n/a	n/a	n/a	n/a
<i>NFKB1</i>	rs4648018	103709236	4	.025	G>C	n/a	n/a	n/a	n/a	n/a	n/a
<i>NFKB1</i>	rs3774956	103727564	4	.479	C>T	1.041	.594	A	1.009	.604	A
<i>NFKB1</i>	rs10489114	103730426	4	.025	A>G	n/a	n/a	n/a	n/a	n/a	n/a
<i>NFKB1</i>	rs4648068	103737343	4	.366	A>G	0.210	.900	A	0.751	.687	A
<i>NFKB1</i>	rs4648095	103746914	4	.052	T>C	FE	1.000	A	FE	.326	A
<i>NFKB1</i>	rs4648110	103752867	4	.205	T>A	0.043	.979	A	0.695	.706	A
<i>NFKB1</i>	rs4648135	103755716	4	.060	A>G	FE	1.000	A	FE	.545	A
<i>NFKB1</i>	rs4648141	103755947	4	.188	G>A	0.682	.711	A	0.517	.772	A
<i>NFKB1</i>	rs1609798	103756488	4	.337	C>T	0.239	.888	A	1.293	.524	A
<i>NFKB1</i>	HapA1					1.192	.551		4.719	.094	
<i>NFKB1</i>	HapA9					0.002	.999		0.573	.751	
<i>NFKB2</i>	rs12772374	104146901	10	.229	A>G	0.128	.938	A	1.764	.414	A
<i>NFKB2</i>	rs7897947	104147701	10	.085	T>G	3.183	.204	A	FE	.039	D
<i>NFKB2</i>	rs11574849	104149686	10	.317	G>A	0.501	.778	A	0.229	.892	A
<i>NFKB2</i>	rs1056890	104152760	10	.317	C>T	2.583	.275	A	3.939	.140	A
<i>TNFA</i>	rs2857602	31533378	6	.360	T>C	0.027	.987	A	0.628	.730	A
<i>TNFA</i>	rs1800683	31540071	6	.388	G>A	3.767	.152	A	3.559	.169	A
<i>TNFA</i>	rs2239704	31540141	6	.370	G>T	0.014	.993	A	0.550	.760	A

<i>TNFA</i>	rs2229094	31540556	6	.256	T>C	FE	.042	R	FE	.015	D
<i>TNFA</i>	rs1041981	31540784	6	.388	C>A	3.767	.152	A	3.559	.169	A
<i>TNFA</i>	rs1799964	31542308	6	.202	T>C	2.699	.259	A	4.354	.113	A
<i>TNFA</i>	rs1800750	31542963	6	.019	G>A	n/a	n/a	n/a	n/a	n/a	n/a
<i>TNFA</i>	rs1800629	31543031	6	.157	G>A	FE	.006	D	2.729	.256	A
<i>TNFA</i>	rs1800610	31543827	6	.105	C>T	1.434	.488	A	1.721	.423	A
<i>TNFA</i>	rs3093662	31544189	6	.072	A>G	FE	.006	D	FE	.031	D
<i>TNFA</i>	HapA1					2.627	.269		2.900	.235	
<i>TNFA</i>	HapA5					2.767	.251		3.811	.149	
<i>TNFA</i>	HapA8					0.023	.989		0.648	.723	

*Note.* A = additive model; Chr = chromosome; D = dominant model; Hap = haplotype, *IFNG* = interferon gamma; *IL* = interleukin; MAF = minor allele frequency; n/a = not assayed because SNP violated Hardy-Weinberg expectations ( $p < .001$ ) or because MAF was  $< .05$ ; *NFKB* = nuclear factor kappa beta; R = recessive model; *TNFA* = tumor necrosis factor alpha.