

Genome-Wide Association Studies of Estimated Fatty Acid Desaturase Activity in Serum and Adipose Tissue in Elderly Individuals: Associations with Insulin Sensitivity

Matti Marklund, Andrew Morris, Anubha Mahajan, Erik Ingelsson, Cecilia Lindgren, Lars Lind and Ulf Risérus

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Supplementary Figures

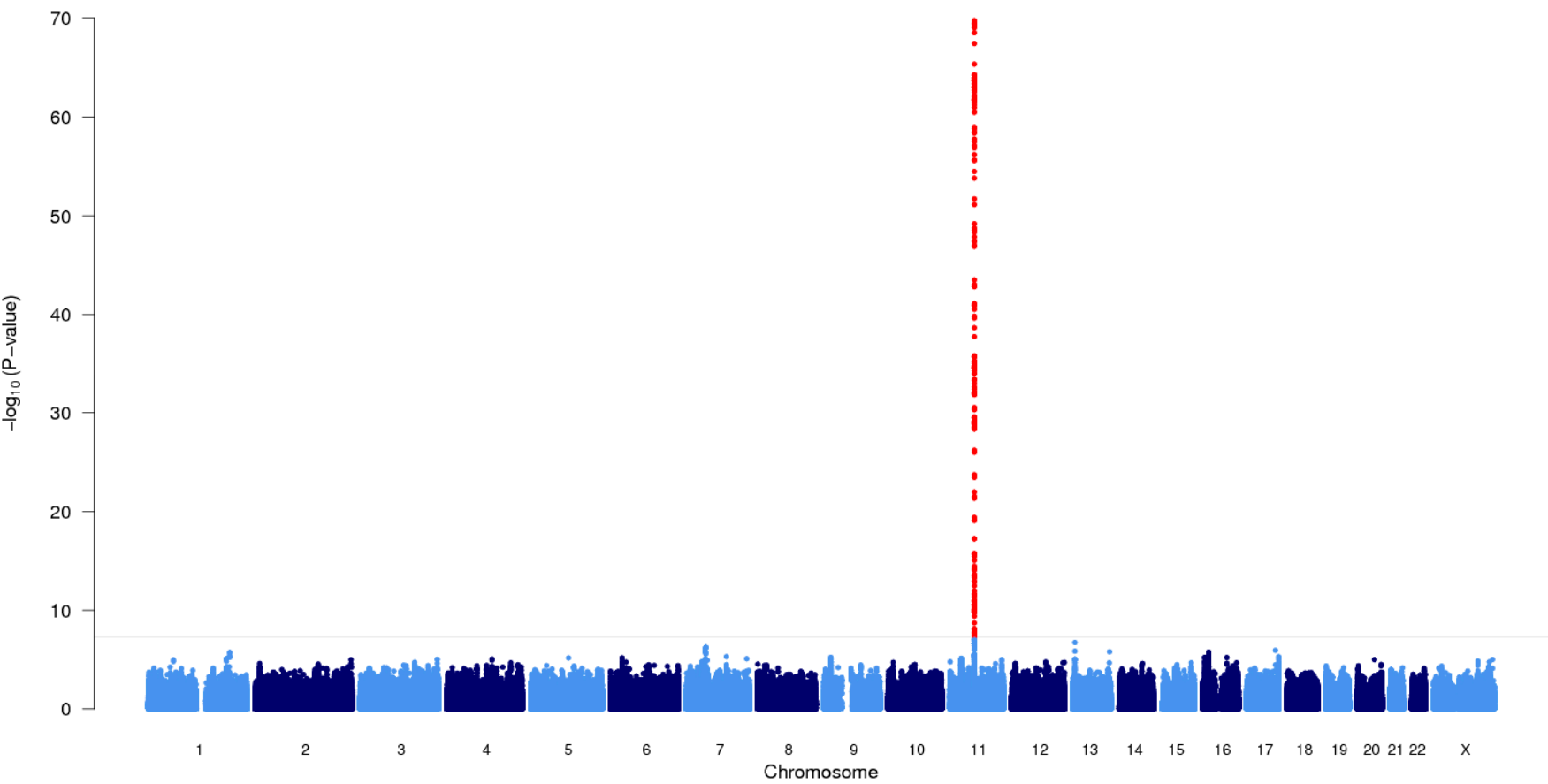


Figure S1. Manhattan plot of the meta-analysis of the single-variant association results of serum D5D.

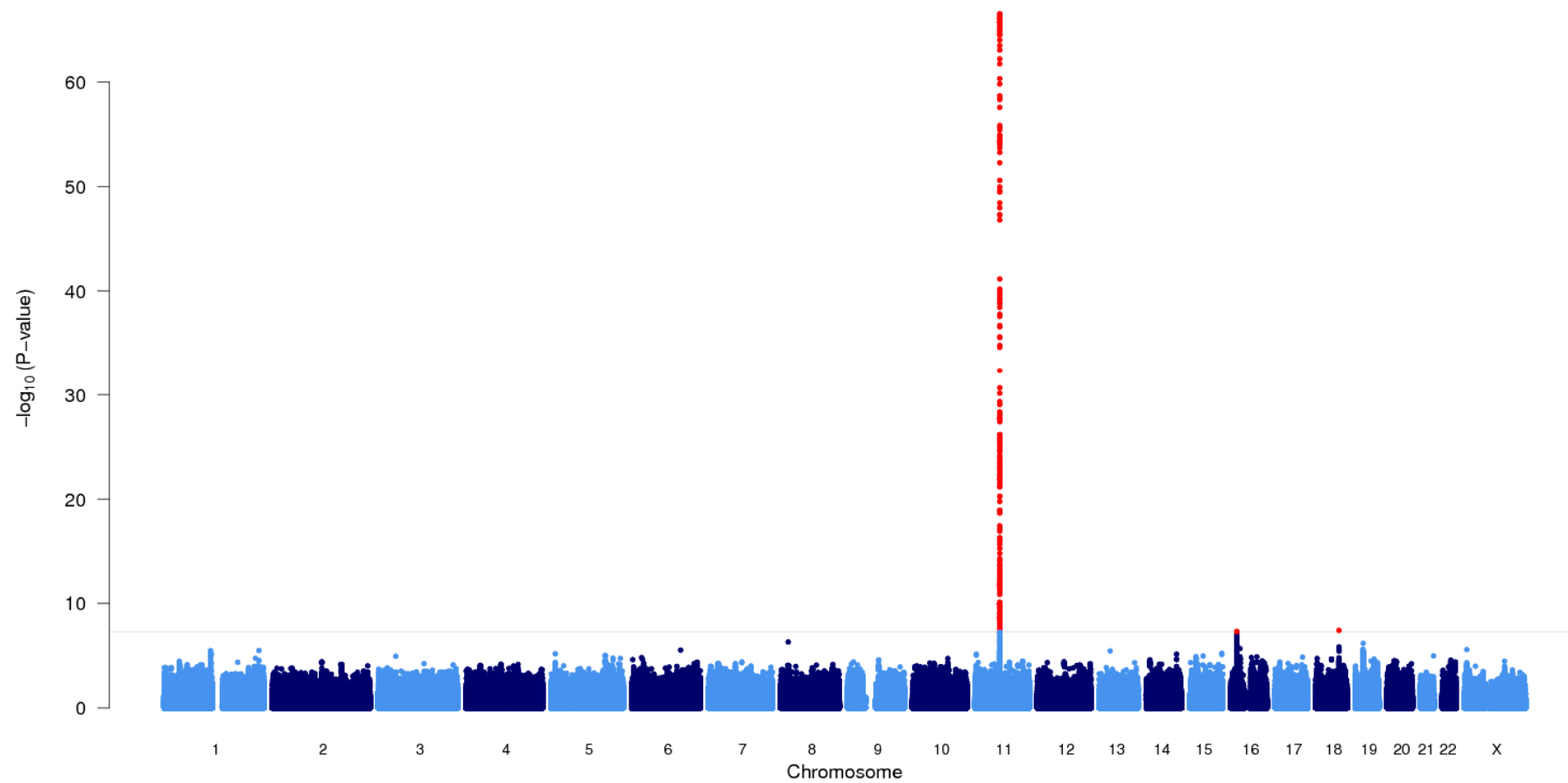


Figure S2. Manhattan plot of the meta-analysis of the single-variant association results of serum D6D.

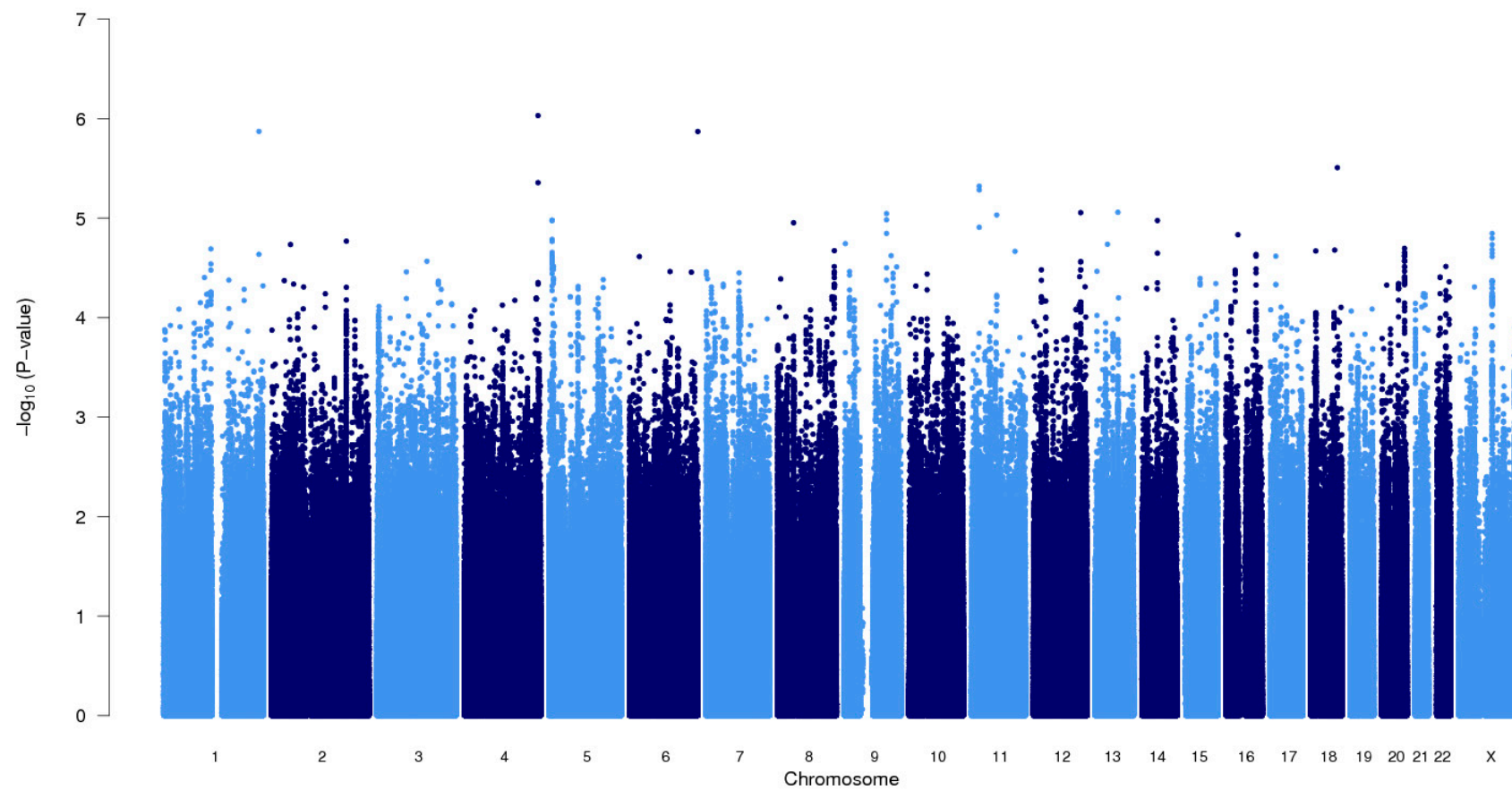


Figure S3. Manhattan plot of the meta-analysis of the single-variant association results of serum SCD.

Supplementary Tables

Table S1. Sample exclusion criteria and number of samples excluded after quality control in PIVUS and ULSAM.^a

Cohort	Genotyping platform	Sample exclusion criteria					
		Call rate<95%	Heterozygosity >3 SD	Gender discordance	Duplicates	IBD match	Ethnic outliers
PIVUS	Illumina	7	14	3	0	0	0
	OmniExpress						
	Illumina Metabochip	0	6	0	3	0	0
ULSAM	Illumina	6	7	1	0	1	22
	OmniExpress						
	Illumina Metabochip	0	0	0	0	0	0

^aIBD, identity by descent; PIVUS, Prospective Investigation of Uppsala Seniors; SD, standard deviation; ULSAM, Uppsala Longitudinal Study of Adult Men.

Table S2. Secondary signals significant at P-value $\sim 10^{-5}$ after adjustment for the lead variant.^a

Desaturase	lead variant	rs#	Chr:Position (b37)	EAF	Effect allele / Other allele	Before adjustment		After adjustment	
						Direction	P-value	Direction	P-value
D5D	rs174549	rs968567	11:61595564	0.15	T / C	-	4.8×10^{-49}	-	1.7×10^{-5}
D6D	rs138194593	rs2072113	11:61604967	0.17	T / C	-	3.8×10^{-55}	-	3.3×10^{-9}

^ab37, NCBI build 37; Chr, chromosome; D5D, δ -5-desaturase; D6D, δ -6-desaturase; EAF, effect allele frequency; FADS, fatty acid desaturase.

Table S3. Results for the significant loci in the single variant analysis extracted from published meta-analyses of GWAS for HOMA-IR, HDL cholesterol, triglycerides, and BMI.^a

Gene	rs#	Effect Allele	EAF	HDL ^b			Triglycerides ^b			BMI ^c			HOMA-IR ^d		
				Direction	P-value	N	Direction	P-value	N	Direction	P-value	N	Direction	P-value	N
FADS1	rs174549	a	0.32	-	4.3×10 ⁻²³	186973	+	6.9×10 ⁻³⁴	177673	+	0.47	321655	+	0.60	46186
FADS2	rs968567	t	0.16	-	6.2×10 ⁻⁰⁴	172673	+	3.4×10 ⁻⁰⁹	163958	+	0.40	309670	+	0.14	46186
FADS2	rs2072113	c	0.85	+	9.1×10 ⁻⁰⁵	90617	-	1.0×10 ⁻⁰⁶	84618	N/A	N/A	N/A	N/A	N/A	N/A
PDXDC1	rs6498540	a	0.67	+	0.03	92820	-	9.8×10 ⁻⁰⁴	89485	+	1.3×10 ⁻⁰³	233998	+	0.55	46186
near MC4R	rs9957425	c	0.39	-	0.24	92820	+	0.04	89485	+	0.55	220175	-	1.00	46186
PKD2L1	rs603424	a	0.19	+	0.52	187113	+	0.49	177807	-	0.73	309733	+	0.28	46186

^aBMI, body mass index; EAF, Effect allele frequency; HDL, high-density lipoprotein; HOMA-IR, homeostasis model assessment of insulin resistance. ^bResults from (PubMed ID: 24097068). ^cResults from (PubMed ID: 25673413). ^dResults from (PubMed ID: 20081858).