

S7 Table. The intronic rs5792235 variant's 3D interacting variants and their associated phenotypes

Variant	chr	BP*	Reference Allele	Alternative Allele	NHGRI/EBI GWAS hits	GENCODE genes	dbSNP functional annotation
rs102274	11	61790354	T	C	-	<i>TMEM258</i>	intronic
			T	C	Metabolic syndrome; P=6E-7; PMID: 20694148 Crohn's disease; P=2E-11; PMID: 21102463 Phospholipid levels (plasma); P=7E-64; PMID: 21829377 Phospholipid levels (plasma); P=8E-153; PMID: 21829377 Phospholipid levels (plasma); P=1E-203; PMID: 22359512 Metabolite levels; P=4E-264; PMID: 22916037	<i>TMEM258</i>	intronic
rs102275	11	61790331			Oleic acid (18:1n-9) plasma levels; P=2E-32; PMID: 23362303 Palmitoleic acid (16:1n-7) plasma levels; P=7E-13; PMID: 23362303 Stearic acid (18:0) plasma levels; P=1E-20; PMID: 23362303 Plasma omega-6 polyunsaturated fatty acid levels (arachidonic acid); P=7E-147; PMID: 24823311 Trans fatty acid levels; P=2E-13; PMID: 25646338		
rs108499	11	61779765	C	T	Trans fatty acid levels; P=5E-11; PMID: 25646338	<i>MYRF</i>	intronic
rs11320420	11	61774534	GA	G	-	<i>MYRF</i>	intronic
rs143352979	11	61853156	7-mer	A	-	<i>FADS2</i>	intronic
			A	G	Response to statin therapy; P=7E-6; PMID: 20339536 Metabolic syndrome; P=4E-7; PMID: 20694148 Phospholipid levels (plasma); P=3E-152; PMID: 21829377 Phospholipid levels (plasma); P=3E-63; PMID: 21829377 Trans fatty acid levels; P=5E-14; PMID: 25646338	<i>FADS2</i>	intronic
rs1535	11	61830500			Trans fatty acid levels; P=5E-12; PMID: 25646338		
rs174528	11	61776027	T	C	Trans fatty acid levels; P=4E-12; PMID: 25646338	<i>MYRF</i>	intronic
rs174529	11	61776489	T	C	-	<i>MYRF</i>	intronic
rs174530	11	61779120	A	G	-	<i>MYRF</i>	intronic
rs174533	11	61781553	G	A	-	<i>MYRF</i>	intronic
rs174534	11	61781986	A	G	Trans fatty acid levels; P=4E-11; PMID: 25646338	<i>MYRF</i>	intronic
			T	C	Phospholipid levels (plasma); P=1E-151; PMID: 21829377 Phospholipid levels (plasma); P=6E-58; PMID: 21829377 Blood metabolite levels; P=2E-94; PMID: 24816252 Blood metabolite levels; P=3E-36; PMID: 24816252 Red blood cell fatty acid levels; P=2E-12; PMID: 25500335 Trans fatty acid levels; P=1E-13; PMID: 25646338	<i>MYRF</i>	synonymous
rs174535	11	61783884					
rs174536	11	61784455	A	C	Phospholipid levels (plasma); P=1E-63; PMID: 21829377 Trans fatty acid levels; P=1E-13; PMID: 25646338	<i>MYRF</i>	intronic

rs174537	11	61785208	G	T	Colorectal cancer; P=9E-21; PMID: 24836286 Trans fatty acid levels; P=8E-14; PMID: 25646338	<i>MYRF</i>	intronic
rs174538	11	61792609	G	A	Phospholipid levels (plasma); P=5E-58; PMID: 21829377 Blood metabolite levels; P=9E-14; PMID: 24816252 Trans fatty acid levels; P=1E-12; PMID: 25646338	<i>TMEM258</i>	5'-UTR
rs174541	11	61798436	T	C	Metabolite levels; P=3E-9; PMID: 23378610 Red blood cell fatty acid levels; P=3E-19; PMID: 25500335 Trans fatty acid levels; P=4E-13; PMID: 25646338	<i>FADS2</i>	
rs174544	11	61800281	C	A	-	<i>FADS1</i>	3'-UTR
rs174545	11	61801834	C	G	Red blood cell fatty acid levels; P=8E-90; PMID: 25500335 Trans fatty acid levels; P=7E-14; PMID: 25646338	<i>FADS1</i>	3'-UTR
rs174546	11	61802358	C	T	LDL cholesterol; P=1E-7; PMID: 19060910 Cholesterol total; P=2E-22; PMID: 20686565 HDL cholesterol; P=2E-22; PMID: 20686565 LDL cholesterol; P=1E-21; PMID: 20686565 Triglycerides; P=5E-24; PMID: 20686565 Metabolic syndrome; P=6E-7; PMID: 20694148 Cholesterol total; P=3E-37; PMID: 24097068 HDL cholesterol; P=8E-28; PMID: 24097068 LDL cholesterol; P=2E-39; PMID: 24097068 Triglycerides; P=7E-38; PMID: 24097068 Trans fatty acid levels; P=6E-14; PMID: 25646338	<i>FADS1</i>	3'-UTR
rs174547	11	61803311	T	C	HDL cholesterol; P=2E-12; PMID: 19060906 Triglycerides; P=2E-14; PMID: 19060906 Metabolite levels; P=7E-179; PMID: 20037589 Resting heart rate; P=2E-9; PMID: 20639392 Phospholipid levels (plasma); P=3E-64; PMID: 21829377 Phospholipid levels (plasma); P=4E-154; PMID: 21829377 Metabolic traits; P=9E-116; PMID: 21886157 Lipid metabolism phenotypes; P=8E-262; PMID: 22286219 Comprehensive strength and appendicular lean mass; P=2E-7; PMID: 22960237 Plasma omega-6 polyunsaturated fatty acid levels (arachidonic acid); P=3E-971; PMID: 24823311 Plasma omega-6 polyunsaturated fatty acid levels (gamma-linolenic acid); P=2E-72; PMID: 24823311 Height; P=6E-18; PMID: 25429064 Trans fatty acid levels; P=6E-14; PMID: 25646338	<i>FADS1</i>	intronic

rs174548	11	61803876	C	G	Metabolite levels; P=5E-8; PMID: 19043545 HDL cholesterol; P=1E-12; PMID: 20864672 Triglycerides; P=5E-14; PMID: 20864672 Hematology traits; P=4E-8; PMID: 23303382 Blood metabolite levels; P=1E-84; PMID: 24816252 Blood metabolite ratios; P=2E-361; PMID: 24816252 Trans fatty acid levels; P=5E-15; PMID: 25646338	<i>FADS1</i>	intronic
rs174549	11	61803910	G	A	Comprehensive strength and appendicular lean mass; P=8E-7; PMID: 22960237 Metabolite levels; P=2E-30; PMID: 23281178 Heart rate; P=1E-22; PMID: 23583979 Laryngeal squamous cell carcinoma; P=1E-20; PMID: 25194280 Red blood cell fatty acid levels; P=2E-10; PMID: 25500335 Red blood cell fatty acid levels; P=4E-10; PMID: 25500335 Trans fatty acid levels; P=5E-15; PMID: 25646338	<i>FADS1</i>	intronic
rs174550	11	61804006	T	C	Fasting glucose-related traits; P=2E-15; PMID: 20081858 Fasting glucose-related traits; P=5E-13; PMID: 20081858 Phospholipid levels (plasma); P=1E-57; PMID: 21829377 Fasting glucose-related traits (interaction with BMI); P=2E-9; PMID: 22581228 Blood metabolite levels; P=7E-24; PMID: 24816252 Plasma omega-6 polyunsaturated fatty acid levels (adrenic acid); P=4E-140; PMID: 24823311 Plasma omega-6 polyunsaturated fatty acid levels (linoleic acid); P=4E-274; PMID: 24823311 Fasting plasma glucose; P=3E-6; PMID: 25187374 Red blood cell fatty acid levels; P=6E-43; PMID: 25500335 Trans fatty acid levels; P=6E-14; PMID: 25646338	<i>FADS1</i>	intronic
rs174551	11	61806212	T	C	-	<i>FADS1</i>	intronic
rs174553	11	61807686	A	G,T	-	<i>FADS1</i>	intronic
rs174554	11	61811991	A	G	-	<i>FADS1</i>	intronic
rs174555	11	61812288	T	C	Plasma omega-6 polyunsaturated fatty acid levels (dihomo-gamma-linolenic acid); P=5E-168; PMID: 24823311 Trans fatty acid levels; P=6E-15; PMID: 25646338	<i>FADS1</i>	intronic
rs174556	11	61813163	C	T	Blood metabolite levels; P=2E-22; PMID: 24816252 Trans fatty acid levels; P=3E-14; PMID: 25646338	<i>FADS1</i>	intronic
rs174557	11	61813896	A	G	-	<i>RP11-467L20.7</i>	intronic
rs174559	11	61814184	G	A	-	<i>RP11-467L20.7</i>	intronic

rs174560	11	61814292	T	C	-	<i>RP11-467L20.7</i>	intronic
rs174561	11	61815236	T	C	-	<i>MIR1908</i>	intronic
rs174562	11	61817672	A	G	-	<i>FADS1</i>	-
rs174564	11	61820833	A	G	-	<i>FADS1</i>	-
rs174565	11	61824164	C	G	-	<i>FADS1</i>	-
rs174566	11	61824890	A	G	-	<i>FADS1</i>	-
rs174567	11	61825533	A	G	-	<i>FADS1</i>	-
rs174568	11	61826344	C	T	-	<i>FADS1</i>	-
			C	T	Cholesterol total; P=2E-10; PMID: 19060911 HDL cholesterol; P=4E-6; PMID: 19060911 LDL cholesterol; P=4E-13; PMID: 19060911 Glycated hemoglobin levels; P=2E-7; PMID: 24647736 Trans fatty acid levels; P=1E-7; PMID: 25646338	<i>FADS2</i>	intronic
rs174570	11	61829740					
rs174574	11	61832870	A	C	Phospholipid levels (plasma); P=4E-55; PMID: 21829377 Trans fatty acid levels; P=3E-14; PMID: 25646338	<i>FADS2</i>	intronic
rs174576	11	61836038	C	A	Trans fatty acid levels; P=3E-14; PMID: 25646338	<i>FADS2</i>	intronic
			C	A	P wave duration; P=3E-8; PMID: 24850809	<i>FADS2</i>	intronic
rs174577	11	61837342			Iron status biomarkers (transferrin levels); P=2E-17; PMID: 25352340 Trans fatty acid levels; P=4E-14; PMID: 25646338		
			T	A	Blood metabolite levels; P=3E-24; PMID: 24816252 Blood metabolite levels; P=6E-42; PMID: 24816252 Trans fatty acid levels; P=5E-14; PMID: 25646338	<i>FADS2</i>	intronic
rs174578	11	61838027					
rs174580	11	61839170	A	G	-	<i>FADS2</i>	intronic
rs174581	11	61839211	G	A	-	<i>FADS2</i>	intronic
			C	T	Response to statin therapy; P=3E-6; PMID: 20339536 QT interval; P=8E-11; PMID: 24952745 Trans fatty acid levels; P=2E-13; PMID: 25646338	<i>FADS2</i>	intronic
rs174583	11	61842278					
rs174584	11	61843278	G	A	-	<i>FADS2</i>	intronic
rs174592	11	61851136	A	G	-	<i>FADS2</i>	intronic
rs174594	11	61852357	C	A	-	<i>FADS2</i>	intronic
rs174598	11	61853722	G	A	-	<i>FADS2</i>	intronic
rs174599	11	61854084	G	C	-	<i>FADS2</i>	intronic
rs174600	11	61854755	T	C	-	<i>FADS2</i>	intronic

			C	T	Liver enzyme levels (alkaline phosphatase); P=3E-9; PMID: 22001757	<i>FADS2</i>	intronic
rs174601	11	61855668			Blood metabolite levels; P=8E-16; PMID: 24816252 Red blood cell fatty acid levels; P=3E-305; PMID: 25500335 Trans fatty acid levels; P=3E-13; PMID: 25646338		
rs28456	11	61822009	A	G	-	<i>FADS1</i>	-
rs35473591	11	61818856	C	CT	-	<i>FADS1</i>	-
rs3834458	11	61827448	CT	C	-	<i>FADS1</i>	-
			G	T	Phospholipid levels (plasma); P=1E-139; PMID: 21829377 Phospholipid levels (plasma); P=6E-55; PMID: 21829377 Phospholipid levels (plasma); P=9E-60; PMID: 21829377 Platelet counts; P=3E-10; PMID: 22139419	<i>FEN1</i>	3'-UTR
rs4246215	11	61796827			Inflammatory bowel disease; P=2E-15; PMID: 23128233 Red blood cell fatty acid levels; P=1E-9; PMID: 25500335 Trans fatty acid levels; P=5E-13; PMID: 25646338		
rs509360	11	61781087	A	G	Trans fatty acid levels; P=6E-10; PMID: 25646338	<i>MYRF</i>	intronic
rs57668028	11	61824523	GAA	G	-	<i>FADS1</i>	-
rs5792239	11	61846954	CT	C	-	<i>FADS2</i>	intronic
rs72643557	11	61811955	C	T	-	<i>FADS1</i>	intronic
rs72643559	11	61852802	T	C	-	<i>FADS2</i>	intronic
rs7394579	11	61813978	A	G	-	<i>RP11-467L20.7</i>	intronic
rs97384	11	61856709	T	C	-	<i>FADS2</i>	intronic
rs99780	11	61829161	C	T	-	<i>FADS1</i>	intronic

The NHGRI/EBI GWAS hits column lists the GWAS associated traits, P values and PubMed IDs.

*hg38

BP - basepair; EBI - European Bioinformatics Institute; GWAS - genome-wide association study; NHGRI - National Human Genome Research Institute; PMID - PubMed ID; UTR - untranslated region.