

Supplementary Materials:

Table S1. Population distribution of individuals genotyped using the two platforms i.e Immunochip and Global Screening Array (GSA).

Population	Immunochip	GSA
Danish	468	68
European/Turkish	11	2
Other	7	4
Total	479	70

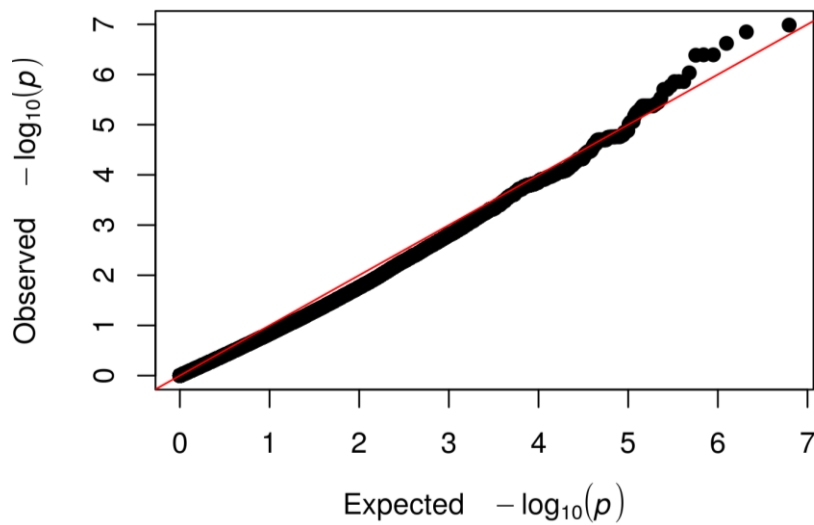


Figure S1: GC corrected QQ-plot.

Table S3: Top molecules from the IPA pathway analysis of the 348 top annotated SNPs. Genes in bold correspond to genes with SNPs mapping to eQTL or in association with NPY-LA. *Abbreviations:* IPA, Ingenuity Pathway Analysis; SNPs, Single nucleotide polymorphisms; NPY-LA, Neuropeptide Y autoantibodies; FXR, nuclear receptor Farnesoid X Receptor; RXR, retinoid X receptor; eQTL, quantitative trait loci.

Gene Symbol	Gene Name	SNP	Bonferroni	Molecular and biological function
<i>DGKH</i>	diacylglycerol kinase eta	rs2148655	8.32×10^{-8}	Diacylglycerol kinase (DGK) enzyme family regulates intracellular concentrations of phosphatidic acid and diacylglycerol, promoting cell growth by activating the Ras/B-Raf/C-Raf/MEK/ERK signaling pathway. <i>DGKH</i> is a protein-coding gene, nucleotide binding, enables NAD+ kinase activity, and enables ATP binding.
<i>DCAF5</i>	DDB1 and CUL4 associated factor 5	rs1275406	1.57×10^{-6}	Substrate receptor for CUL4-DDB1 E3 ubiquitin-protein ligase complex. <i>DCAF5</i> affects post-translational protein modification and is a protein-coding gene.

<i>LRP1B</i>	LDL receptor related protein 1B	rs6755822	5.05 ×10 ⁻⁶	Enables low-density lipoprotein particle receptor activity.
<i>SND1</i>	staphylococcal nuclease and tudor domain containing 1	rs3757779	7.99 ×10 ⁻⁶	Endonuclease that mediates miRNA decay of both protein-free and AGO2-loaded miRNAs, bridging factor between STAT6 and the basal transcription factor.
<i>LOC105373781</i>	uncharacterized	rs1483242	8.88 ×10 ⁻⁶	Affiliated with the ncRNA class.
<i>FAM230E</i> (includes others)	family with sequence similarity 230 member	rs375428700	1.24 ×10 ⁻⁵	Affiliated with the lncRNA class.
<i>LOC105373720</i>	uncharacterized	rs1483242	8.88 ×10 ⁻⁶	
<i>TBR1</i>	T-box brain transcription factor 1	rs890076	1.62 ×10 ⁻⁵	A member of a conserved family of genes that share the common T-box DNA-binding domain. T-box genes encode transcription factors involved in the regulation of numerous developmental processes.
<i>CAPZA1</i>	capping actin protein of muscle Z-line subunit alpha 1	rs12566829	1.66 ×10 ⁻⁵	Actin cytoskeleton organization and endoplasmic reticulum to Golgi vesicle-mediated transport.
<i>PABPC1L</i>	poly(A) binding protein cytoplasmic 1 like	rs3746583	1.96 ×10 ⁻⁵	Binds to the polyA tails of mRNAs to regulate mRNA stability and translation.
<i>ABCC2</i>	ATP binding cassette subfamily C member 2	rs79095830	2.02 ×10 ⁻⁵	ATP-dependent transporter of the ATP-binding cassette (ABC) family that binds and hydrolyzes ATP to enable active transport of various substrates including many drugs, toxicants, and endogenous compounds across cell membranes.