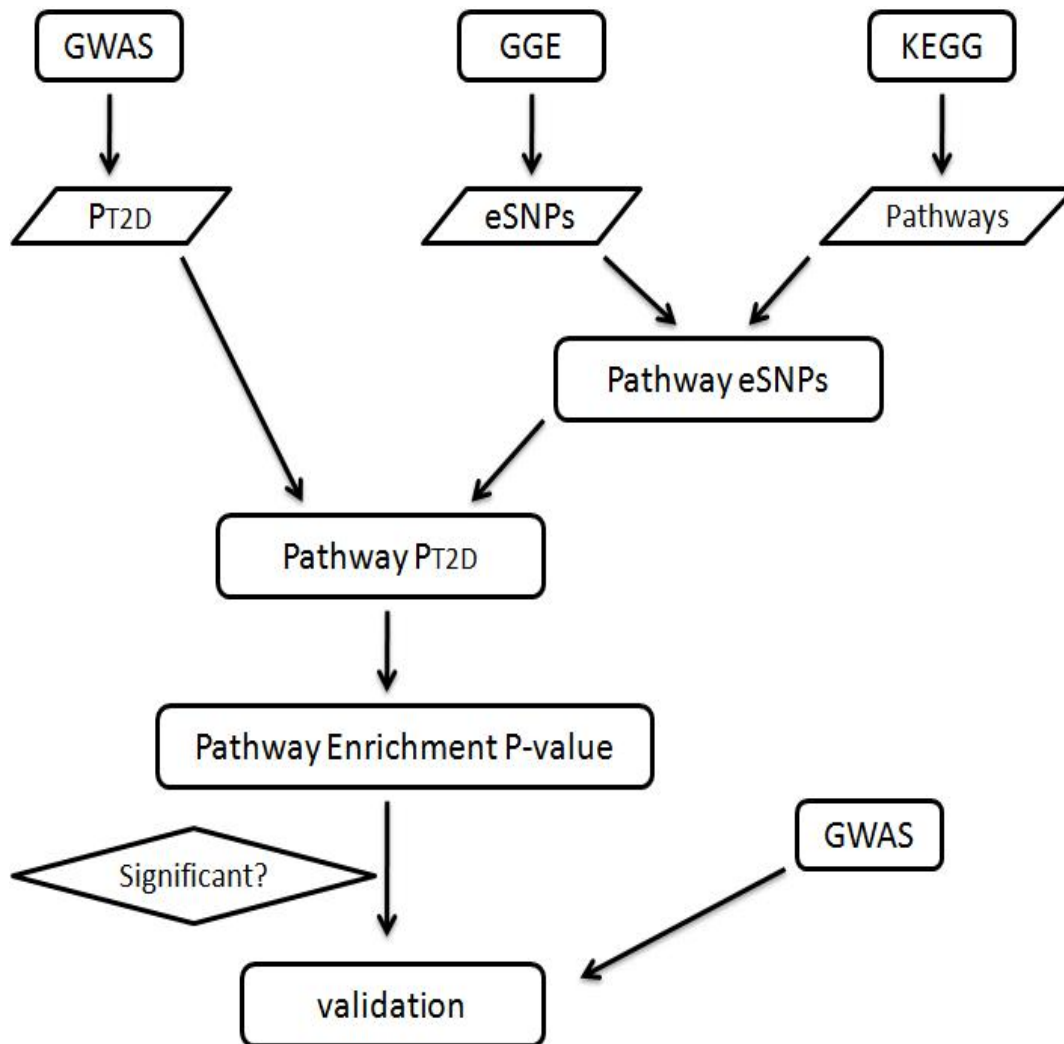


# Integrating Pathway Analysis and Genetics of Gene Expression for Genome-wide Association Studies

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Figure S1. Diagram Illustrating the Integrative Analysis Steps



**Table S1. p Values for All the Tested Pathways**

Pathway gene counts, % of genes with eSNPs, p-values are presented for all the tested pathways, including 110 KEGG pathways and 12 artificially designed pathways (two positive controls and ten negative controls).

<b>Pathway</b>	<b>Count</b>	<b>% Genes with eSNP</b>	<b>p Value</b>
Tight junction	186	39%	0.0012
Glycan structures - biosynthesis 1	147	50%	0.0019
Pancreatic cancer	115	28%	0.0058
Bladder cancer	70	31%	0.0068
Adherens junction	110	45%	0.0074
Neuroactive ligand-receptor interaction	321	34%	0.0076
Calcium signaling pathway	239	39%	0.0096
Hematopoietic cell lineage	120	33%	0.017
Complement and coagulation cascades	108	46%	0.018
N-Glycan biosynthesis	50	56%	0.021
Glycosylphosphatidylinositol(GPI)-anchor biosynthesis	24	88%	0.023
Phosphatidylinositol signaling system	214	18%	0.025
Cell Communication	106	58%	0.025
PPAR signaling pathway	92	43%	0.029
Ether lipid metabolism	45	51%	0.031
TGF-beta signaling pathway	134	45%	0.035
Cell cycle	162	36%	0.037
Antigen processing and presentation	119	41%	0.039
Systemic lupus erythematosus	101	42%	0.04
Arachidonic acid metabolism	74	49%	0.045
Chronic myeloid leukemia	115	28%	0.045
Olfactory transduction	470	12%	0.049
Glycan structures - biosynthesis 2	101	41%	0.05
Ribosome	94	37%	0.05
Melanoma	100	28%	0.051
Prostate cancer	138	33%	0.054
Glioma	103	31%	0.055
Alzheimer's disease	43	67%	0.058
Allograft rejection	63	43%	0.063
Type I diabetes mellitus	70	39%	0.075
Wnt signaling pathway	193	43%	0.076
Alanine and aspartate metabolism	42	50%	0.081
Graft-versus-host disease	65	45%	0.082
Oxidative phosphorylation	207	28%	0.087
mTOR signaling pathway	69	35%	0.09
MAPK signaling pathway	383	33%	0.091

<b>Pathway</b>	<b>Count</b>	<b>% Genes with eSNP</b>	<b>p Value</b>
Gap junction	148	30%	0.095
Autoimmune thyroid disease	38	82%	0.099
Glycan structures - degradation	75	29%	0.099
Cell adhesion molecules (CAMs)	214	43%	0.099
Tyrosine metabolism	87	44%	0.108
Small cell lung cancer	124	36%	0.11
O-Glycan biosynthesis	36	61%	0.115
Toll-like receptor signaling pathway	147	31%	0.124
Focal adhesion	287	36%	0.124
ECM-receptor interaction	127	42%	0.132
Insulin signaling pathway	194	40%	0.136
Epithelial cell signaling in Helicobacter pylori infection	130	25%	0.137
Ubiquitin mediated proteolysis	167	44%	0.137
Colorectal cancer	114	39%	0.146
Glycerophospholipid metabolism	97	43%	0.149
GnRH signaling pathway	163	34%	0.149
Glycine, serine and threonine metabolism	97	29%	0.158
Regulation of actin cytoskeleton	276	35%	0.159
Acute myeloid leukemia	89	26%	0.166
Fructose and mannose metabolism	45	60%	0.188
Purine metabolism	190	51%	0.2
Inositol phosphate metabolism	65	37%	0.211
Renal cell carcinoma	95	34%	0.228
Cytokine-cytokine receptor interaction	363	31%	0.243
Arginine and proline metabolism	50	42%	0.244
Melanogenesis	139	41%	0.258
Sphingolipid metabolism	50	52%	0.28
Basal cell carcinoma	73	37%	0.288
Adipocytokine signaling pathway	104	38%	0.302
Valine, leucine and isoleucine degradation	64	53%	0.31
SNARE interactions in vesicular transport	49	53%	0.32
Leukocyte transendothelial migration	170	36%	0.335
Fc epsilon RI signaling pathway	122	33%	0.339
Pyrimidine metabolism	114	59%	0.344
VEGF signaling pathway	108	35%	0.351
Glutathione metabolism	62	60%	0.371
Pyruvate metabolism	64	53%	0.373
ErbB signaling pathway	134	28%	0.398
Fatty acid metabolism	72	43%	0.407
Long-term depression	131	34%	0.417
Endometrial cancer	76	33%	0.419
EPEC	74	34%	0.424

<b>Pathway</b>	<b>Count</b>	<b>% Genes with eSNP</b>	<b>p Value</b>
Pathogenic Escherichia coli infection	74	34%	0.424
Hedgehog signaling pathway	74	31%	0.429
Non-small cell lung cancer	82	33%	0.486
Bile acid biosynthesis	52	44%	0.493
Long-term potentiation	101	41%	0.5
Axon guidance	206	36%	0.518
Jak-STAT signaling pathway	178	29%	0.598
Base excision repair	42	71%	0.613
Propanoate metabolism	51	51%	0.619
Glycerolipid metabolism	73	37%	0.636
Apoptosis	109	32%	0.644
Histidine metabolism	59	41%	0.652
Butanoate metabolism	59	37%	0.655
T cell receptor signaling pathway	122	34%	0.672
Neurodegenerative Diseases	62	45%	0.726
ABC transporters	73	40%	0.739
Thyroid cancer	50	46%	0.754
Tryptophan metabolism	85	42%	0.772
Natural killer cell mediated cytotoxicity	178	42%	0.792
Retinol metabolism	80	56%	0.8
p53 signaling pathway	94	46%	0.804
Notch signaling pathway	61	36%	0.813
Drug metabolism - cytochrome P450	92	65%	0.819
Metabolism of xenobiotics by cytochrome P450	94	65%	0.827
Glycolysis / Gluconeogenesis	92	46%	0.829
Aminoacyl-tRNA biosynthesis	52	48%	0.887
Androgen and estrogen metabolism	78	50%	0.889
Starch and sucrose metabolism	93	52%	0.941
Taste transduction	64	33%	0.947
B cell receptor signaling pathway	85	34%	0.952
Porphyrin and chlorophyll metabolism	54	61%	0.959
Drug metabolism - other enzymes	65	66%	0.963
Positive Control Pathway 1	18	33%	<0.0001
Positive Control Pathway 2	46	79%	0.0006
Negative Control Pathway 1	20	100%	0.447
Negative Control Pathway 2	58	100%	0.426
Negative Control Pathway 3	60	100%	0.405
Negative Control Pathway 4	80	100%	0.389
Negative Control Pathway 5	100	100%	0.389
Negative Control Pathway 6	120	100%	0.365
Negative Control Pathway 7	140	100%	0.349
Negative Control Pathway 8	160	100%	0.346

<b>Pathway</b>	<b>Count</b>	<b>% Genes with eSNP</b>	<b>p Value</b>
Negative Control Pathway 9	180	100%	0.327
Negative Control Pathway 10	200	100%	0.329

**Table S2. Representative eSNPs Information for the Pathways with False Discovery Rate  $\leq$  20%**

Genes, their representative eSNPs, expression tissues, eSNP-expression correlation p values, eSNP WTCCC PT2D, non-WTCCC PT2D and DIAGRAM PT2D are presented for pathways with FDR  $\leq$  20%, including the six-gene positive control pathway. Some eSNPs are presented in multiple rows as they are identified as eSNPs from multiple tissues. Only unique representative eSNPs were used in the analysis.

Pathway	Gene	eSNP	Tissue	SNP-Expression Pvalue	SNP-T2D Pvalue		
					DIAGRAM	WTCCC	Non-WTCCC
Adherens junction	ACP1	rs6708541	subcutaneous adipose	6.7E-05	2.2E-01	2.2E-01	4.8E-01
Adherens junction	ACTG1	rs7342974	liver	3.0E-30	3.8E-01	1.8E-01	8.9E-01
Adherens junction	ACTN1	rs743128	liver	6.5E-05	6.6E-02	7.7E-03	6.9E-01
Adherens junction	ACTN3	rs7925108	omental adipose	1.2E-25	6.3E-02	9.3E-04	9.3E-01
Adherens junction	ACTN3	rs7925108	subcutaneous adipose	7.3E-08	6.3E-02	9.3E-04	9.3E-01
Adherens junction	ACVR1C	rs13383985	liver	5.9E-06	NA	4.9E-01	NA
Adherens junction	BAIAP2	rs4969385	liver	1.2E-05	NA	7.0E-01	NA
Adherens junction	CDH1	rs12917815	omental adipose	8.3E-05	6.1E-01	3.9E-02	3.4E-01
Adherens junction	CREBBP	rs129963	omental adipose	1.0E-04	NA	3.7E-02	NA
Adherens junction	CSNK2B	rs1077394	liver	2.0E-07	2.1E-05	5.5E-04	1.8E-03
Adherens junction	CSNK2B	rs1077394	omental adipose	2.2E-08	2.1E-05	5.5E-04	1.8E-03
Adherens junction	CSNK2B	rs1077394	subcutaneous adipose	9.5E-08	2.1E-05	5.5E-04	1.8E-03
Adherens junction	CTNNA1	rs10062943	omental adipose	3.0E-19	1.4E-01	1.9E-01	3.2E-01
Adherens junction	CTNNA1	rs10062943	subcutaneous adipose	1.1E-09	1.4E-01	1.9E-01	3.2E-01
Adherens junction	CTNNA1	rs744675	omental adipose	2.9E-18	1.4E-01	1.9E-01	3.2E-01
Adherens junction	CTNNA1	rs744675	subcutaneous adipose	2.2E-11	1.4E-01	1.9E-01	3.2E-01
Adherens junction	CTNNA2	rs4296451	omental adipose	1.6E-06	9.5E-01	1.0E-01	2.2E-01
Adherens junction	CTNNA3	rs2441718	liver	8.8E-07	6.7E-02	1.6E-01	1.6E-01
Adherens junction	CTNNB1	rs9862024	omental adipose	7.2E-05	9.2E-01	9.2E-02	2.2E-01
Adherens junction	CTNND1	rs549022	omental adipose	2.7E-05	4.1E-01	5.3E-02	6.8E-01
Adherens junction	EGFR	rs13244925	subcutaneous adipose	2.1E-05	2.9E-01	1.1E-01	8.6E-01

Pathway	Gene	eSNP	Tissue	SNP-Expression Pvalue	SNP-T2D Pvalue		
					DIAGRAM	WTCCC	Non-WTCCC
Adherens junction	EP300	rs133036	liver	2.9E-05	1.2E-01	2.5E-01	2.2E-01
Adherens junction	FARP2	rs17387035	liver	7.4E-08	1.3E-02	3.1E-02	8.8E-02
Adherens junction	FARP2	rs17387035	omental adipose	1.6E-11	1.3E-02	3.1E-02	8.8E-02
Adherens junction	FARP2	rs17387035	subcutaneous adipose	1.9E-05	1.3E-02	3.1E-02	8.8E-02
Adherens junction	FGFR1	rs7821392	omental adipose	5.7E-05	8.5E-01	6.2E-01	8.9E-01
Adherens junction	FGFR1	rs7821392	subcutaneous adipose	5.0E-05	8.5E-01	6.2E-01	8.9E-01
Adherens junction	FYN	rs354545	liver	8.20E-05	1.60E-01	7.70E-01	8.67E-02
Adherens junction	IGF1R	rs733710	omental adipose	5.10E-05	1.10E-01	2.60E-01	1.91E-01
Adherens junction	INSR	rs2914572	liver	6.30E-06	NA	2.70E-01	NA
Adherens junction	INSR	rs2914572	omental adipose	3.80E-08	NA	2.70E-01	NA
Adherens junction	INSR	rs2914572	subcutaneous adipose	1.40E-05	NA	2.70E-01	NA
Adherens junction	IQGAP1	rs7163622	omental adipose	5.00E-05	9.00E-01	3.50E-01	5.62E-01
Adherens junction	LMO7	rs9543947	subcutaneous adipose	0.00012	0.015	0.0073	0.22629414
Adherens junction	MAPK3	rs11865086	subcutaneous adipose	9.30E-05	8.00E-01	4.10E-01	7.54E-01
Adherens junction	MLLT4	rs6906754	liver	1.20E-06	4.60E-01	6.40E-01	5.17E-01
Adherens junction	MLLT4	rs6906754	omental adipose	6.90E-08	4.60E-01	6.40E-01	5.17E-01
Adherens junction	PARD3	rs3781128	liver	0	0.28	0.26	0.55522983
Adherens junction	PTPN1	rs4811072	omental adipose	4.50E-05	NA	1.10E-02	NA
Adherens junction	PTPRB	rs7313937	liver	8.50E-05	7.50E-01	5.10E-03	6.93E-02
Adherens junction	PTPRF	rs1887402	liver	1.00E-04	2.90E-02	2.90E-03	5.31E-01
Adherens junction	PTPRM	rs1318213	omental adipose	0.00012	0.65	0.25	0.76547273
Adherens junction	PTPRM	rs1318213	subcutaneous adipose	4.90E-07	6.50E-01	2.50E-01	7.65E-01
Adherens junction	PVRL1	rs10892507	subcutaneous adipose	9.00E-05	4.90E-01	8.20E-01	4.39E-01
Adherens junction	PVRL2	rs440277	liver	0	0.97	0.58	0.69353038
Adherens junction	PVRL3	rs17667034	omental adipose	8.10E-05	2.80E-01	8.60E-02	9.09E-01
Adherens junction	RAC1	rs2347338	omental adipose	8.00E-11	9.10E-01	1.30E-01	2.87E-01
Adherens junction	RAC1	rs2347338	subcutaneous adipose	4.70E-08	9.10E-01	1.30E-01	2.87E-01
Adherens junction	RHOA	rs9586	omental adipose	3.60E-06	4.50E-01	3.00E-01	8.32E-01
Adherens junction	SMAD2	rs8085335	subcutaneous adipose	4.40E-05	5.20E-01	9.30E-02	6.44E-01
Adherens junction	SMAD3	rs266332	liver	2.90E-05	4.60E-02	1.80E-03	8.02E-01

Pathway	Gene	eSNP	Tissue	SNP-Expression Pvalue	SNP-T2D Pvalue		
					DIAGRAM	WTCCC	Non-WTCCC
Adherens junction	SMAD4	rs12456284	omental adipose	1.80E-05	1.30E-01	1.60E-01	3.34E-01
Adherens junction	SNAI1	rs1555317	omental adipose	1.70E-06	3.80E-02	2.30E-02	2.96E-01
Adherens junction	SNAI1	rs1555317	subcutaneous adipose	8.10E-06	3.80E-02	2.30E-02	2.96E-01
Adherens junction	SNAI2	rs11987140	liver	2.70E-05	2.90E-01	5.30E-01	3.37E-01
Adherens junction	SORBS1	rs3193970	liver	5.60E-06	6.40E-01	1.60E-01	6.28E-01
Adherens junction	TCF4	rs17090051	liver	4.60E-05	7.90E-01	4.10E-01	7.68E-01
Adherens junction	TCF7	rs2548975	omental adipose	0.00013	0.87	0.087	0.2488846
Adherens junction	TCF7L1	rs4832156	omental adipose	1.60E-05	1.50E-01	4.80E-02	6.88E-01
Adherens junction	TGFBR1	rs10819634	liver	4.40E-05	7.30E-01	4.30E-02	2.49E-01
Adherens junction	TGFBR2	rs7625163	liver	0	0.7	0.24	0.67954428
Adherens junction	VCL	rs4745727	omental adipose	4.30E-19	5.90E-02	6.40E-02	2.61E-01
Adherens junction	VCL	rs4745727	subcutaneous adipose	1.70E-07	5.90E-02	6.40E-02	2.61E-01
Adherens junction	WASF1	rs11757982	omental adipose	1.10E-05	2.60E-01	3.40E-02	8.83E-01
Adherens junction	WASF1	rs11757982	subcutaneous adipose	3.90E-07	2.60E-01	3.40E-02	8.83E-01
Adherens junction	WASF3	rs793639	liver	4.50E-10	3.70E-01	1.70E-02	4.96E-01
Adherens junction	WASF3	rs793639	omental adipose	2.00E-07	3.70E-01	1.70E-02	4.96E-01
Bladder cancer	BRAF	rs10487888	omental adipose	5.60E-07	5.70E-01	3.60E-01	9.60E-01
Bladder cancer	BRAF	rs10487888	subcutaneous adipose	7.30E-08	5.70E-01	3.60E-01	9.60E-01
Bladder cancer	CCND1	rs4584599	subcutaneous adipose	1.10E-06	NA	2.40E-02	NA
Bladder cancer	CDH1	rs12917815	omental adipose	8.30E-05	6.10E-01	3.90E-02	3.39E-01
Bladder cancer	CDK4	rs867008	subcutaneous adipose	1.30E-05	4.30E-01	3.80E-01	6.99E-01
Bladder cancer	DAPK1	rs3128479	omental adipose	2.90E-05	8.70E-01	9.60E-01	8.52E-01
Bladder cancer	E2F3	rs9368222	subcutaneous adipose	5.20E-06	1.50E-11	1.50E-05	4.42E-09
Bladder cancer	ECGF1	rs762669	liver	9.80E-07	NA	2.50E-03	NA
Bladder cancer	EGFR	rs13244925	subcutaneous adipose	2.10E-05	2.90E-01	1.10E-01	8.58E-01
Bladder cancer	FGFR3	rs798754	omental adipose	2.20E-15	2.50E-01	2.60E-02	8.42E-01
Bladder cancer	FGFR3	rs798754	subcutaneous adipose	1.30E-22	2.50E-01	2.60E-02	8.42E-01
Bladder cancer	HRAS	rs4963128	omental adipose	5.70E-09	9.30E-01	2.50E-01	4.20E-01
Bladder cancer	KRAS	rs11048019	omental adipose	0.00011	0.051	0.041	0.28980561
Bladder cancer	KRAS	rs4963884	omental adipose	5.90E-05	6.30E-02	4.10E-02	3.52E-01



Pathway	Gene	eSNP	Tissue	SNP-Expression Pvalue	SNP-T2D Pvalue		
					DIAGRAM	WTCCC	Non-WTCCC
Bladder cancer	MAP2K1	rs11857642	subcutaneous adipose	1.30E-08	7.20E-01	6.60E-01	8.87E-01
Bladder cancer	MAPK3	rs11865086	subcutaneous adipose	9.30E-05	8.00E-01	4.10E-01	7.54E-01
Bladder cancer	MDM2	rs1908668	subcutaneous adipose	0.00012	0.17	0.16	0.44128888
Bladder cancer	MMP2	rs8043908	subcutaneous adipose	5.70E-05	9.00E-01	7.60E-01	9.43E-01
Bladder cancer	RAF1	rs7617041	liver	3.10E-05	3.60E-01	4.00E-01	5.55E-01
Bladder cancer	RASSF1	rs1540293	omental adipose	4.50E-05	8.60E-01	5.60E-01	8.22E-01
Bladder cancer	THBS1	rs11070174	omental adipose	4.10E-05	8.30E-01	4.10E-01	7.14E-01
Bladder cancer	VEGF	rs3025033	omental adipose	1.80E-06	NA	4.10E-02	NA
Bladder cancer	VEGFB	rs3751120	omental adipose	1.50E-10	8.70E-02	2.30E-02	5.89E-01
Bladder cancer	VEGFB	rs3751120	subcutaneous adipose	1.30E-05	8.70E-02	2.30E-02	5.89E-01
Bladder cancer	VEGFC	rs1449738	omental adipose	9.00E-05	1.40E-01	4.40E-01	1.54E-01
Calcium signaling pathway	ADCY1	rs1521470	omental adipose	4.70E-05	4.80E-01	3.50E-02	4.71E-01
Calcium signaling pathway	ADCY3	rs1077492	omental adipose	1.50E-05	4.70E-01	4.70E-01	6.75E-01
Calcium signaling pathway	ADCY4	rs6573766	omental adipose	1.40E-06	2.30E-01	3.90E-02	1.00E+00
Calcium signaling pathway	ADCY7	rs1064448	subcutaneous adipose	5.90E-05	9.60E-01	5.70E-01	6.98E-01
Calcium signaling pathway	ADCY9	rs8049367	subcutaneous adipose	2.60E-05	7.50E-01	3.80E-02	2.18E-01
Calcium signaling pathway	ADORA2A	rs3788372	liver	2.90E-07	2.60E-01	1.10E-01	7.85E-01
Calcium signaling pathway	ADORA2A	rs3788372	omental adipose	2.20E-05	2.60E-01	1.10E-01	7.85E-01
Calcium signaling pathway	ADORA2B	rs3112521	liver	2.70E-06	3.40E-01	3.00E-01	6.26E-01
Calcium signaling pathway	ADRA1A	rs6992095	subcutaneous adipose	6.20E-05	1.50E-01	3.40E-02	7.74E-01
Calcium signaling pathway	ADRA1B	rs938541	subcutaneous adipose	6.30E-05	9.70E-01	3.30E-01	4.63E-01
Calcium signaling pathway	ADRB1	rs2782979	liver	1.40E-08	1.20E-01	3.60E-04	4.71E-01
Calcium signaling pathway	ADRB2	rs973057	omental adipose	5.90E-07	1.80E-01	7.50E-02	6.72E-01

Pathway	Gene	eSNP	Tissue	SNP-Expression Pvalue	SNP-T2D Pvalue		
					DIAGRAM	WTCCC	Non-WTCCC
Calcium signaling pathway	AGTR1	rs16861027	liver	7.30E-05	8.30E-03	3.30E-02	5.22E-02
Calcium signaling pathway	ATP2A3	rs6502762	subcutaneous adipose	3.80E-05	4.50E-01	7.10E-02	6.83E-01
Calcium signaling pathway	ATP2B1	rs2220729	omental adipose	1.00E-05	4.80E-01	1.40E-02	3.16E-01
Calcium signaling pathway	ATP2B1	rs2220729	subcutaneous adipose	9.50E-08	4.80E-01	1.40E-02	3.16E-01
Calcium signaling pathway	ATP2B1	rs2230283	omental adipose	1.80E-05	6.20E-01	1.40E-02	1.96E-01
Calcium signaling pathway	ATP2B1	rs2230283	subcutaneous adipose	8.80E-08	6.20E-01	1.40E-02	1.96E-01
Calcium signaling pathway	ATP2B4	rs955865	omental adipose	3.30E-08	NA	3.00E-01	NA
Calcium signaling pathway	ATP2B4	rs955865	subcutaneous adipose	2.30E-08	NA	3.00E-01	NA
Calcium signaling pathway	BDKRB2	rs4349080	subcutaneous adipose	2.20E-05	1.40E-01	2.10E-01	3.00E-01
Calcium signaling pathway	BST1	rs997250	omental adipose	1.90E-09	3.80E-01	6.60E-03	3.31E-01
Calcium signaling pathway	BST1	rs997250	subcutaneous adipose	4.50E-08	3.80E-01	6.60E-03	3.31E-01
Calcium signaling pathway	CACNA1D	rs555480	liver	5.30E-07	1.40E-01	6.90E-02	5.62E-01
Calcium signaling pathway	CACNA1G	rs989128	subcutaneous adipose	1.30E-05	7.70E-01	4.20E-01	8.07E-01
Calcium signaling pathway	CALM1	rs3213718	liver	2.60E-06	1.50E-01	4.50E-02	7.04E-01
Calcium signaling pathway	CALM2	rs13430277	omental adipose	1.10E-05	3.60E-01	1.80E-03	2.12E-01
Calcium signaling pathway	CALM3	rs11083846	omental adipose	4.20E-05	7.60E-01	6.30E-01	9.72E-01
Calcium signaling pathway	CALML5	rs7098007	liver	5.90E-05	7.30E-01	6.60E-02	3.15E-01
Calcium signaling pathway	CALML6	rs4648592	omental adipose	4.80E-05	9.10E-01	3.10E-01	5.08E-01
Calcium signaling pathway	CALML6	rs4648592	subcutaneous adipose	9.10E-05	9.10E-01	3.10E-01	5.08E-01

Pathway	Gene	eSNP	Tissue	SNP-Expression Pvalue	SNP-T2D Pvalue		
					DIAGRAM	WTCCC	Non-WTCCC
Calcium signaling pathway	CAMK2D	rs6835088	liver	3.50E-12	3.80E-02	5.00E-02	1.95E-01
Calcium signaling pathway	CAMK2D	rs6835088	omental adipose	1.20E-48	3.80E-02	5.00E-02	1.95E-01
Calcium signaling pathway	CAMK2D	rs6835088	subcutaneous adipose	2.80E-24	3.80E-02	5.00E-02	1.95E-01
Calcium signaling pathway	CAMK2G	rs2894040	subcutaneous adipose	1.20E-06	NA	1.50E-01	NA
Calcium signaling pathway	CAMK4	rs7704970	liver	3.30E-07	5.10E-01	4.50E-01	7.61E-01
Calcium signaling pathway	CCKBR	rs1876826	omental adipose	5.80E-07	3.30E-01	4.10E-02	7.67E-01
Calcium signaling pathway	CD38	rs997250	omental adipose	8.00E-10	3.80E-01	6.60E-03	3.31E-01
Calcium signaling pathway	CHRM1	rs530752	omental adipose	6.40E-05	5.30E-02	3.70E-01	4.99E-02
Calcium signaling pathway	CHRM3	rs10495433	liver	6.20E-05	4.50E-02	6.00E-02	2.06E-01
Calcium signaling pathway	CHRM3	rs10495434	liver	1.00E-05	5.20E-02	6.00E-02	2.39E-01
Calcium signaling pathway	CHRNA7	rs1580141	omental adipose	9.80E-08	1.50E-02	3.00E-05	9.94E-01
Calcium signaling pathway	CHRNA7	rs1580141	subcutaneous adipose	2.40E-05	1.50E-02	3.00E-05	9.94E-01
Calcium signaling pathway	DRD1	rs11949641	subcutaneous adipose	9.70E-05	9.20E-01	1.70E-01	3.33E-01
Calcium signaling pathway	EDNRA	rs2163011	liver	6.40E-05	8.70E-02	6.90E-01	4.02E-02
Calcium signaling pathway	EDNRB	rs6563019	subcutaneous adipose	2.60E-06	4.40E-01	1.80E-02	4.03E-01
Calcium signaling pathway	EGFR	rs13244925	subcutaneous adipose	2.10E-05	2.90E-01	1.10E-01	8.58E-01
Calcium signaling pathway	ERBB4	rs1394782	omental adipose	8.80E-06	6.00E-01	1.80E-01	7.23E-01
Calcium signaling pathway	ERBB4	rs1394782	subcutaneous adipose	3.20E-05	6.00E-01	1.80E-01	7.23E-01
Calcium signaling pathway	F2R	rs250760	omental adipose	4.80E-05	3.50E-02	2.20E-01	5.30E-02

Pathway	Gene	eSNP	Tissue	SNP-Expression Pvalue	SNP-T2D Pvalue		
					DIAGRAM	WTCCC	Non-WTCCC
Calcium signaling pathway	GNA11	rs3746069	liver	0	NA	0.72	NA
Calcium signaling pathway	GNA14	rs11145448	omental adipose	2.10E-05	5.50E-01	5.30E-01	7.47E-01
Calcium signaling pathway	GNAL	rs16976538	omental adipose	6.50E-06	2.40E-01	1.50E-02	7.40E-01
Calcium signaling pathway	GNAL	rs16976538	subcutaneous adipose	9.00E-09	2.40E-01	1.50E-02	7.40E-01
Calcium signaling pathway	GNAS	rs259971	liver	0	0.39	0.4	0.6076069
Calcium signaling pathway	GRIN2C	rs6501741	omental adipose	4.30E-05	7.10E-03	3.00E-02	4.73E-02
Calcium signaling pathway	GRM1	rs3804295	subcutaneous adipose	6.30E-05	2.30E-01	1.60E-01	5.95E-01
Calcium signaling pathway	GRM5	rs2226624	omental adipose	0.00012	0.71	0.71	0.82910397
Calcium signaling pathway	HRH1	rs2171543	liver	3.80E-07	8.10E-01	5.10E-01	8.43E-01
Calcium signaling pathway	HTR2B	rs1472959	omental adipose	8.40E-06	8.30E-01	2.70E-02	1.37E-01
Calcium signaling pathway	HTR2B	rs1472959	subcutaneous adipose	8.40E-05	8.30E-01	2.70E-02	1.37E-01
Calcium signaling pathway	HTR7	rs7895851	omental adipose	9.80E-05	3.10E-01	8.40E-03	4.73E-01
Calcium signaling pathway	ITPKB	rs837748	omental adipose	1.00E-04	1.50E-01	5.00E-01	1.46E-01
Calcium signaling pathway	ITPR1	rs4684443	liver	1.70E-06	8.00E-03	1.70E-02	7.95E-02
Calcium signaling pathway	ITPR2	rs10506007	omental adipose	4.20E-05	6.80E-01	5.20E-01	9.58E-01
Calcium signaling pathway	ITPR3	rs7769838	liver	1.60E-06	7.90E-01	2.20E-01	5.35E-01
Calcium signaling pathway	LHCGR	rs6705602	omental adipose	6.90E-05	7.40E-01	1.50E-01	4.84E-01
Calcium signaling pathway	MYLK	rs17373884	subcutaneous adipose	7.40E-05	5.70E-01	3.20E-01	9.89E-01
Calcium signaling pathway	MYLK	rs9289225	subcutaneous adipose	8.30E-05	5.70E-01	3.20E-01	9.89E-01

Pathway	Gene	eSNP	Tissue	SNP-Expression Pvalue	SNP-T2D Pvalue		
					DIAGRAM	WTCCC	Non-WTCCC
Calcium signaling pathway	NOS2A	rs4796190	omental adipose	4.70E-30	4.50E-01	4.20E-02	5.54E-01
Calcium signaling pathway	NOS2A	rs4796190	subcutaneous adipose	3.30E-30	4.50E-01	4.20E-02	5.54E-01
Calcium signaling pathway	NOS3	rs13224758	liver	5.00E-05	NA	4.80E-01	NA
Calcium signaling pathway	P2RX1	rs9904166	subcutaneous adipose	4.50E-06	NA	2.80E-01	NA
Calcium signaling pathway	P2RX2	rs5744750	omental adipose	8.80E-06	5.40E-01	2.50E-02	3.38E-01
Calcium signaling pathway	P2RX3	rs10400305	liver	1.30E-05	1.90E-01	2.70E-01	3.53E-01
Calcium signaling pathway	P2RX4	rs1180051	liver	2.10E-09	1.10E-01	6.10E-02	4.80E-01
Calcium signaling pathway	P2RX4	rs1180051	omental adipose	1.00E-08	1.10E-01	6.10E-02	4.80E-01
Calcium signaling pathway	P2RX4	rs1180051	subcutaneous adipose	5.90E-06	1.10E-01	6.10E-02	4.80E-01
Calcium signaling pathway	P2RX7	rs1180012	liver	1.90E-05	6.50E-01	6.70E-01	7.75E-01
Calcium signaling pathway	PDE1A	rs6711862	omental adipose	3.20E-20	1.70E-03	2.30E-02	1.18E-02
Calcium signaling pathway	PDE1A	rs6711862	subcutaneous adipose	1.50E-10	1.70E-03	2.30E-02	1.18E-02
Calcium signaling pathway	PDE1B	rs4759088	liver	8.90E-05	NA	7.60E-02	NA
Calcium signaling pathway	PDE1C	rs4551232	omental adipose	9.70E-05	9.20E-01	1.40E-01	2.93E-01
Calcium signaling pathway	PHKG1	rs7778601	liver	9.30E-08	9.40E-02	2.30E-02	6.25E-01
Calcium signaling pathway	PHKG2	rs9934806	liver	2.80E-07	9.30E-01	4.00E-01	5.78E-01
Calcium signaling pathway	PLCB1	rs978266	subcutaneous adipose	0.00012	0.47	0.021	0.39028309
Calcium signaling pathway	PLCB2	rs3743033	liver	0	0.23	0.47	0.2792028
Calcium signaling pathway	PLCD1	rs11129780	subcutaneous adipose	7.20E-08	2.40E-01	5.40E-02	9.40E-01

Pathway	Gene	eSNP	Tissue	SNP-Expression Pvalue	SNP-T2D Pvalue		
					DIAGRAM	WTCCC	Non-WTCCC
Calcium signaling pathway	PLCD3	rs12450321	subcutaneous adipose	7.40E-06	8.50E-01	2.40E-01	4.93E-01
Calcium signaling pathway	PLCD4	rs2279014	liver	3.70E-05	8.00E-01	1.20E-02	9.41E-02
Calcium signaling pathway	PLCE1	rs11593126	omental adipose	5.90E-05	5.20E-01	2.10E-01	9.06E-01
Calcium signaling pathway	PLCG2	rs4074445	subcutaneous adipose	6.50E-05	NA	1.60E-01	NA
Calcium signaling pathway	PPID	rs12505475	omental adipose	2.80E-07	1.70E-01	1.80E-01	4.11E-01
Calcium signaling pathway	PPID	rs7689418	omental adipose	1.10E-08	1.70E-01	1.80E-01	4.11E-01
Calcium signaling pathway	PPP3CA	rs3804357	liver	1.80E-12	2.10E-01	4.30E-01	2.70E-01
Calcium signaling pathway	PPP3CC	rs17733133	omental adipose	2.60E-06	NA	2.10E-01	NA
Calcium signaling pathway	PPP3CC	rs17733133	subcutaneous adipose	9.60E-05	NA	2.10E-01	NA
Calcium signaling pathway	PPP3R1	rs6758449	omental adipose	7.60E-05	8.30E-01	4.40E-01	7.45E-01
Calcium signaling pathway	PRKACB	rs678794	liver	1.10E-06	9.40E-01	7.30E-01	8.62E-01
Calcium signaling pathway	PRKCA	rs16960228	liver	1.60E-06	5.30E-01	1.90E-03	1.02E-01
Calcium signaling pathway	PRKCB1	rs12931116	subcutaneous adipose	2.70E-06	2.50E-01	3.20E-01	4.28E-01
Calcium signaling pathway	PTAFR	rs1053107	omental adipose	7.90E-07	8.20E-01	3.10E-01	6.15E-01
Calcium signaling pathway	PTGER3	rs1891417	subcutaneous adipose	2.50E-05	2.10E-01	2.60E-01	4.06E-01
Calcium signaling pathway	PTGER3	rs2796200	subcutaneous adipose	4.50E-05	2.60E-01	2.60E-01	5.13E-01
Calcium signaling pathway	PTGFR	rs12737480	liver	9.30E-07	6.30E-01	1.30E-01	5.80E-01
Calcium signaling pathway	RYR1	rs2163823	subcutaneous adipose	5.00E-06	7.50E-01	1.60E-01	4.90E-01
Calcium signaling pathway	RYR2	rs3011566	liver	0	0.23	0.093	0.75641899

Pathway	Gene	eSNP	Tissue	SNP-Expression Pvalue	SNP-T2D Pvalue		
					DIAGRAM	WTCCC	Non-WTCCC
Calcium signaling pathway	RYR3	rs8041171	subcutaneous adipose	1.10E-05	1.40E-02	1.40E-01	2.66E-02
Calcium signaling pathway	SPHK2	rs11880333	omental adipose	3.90E-05	NA	5.40E-01	NA
Calcium signaling pathway	TACR2	rs4745987	omental adipose	3.50E-07	1.00E-01	2.80E-01	1.59E-01
Calcium signaling pathway	VDAC1	rs4958208	liver	2.70E-06	9.90E-01	6.80E-01	7.53E-01
Cell Communication	ACTG1	rs7342974	liver	0	0.38	0.18	0.8915344
Cell Communication	ACTG1	rs7342974	liver	3.00E-30	3.80E-01	1.80E-01	8.92E-01
Cell Communication	CHAD	rs11869714	liver	1.90E-12	6.90E-01	2.10E-01	6.47E-01
Cell Communication	COL11A2	rs213213	liver	4.20E-07	8.10E-01	5.40E-01	8.72E-01
Cell Communication	COL2A1	rs4760683	omental adipose	1.50E-05	4.70E-01	4.50E-01	6.94E-01
Cell Communication	COL4A1	rs599483	omental adipose	9.70E-05	8.80E-02	2.30E-01	1.62E-01
Cell Communication	COL4A2	rs387298	omental adipose	4.30E-08	2.80E-01	7.40E-02	9.54E-01
Cell Communication	COL4A2	rs387298	subcutaneous adipose	4.80E-08	2.80E-01	7.40E-02	9.54E-01
Cell Communication	COL4A4	rs1574248	subcutaneous adipose	4.00E-21	9.00E-02	2.20E-04	5.30E-01
Cell Communication	COL5A1	rs9410002	subcutaneous adipose	7.90E-05	NA	6.20E-01	NA
Cell Communication	COL5A2	rs1356168	omental adipose	1.40E-05	1.40E-01	2.50E-02	8.11E-01
Cell Communication	COL5A3	rs889130	subcutaneous adipose	4.70E-06	NA	5.20E-02	NA
Cell Communication	COL6A1	rs1736424	omental adipose	6.80E-05	5.40E-01	2.80E-01	9.83E-01
Cell Communication	COL6A2	rs2839160	subcutaneous adipose	4.40E-06	3.30E-01	2.10E-01	7.34E-01
Cell Communication	DSC2	rs4799305	omental adipose	1.30E-05	4.00E-01	2.40E-01	8.26E-01
Cell Communication	DSC3	rs2047082	omental adipose	6.40E-05	NA	1.40E-01	NA
Cell Communication	DSG1	rs1426308	liver	5.80E-05	7.30E-01	1.40E-01	4.77E-01
Cell Communication	DSG2	rs1031729	liver	8.30E-05	4.30E-01	2.30E-01	8.99E-01
Cell Communication	FN1	rs6753702	liver	4.20E-05	4.10E-02	3.50E-02	2.57E-01
Cell Communication	GJA1	rs2679651	subcutaneous adipose	2.60E-05	6.00E-01	1.20E-01	5.99E-01
Cell Communication	GJA10	rs13374459	subcutaneous adipose	8.50E-05	1.00E-02	3.90E-02	5.64E-02
Cell Communication	GJA4	rs12076918	liver	4.50E-05	NA	1.80E-01	NA
Cell Communication	GJA5	rs1908627	omental adipose	7.80E-17	5.90E-01	6.80E-01	6.78E-01
Cell Communication	GJA5	rs1908627	subcutaneous adipose	5.10E-07	5.90E-01	6.80E-01	6.78E-01

Pathway	Gene	eSNP	Tissue	SNP-Expression Pvalue	SNP-T2D Pvalue		
					DIAGRAM	WTCCC	Non-WTCCC
Cell Communication	GJA7	rs4239142	omental adipose	6.80E-05	1.80E-01	1.50E-02	9.19E-01
Cell Communication	IBSP	rs340643	subcutaneous adipose	0.00012	0.72	0.9	0.69225874
Cell Communication	ITGA6	rs1882165	liver	1.00E-04	6.20E-01	4.40E-01	9.48E-01
Cell Communication	KRT1	rs17118093	omental adipose	5.80E-14	NA	3.10E-04	NA
Cell Communication	KRT1	rs17118093	subcutaneous adipose	2.40E-08	NA	3.10E-04	NA
Cell Communication	KRT10	rs1558282	subcutaneous adipose	3.50E-05	8.50E-01	2.10E-01	4.54E-01
Cell Communication	KRT12	rs2239710	liver	9.30E-05	3.80E-01	9.80E-01	2.31E-01
Cell Communication	KRT16	rs4796588	omental adipose	1.90E-06	5.80E-01	3.50E-01	9.89E-01
Cell Communication	KRT16	rs4796588	subcutaneous adipose	1.50E-25	5.80E-01	3.50E-01	9.89E-01
Cell Communication	KRT16	rs7208807	omental adipose	2.60E-06	5.50E-01	3.50E-01	9.40E-01
Cell Communication	KRT16	rs7208807	subcutaneous adipose	4.80E-25	5.50E-01	3.50E-01	9.40E-01
Cell Communication	KRT23	rs1859251	omental adipose	0.00011	0.19	0.9	0.08612267
Cell Communication	KRT24	rs2014704	omental adipose	8.60E-06	9.80E-01	1.90E-01	3.07E-01
Cell Communication	KRT27	rs17558560	omental adipose	3.30E-09	1.70E-01	1.30E-01	4.95E-01
Cell Communication	KRT31	rs7223332	omental adipose	0.00011	1	0.25	0.35362011
Cell Communication	KRT32	rs11652600	liver	4.10E-05	6.00E-01	2.20E-01	7.94E-01
Cell Communication	KRT32	rs4796754	liver	5.90E-05	6.70E-01	2.20E-01	6.91E-01
Cell Communication	KRT5	rs3847831	omental adipose	1.10E-08	3.20E-02	1.90E-02	2.79E-01
Cell Communication	KRT6A	rs1907671	liver	2.60E-05	9.90E-01	9.10E-02	1.78E-01
Cell Communication	KRT6C	rs607860	omental adipose	9.60E-06	1.10E-02	5.20E-03	2.03E-01
Cell Communication	KRT7	rs6580870	omental adipose	0.00013	0.11	0.0069	0.96973766
Cell Communication	KRT73	rs17117158	subcutaneous adipose	3.70E-05	6.70E-01	2.70E-01	7.65E-01
Cell Communication	KRT77	rs10783528	subcutaneous adipose	2.20E-06	5.90E-01	4.00E-01	9.45E-01
Cell Communication	KRT8	rs11170319	liver	1.00E-04	8.00E-01	1.00E-01	3.30E-01
Cell Communication	LAMA1	rs2567259	subcutaneous adipose	2.60E-05	3.20E-02	1.90E-01	5.52E-02
Cell Communication	LAMA3	rs11662907	omental adipose	1.50E-10	8.50E-01	1.20E-01	3.21E-01
Cell Communication	LAMA4	rs925755	liver	9.40E-05	1.80E-01	5.30E-01	1.76E-01
Cell Communication	LAMA5	rs10460672	liver	5.70E-06	1.00E-02	2.00E-02	8.98E-02
Cell Communication	LAMB1	rs4730287	liver	6.60E-19	2.90E-01	2.70E-02	7.52E-01
Cell Communication	LAMB3	rs2298928	subcutaneous adipose	0.00011	0.93	0.17	0.32479185



Pathway	Gene	eSNP	Tissue	SNP-Expression Pvalue	SNP-T2D Pvalue		
					DIAGRAM	WTCCC	Non-WTCCC
Cell Communication	LAMB4	rs1636958	omental adipose	5.40E-05	6.60E-01	4.30E-01	9.79E-01
Cell Communication	LAMC1	rs9425569	liver	6.90E-05	4.50E-02	1.10E-01	1.36E-01
Cell Communication	LAMC1	rs9425569	omental adipose	1.20E-12	4.50E-02	1.10E-01	1.36E-01
Cell Communication	LAMC1	rs9425569	subcutaneous adipose	8.00E-17	4.50E-02	1.10E-01	1.36E-01
Cell Communication	LAMC2	rs12739316	omental adipose	3.80E-14	NA	2.20E-01	NA
Cell Communication	LAMC3	rs3765567	omental adipose	6.40E-05	6.50E-01	4.90E-01	9.42E-01
Cell Communication	RELN	rs7787675	subcutaneous adipose	7.70E-05	6.10E-01	2.50E-01	8.26E-01
Cell Communication	SPP1	rs1463091	liver	4.60E-06	3.60E-03	2.00E-03	1.22E-01
Cell Communication	THBS1	rs11070174	omental adipose	4.10E-05	8.30E-01	4.10E-01	7.14E-01
Cell Communication	THBS2	rs2494673	omental adipose	1.60E-05	NA	8.70E-01	NA
Cell Communication	THBS3	rs4246529	subcutaneous adipose	3.40E-05	2.90E-01	1.10E-01	8.58E-01
Cell Communication	THBS4	rs11749003	omental adipose	0.00012	0.3	0.052	0.89695784
Cell Communication	TNC	rs1335332	liver	1.00E-10	4.60E-01	6.10E-02	6.27E-01
Cell Communication	TNN	rs6696455	omental adipose	8.90E-05	8.20E-02	3.40E-02	4.82E-01
Cell Communication	TNN	rs6696455	subcutaneous adipose	1.30E-05	8.20E-02	3.40E-02	4.82E-01
Cell Communication	TNXB	rs2596503	omental adipose	1.00E-04	2.40E-03	3.20E-03	6.68E-02
Cell Communication	VIM	rs359288	liver	4.60E-06	2.60E-01	1.90E-01	6.13E-01
Complement and coagulation cascades	A2M	rs12822596	omental adipose	2.00E-05	9.50E-01	2.00E-01	3.44E-01
Complement and coagulation cascades	A2M	rs7309821	omental adipose	2.10E-05	9.40E-01	2.00E-01	3.53E-01
Complement and coagulation cascades	BDKRB2	rs4349080	subcutaneous adipose	2.20E-05	1.40E-01	2.10E-01	3.00E-01
Complement and coagulation cascades	C1QC	rs17433871	liver	2.70E-06	1.60E-01	3.00E-01	2.66E-01
Complement and coagulation cascades	C1QC	rs17433871	omental adipose	2.80E-06	1.60E-01	3.00E-01	2.66E-01
Complement and coagulation cascades	C1QC	rs17433871	subcutaneous adipose	1.50E-06	1.60E-01	3.00E-01	2.66E-01
Complement and coagulation cascades	C2	rs3130531	omental adipose	6.80E-05	5.10E-02	2.30E-02	3.83E-01

Pathway	Gene	eSNP	Tissue	SNP-Expression Pvalue	SNP-T2D Pvalue		
					DIAGRAM	WTCCC	Non-WTCCC
Complement and coagulation cascades	C4A	rs1077394	liver	2.70E-07	2.10E-05	5.50E-04	1.85E-03
Complement and coagulation cascades	C4A	rs1077394	omental adipose	1.70E-09	2.10E-05	5.50E-04	1.85E-03
Complement and coagulation cascades	C4A	rs1077394	subcutaneous adipose	2.00E-10	2.10E-05	5.50E-04	1.85E-03
Complement and coagulation cascades	C4B	rs1077394	liver	2.20E-05	2.10E-05	5.50E-04	1.85E-03
Complement and coagulation cascades	C4B	rs1077394	omental adipose	3.20E-08	2.10E-05	5.50E-04	1.85E-03
Complement and coagulation cascades	C4B	rs1077394	subcutaneous adipose	8.20E-10	2.10E-05	5.50E-04	1.85E-03
Complement and coagulation cascades	C4BPA	rs6690037	liver	3.80E-06	6.80E-01	7.20E-02	3.80E-01
Complement and coagulation cascades	C4BPA	rs6690037	omental adipose	8.50E-08	6.80E-01	7.20E-02	3.80E-01
Complement and coagulation cascades	C4BPB	rs6690037	omental adipose	3.70E-14	6.80E-01	7.20E-02	3.80E-01
Complement and coagulation cascades	C4BPB	rs6690037	subcutaneous adipose	1.80E-09	6.80E-01	7.20E-02	3.80E-01
Complement and coagulation cascades	C5	rs10818503	subcutaneous adipose	1.70E-05	8.80E-03	4.50E-03	1.79E-01
Complement and coagulation cascades	C6	rs749629	omental adipose	1.40E-05	5.00E-01	3.00E-02	4.15E-01
Complement and coagulation cascades	C6	rs749629	subcutaneous adipose	8.70E-07	5.00E-01	3.00E-02	4.15E-01
Complement and coagulation cascades	C7	rs391781	liver	5.00E-05	8.20E-01	6.20E-01	9.33E-01
Complement and coagulation cascades	C7	rs391781	omental adipose	6.60E-06	8.20E-01	6.20E-01	9.33E-01
Complement and coagulation cascades	C8B	rs679350	liver	9.00E-11	4.70E-01	1.40E-02	3.27E-01
Complement and coagulation cascades	C8G	rs4880158	liver	5.60E-05	1.80E-02	2.10E-02	1.56E-01

Pathway	Gene	eSNP	Tissue	SNP-Expression Pvalue	SNP-T2D Pvalue		
					DIAGRAM	WTCCC	Non-WTCCC
Complement and coagulation cascades	C8G	rs4880162	liver	5.60E-05	1.90E-02	2.10E-02	1.64E-01
Complement and coagulation cascades	C9	rs10512696	omental adipose	8.30E-08	6.00E-01	4.00E-01	9.61E-01
Complement and coagulation cascades	CD46	rs7144	liver	2.80E-05	6.30E-01	1.60E-02	2.03E-01
Complement and coagulation cascades	CD55	rs6672985	liver	3.40E-06	3.10E-01	1.50E-01	8.05E-01
Complement and coagulation cascades	CD59	rs704700	liver	2.80E-08	4.60E-02	1.40E-02	4.32E-01
Complement and coagulation cascades	CD59	rs704700	omental adipose	8.00E-08	4.60E-02	1.40E-02	4.32E-01
Complement and coagulation cascades	CD59	rs704700	subcutaneous adipose	7.00E-06	4.60E-02	1.40E-02	4.32E-01
Complement and coagulation cascades	CFB	rs1265093	omental adipose	9.00E-06	1.70E-02	3.60E-02	1.05E-01
Complement and coagulation cascades	CFD	rs1683591	liver	5.50E-13	7.60E-01	1.50E-01	4.61E-01
Complement and coagulation cascades	CFH	rs4085749	omental adipose	2.70E-07	8.40E-01	8.90E-02	2.75E-01
Complement and coagulation cascades	CFH	rs4085749	subcutaneous adipose	3.90E-05	8.40E-01	8.90E-02	2.75E-01
Complement and coagulation cascades	CFI	rs3181187	liver	3.80E-05	8.50E-01	3.20E-02	1.42E-01
Complement and coagulation cascades	CPB2	rs718530	liver	9.00E-07	1.60E-01	6.20E-02	6.57E-01
Complement and coagulation cascades	CR1	rs1323720	liver	1.10E-09	6.30E-03	6.30E-03	1.13E-01
Complement and coagulation cascades	CR1	rs1323720	omental adipose	1.40E-06	6.30E-03	6.30E-03	1.13E-01
Complement and coagulation cascades	CR1	rs1323720	subcutaneous adipose	7.50E-10	6.30E-03	6.30E-03	1.13E-01
Complement and coagulation cascades	F10	rs3024718	omental adipose	6.00E-05	4.70E-01	3.70E-02	4.97E-01

Pathway	Gene	eSNP	Tissue	SNP-Expression Pvalue	SNP-T2D Pvalue		
					DIAGRAM	WTCCC	Non-WTCCC
Complement and coagulation cascades	F11	rs3822058	liver	0	0.83	0.058	0.21837794
Complement and coagulation cascades	F11	rs3822058	liver	1.50E-21	8.30E-01	5.80E-02	2.18E-01
Complement and coagulation cascades	F12	rs6420094	liver	3.10E-06	6.90E-01	1.60E-01	5.62E-01
Complement and coagulation cascades	F13A1	rs1058242	liver	9.50E-05	6.90E-01	2.20E-02	1.96E-01
Complement and coagulation cascades	F13B	rs4085749	liver	1.70E-19	8.40E-01	8.90E-02	2.75E-01
Complement and coagulation cascades	F2	rs2291443	liver	9.50E-06	5.30E-01	4.20E-01	8.25E-01
Complement and coagulation cascades	F2R	rs250760	omental adipose	4.80E-05	3.50E-02	2.20E-01	5.30E-02
Complement and coagulation cascades	F5	rs3917744	omental adipose	1.40E-05	1.80E-02	1.80E-01	2.78E-02
Complement and coagulation cascades	F7	rs12583706	liver	4.30E-05	1.10E-01	1.50E-01	2.91E-01
Complement and coagulation cascades	FGB	rs2227401	liver	9.40E-18	2.20E-01	1.10E-01	6.80E-01
Complement and coagulation cascades	FGG	rs4463047	liver	1.20E-05	NA	1.00E-01	NA
Complement and coagulation cascades	KLK3	rs2735839	subcutaneous adipose	8.30E-05	8.00E-01	7.90E-02	2.87E-01
Complement and coagulation cascades	KLKB1	rs3822058	omental adipose	4.20E-05	8.30E-01	5.80E-02	2.18E-01
Complement and coagulation cascades	MASP1	rs698084	omental adipose	3.10E-11	5.00E-01	5.40E-02	5.36E-01
Complement and coagulation cascades	MASP1	rs698084	subcutaneous adipose	4.60E-23	5.00E-01	5.40E-02	5.36E-01
Complement and coagulation cascades	MASP2	rs1033638	liver	0	0.12	0.056	0.53840684
Complement and coagulation cascades	MASP2	rs1033638	liver	5.40E-37	1.20E-01	5.60E-02	5.38E-01

Pathway	Gene	eSNP	Tissue	SNP-Expression Pvalue	SNP-T2D Pvalue		
					DIAGRAM	WTCCC	Non-WTCCC
Complement and coagulation cascades	MBL2	rs12258303	liver	6.80E-07	1.50E-01	1.80E-02	9.29E-01
Complement and coagulation cascades	PLAT	rs7015100	liver	8.30E-05	9.80E-01	3.70E-01	4.91E-01
Complement and coagulation cascades	PLAT	rs7015100	subcutaneous adipose	9.80E-05	9.80E-01	3.70E-01	4.91E-01
Complement and coagulation cascades	PROC	rs6755028	liver	6.90E-05	1.00E+00	5.80E-01	6.55E-01
Complement and coagulation cascades	PROS1	rs9289536	omental adipose	9.90E-06	5.70E-01	5.60E-01	7.51E-01
Complement and coagulation cascades	PROS1	rs9289536	subcutaneous adipose	7.10E-05	5.70E-01	5.60E-01	7.51E-01
Complement and coagulation cascades	SERPINA1	rs760335	liver	7.90E-05	9.00E-01	1.60E-01	3.38E-01
Complement and coagulation cascades	SERPINA1	rs760335	omental adipose	0.00012	0.9	0.16	0.33770148
Complement and coagulation cascades	SERPINA1	rs760335	subcutaneous adipose	3.90E-05	9.00E-01	1.60E-01	3.38E-01
Complement and coagulation cascades	SERPINA5	rs1955656	liver	8.60E-05	9.10E-01	1.20E-01	2.73E-01
Complement and coagulation cascades	SERPINC1	rs1884994	omental adipose	1.10E-09	9.10E-01	1.50E-01	3.15E-01
Complement and coagulation cascades	SERPINC1	rs1884994	subcutaneous adipose	1.20E-14	9.10E-01	1.50E-01	3.15E-01
Complement and coagulation cascades	SERPIND1	rs9612573	omental adipose	2.10E-06	6.80E-01	5.20E-02	3.20E-01
Complement and coagulation cascades	SERPINF2	rs11657222	omental adipose	4.80E-21	NA	1.90E-01	NA
Complement and coagulation cascades	SERPINF2	rs11657222	subcutaneous adipose	1.60E-14	NA	1.90E-01	NA
Complement and coagulation cascades	TFPI	rs12104503	omental adipose	8.60E-05	6.10E-01	2.00E-01	7.44E-01
Ether lipid metabolism	AGPAT3	rs743463	subcutaneous adipose	5.00E-05	2.70E-01	3.50E-01	4.38E-01
Ether lipid metabolism	AGPAT4	rs3798923	liver	1.40E-06	5.90E-01	1.60E-01	7.00E-01

Pathway	Gene	eSNP	Tissue	SNP-Expression Pvalue	SNP-T2D Pvalue		
					DIAGRAM	WTCCC	Non-WTCCC
Ether lipid metabolism	AGPAT6	rs919035	liver	1.10E-11	3.20E-03	1.40E-01	3.75E-03
Ether lipid metabolism	AGPS	rs13404970	subcutaneous adipose	8.60E-05	4.40E-01	1.10E-02	3.27E-01
Ether lipid metabolism	CHPT1	rs10823	liver	6.90E-05	2.60E-01	2.70E-01	5.01E-01
Ether lipid metabolism	CHPT1	rs10823	omental adipose	5.10E-11	2.60E-01	2.70E-01	5.01E-01
Ether lipid metabolism	ENPP6	rs4241784	omental adipose	1.70E-05	3.90E-01	1.10E-01	9.23E-01
Ether lipid metabolism	ENPP6	rs4241784	subcutaneous adipose	1.60E-06	3.90E-01	1.10E-01	9.23E-01
Ether lipid metabolism	LYCAT	rs7583600	liver	1.20E-12	1.30E-02	8.40E-04	4.52E-01
Ether lipid metabolism	LYCAT	rs7583600	omental adipose	2.00E-05	1.30E-02	8.40E-04	4.52E-01
Ether lipid metabolism	LYCAT	rs7583600	subcutaneous adipose	9.60E-09	1.30E-02	8.40E-04	4.52E-01
Ether lipid metabolism	PAFAH1B1	rs4790344	subcutaneous adipose	1.60E-06	4.70E-01	3.30E-02	4.73E-01
Ether lipid metabolism	PAFAH1B2	rs12271161	subcutaneous adipose	7.10E-07	1.00E-01	1.50E-01	2.63E-01
Ether lipid metabolism	PAFAH2	rs11247954	liver	2.50E-06	NA	8.90E-02	NA
Ether lipid metabolism	PLA2G12A	rs6533444	omental adipose	3.90E-10	5.30E-01	2.80E-03	1.24E-01
Ether lipid metabolism	PLA2G1B	rs10774518	subcutaneous adipose	9.80E-05	4.80E-01	6.30E-01	5.54E-01
Ether lipid metabolism	PLA2G1B	rs10774519	subcutaneous adipose	4.30E-05	5.10E-01	6.30E-01	5.99E-01
Ether lipid metabolism	PLA2G2A	rs6672057	liver	6.80E-18	8.60E-01	2.40E-02	1.15E-01
Ether lipid metabolism	PLA2G4A	rs6683416	omental adipose	7.90E-10	1.00E-01	2.20E-01	1.96E-01
Ether lipid metabolism	PLA2G4A	rs6683416	subcutaneous adipose	3.60E-06	1.00E-01	2.20E-01	1.96E-01
Ether lipid metabolism	PLA2G4B	rs2303518	omental adipose	0.00011	0.019	0.003	0.38990595
Ether lipid metabolism	PLA2G5	rs17402685	subcutaneous adipose	1.10E-05	9.30E-01	8.00E-02	1.97E-01
Ether lipid metabolism	PLA2G6	rs132966	liver	0	NA	0.68	NA
Ether lipid metabolism	PLD1	rs4894512	subcutaneous adipose	1.00E-04	9.60E-01	2.60E-01	4.02E-01
Ether lipid metabolism	PLD2	rs2286670	liver	2.40E-06	NA	1.00E-01	NA
Ether lipid metabolism	PLD2	rs2286670	omental adipose	2.70E-06	NA	1.00E-01	NA
Ether lipid metabolism	PLD2	rs2286670	subcutaneous adipose	1.10E-09	NA	1.00E-01	NA
Ether lipid metabolism	PPAP2A	rs231622	omental adipose	2.70E-06	2.60E-01	4.30E-02	9.44E-01
Ether lipid metabolism	PPAP2B	rs1777276	omental adipose	6.50E-05	9.60E-01	4.90E-01	6.26E-01
Ether lipid metabolism	PPAP2C	rs11878315	omental adipose	6.30E-27	6.20E-01	1.40E-01	6.15E-01
Ether lipid metabolism	PPAP2C	rs11878315	subcutaneous adipose	2.20E-15	6.20E-01	1.40E-01	6.15E-01

Pathway	Gene	eSNP	Tissue	SNP-Expression Pvalue	SNP-T2D Pvalue		
					DIAGRAM	WTCCC	Non-WTCCC
Glycan structures - biosynthesis 1	ALG1	rs3760030	liver	7.60E-34	NA	3.30E-01	NA
Glycan structures - biosynthesis 1	ALG1	rs3760030	omental adipose	7.10E-42	NA	3.30E-01	NA
Glycan structures - biosynthesis 1	ALG1	rs3760030	subcutaneous adipose	1.80E-33	NA	3.30E-01	NA
Glycan structures - biosynthesis 1	ALG10	rs11053254	liver	2.40E-06	5.20E-01	9.20E-02	6.41E-01
Glycan structures - biosynthesis 1	ALG11	rs6650384	liver	0	0.42	0.52	0.54877316
Glycan structures - biosynthesis 1	ALG12	rs6009870	omental adipose	4.90E-06	NA	1.10E-01	NA
Glycan structures - biosynthesis 1	ALG14	rs3789445	subcutaneous adipose	1.40E-05	5.30E-02	6.10E-04	9.36E-01
Glycan structures - biosynthesis 1	ALG3	rs17774396	omental adipose	4.20E-09	NA	3.20E-02	NA
Glycan structures - biosynthesis 1	ALG3	rs17774396	subcutaneous adipose	2.70E-08	NA	3.20E-02	NA
Glycan structures - biosynthesis 1	ALG6	rs3004318	omental adipose	4.00E-05	9.30E-01	3.70E-01	5.48E-01
Glycan structures - biosynthesis 1	ALG8	rs567697	liver	1.60E-07	1.40E-01	2.20E-01	2.90E-01
Glycan structures - biosynthesis 1	ALG8	rs567697	omental adipose	2.80E-08	1.40E-01	2.20E-01	2.90E-01
Glycan structures - biosynthesis 1	ALG8	rs567697	subcutaneous adipose	2.70E-05	1.40E-01	2.20E-01	2.90E-01
Glycan structures - biosynthesis 1	B3GAT1	rs10894863	liver	1.20E-12	NA	5.20E-03	NA
Glycan structures - biosynthesis 1	B4GALT1	rs10971438	subcutaneous adipose	5.30E-05	5.90E-01	1.40E-01	6.58E-01
Glycan structures - biosynthesis 1	B4GALT3	rs11576830	subcutaneous adipose	3.50E-05	3.50E-01	3.70E-01	5.66E-01
Glycan structures - biosynthesis 1	B4GALT4	rs3936077	subcutaneous adipose	1.20E-05	4.30E-01	2.00E-01	9.51E-01
Glycan structures - biosynthesis 1	B4GALT5	rs1056198	subcutaneous adipose	0.00011	0.52	0.44	0.7875104
Glycan structures - biosynthesis 1	B4GALT5	rs4810997	subcutaneous adipose	8.70E-05	6.70E-01	4.40E-01	9.75E-01

Pathway	Gene	eSNP	Tissue	SNP-Expression Pvalue	SNP-T2D Pvalue		
					DIAGRAM	WTCCC	Non-WTCCC
Glycan structures - biosynthesis 1	C1GALT1	rs10487592	liver	2.60E-06	9.00E-01	1.00E-02	5.71E-02
Glycan structures - biosynthesis 1	C1GALT1	rs10487592	omental adipose	5.40E-12	9.00E-01	1.00E-02	5.71E-02
Glycan structures - biosynthesis 1	C1GALT1	rs10487592	subcutaneous adipose	5.10E-13	9.00E-01	1.00E-02	5.71E-02
Glycan structures - biosynthesis 1	CHST1	rs1348965	omental adipose	5.20E-07	6.00E-02	2.70E-02	4.09E-01
Glycan structures - biosynthesis 1	CHST11	rs2463019	omental adipose	5.00E-05	2.70E-01	4.70E-01	3.44E-01
Glycan structures - biosynthesis 1	CHST12	rs1548597	liver	2.60E-05	NA	1.50E-01	NA
Glycan structures - biosynthesis 1	CHST12	rs1548597	omental adipose	5.10E-05	NA	1.50E-01	NA
Glycan structures - biosynthesis 1	CHST13	rs17742502	omental adipose	3.20E-12	3.70E-01	4.00E-02	6.80E-01
Glycan structures - biosynthesis 1	CHST13	rs17742502	subcutaneous adipose	1.20E-10	3.70E-01	4.00E-02	6.80E-01
Glycan structures - biosynthesis 1	CHST3	rs10823878	liver	0	0.95	0.13	0.25681937
Glycan structures - biosynthesis 1	CHST4	rs904763	omental adipose	4.80E-06	1.40E-01	1.20E-01	4.28E-01
Glycan structures - biosynthesis 1	CHST6	rs12928076	liver	6.40E-06	2.80E-01	6.80E-01	2.44E-01
Glycan structures - biosynthesis 1	DAD1	rs3811189	subcutaneous adipose	0.00011	0.45	0.094	0.76208262
Glycan structures - biosynthesis 1	DDOST	rs3738133	subcutaneous adipose	6.10E-05	3.10E-01	6.60E-01	2.92E-01
Glycan structures - biosynthesis 1	DPAGT1	rs639373	liver	2.80E-06	1.30E-01	7.00E-01	7.36E-02
Glycan structures - biosynthesis 1	EXT1	rs11562664	subcutaneous adipose	4.00E-05	4.80E-01	4.60E-02	5.29E-01
Glycan structures - biosynthesis 1	EXT2	rs11037858	omental adipose	3.60E-06	6.00E-02	1.50E-02	5.18E-01
Glycan structures - biosynthesis 1	EXT2	rs11037858	subcutaneous adipose	6.90E-06	6.00E-02	1.50E-02	5.18E-01
Glycan structures - biosynthesis 1	EXTL1	rs12074420	omental adipose	9.10E-05	3.90E-01	3.50E-01	6.61E-01



Pathway	Gene	eSNP	Tissue	SNP-Expression Pvalue	SNP-T2D Pvalue		
					DIAGRAM	WTCCC	Non-WTCCC
Glycan structures - biosynthesis 1	EXTL2	rs3737580	omental adipose	3.30E-06	9.90E-01	5.20E-01	6.16E-01
Glycan structures - biosynthesis 1	EXTL2	rs3737580	subcutaneous adipose	9.40E-08	9.90E-01	5.20E-01	6.16E-01
Glycan structures - biosynthesis 1	FUT8	rs10132229	omental adipose	3.80E-05	6.60E-01	1.30E-01	5.41E-01
Glycan structures - biosynthesis 1	GALNT10	rs6873488	omental adipose	8.40E-07	2.30E-02	2.10E-03	5.01E-01
Glycan structures - biosynthesis 1	GALNT10	rs6873488	subcutaneous adipose	1.70E-07	2.30E-02	2.10E-03	5.01E-01
Glycan structures - biosynthesis 1	GALNT11	rs1029949	liver	0	0.51	0.9	0.41658258
Glycan structures - biosynthesis 1	GALNT13	rs12693824	subcutaneous adipose	2.70E-05	4.50E-01	7.10E-03	2.61E-01
Glycan structures - biosynthesis 1	GALNT13	rs7558722	subcutaneous adipose	2.20E-05	4.70E-01	7.10E-03	2.42E-01
Glycan structures - biosynthesis 1	GALNT14	rs12990027	liver	9.90E-06	6.20E-01	2.70E-01	8.40E-01
Glycan structures - biosynthesis 1	GALNT14	rs12991678	liver	7.20E-06	8.00E-01	2.70E-01	5.90E-01
Glycan structures - biosynthesis 1	GALNT14	rs4952023	liver	8.10E-06	6.30E-01	2.70E-01	8.25E-01
Glycan structures - biosynthesis 1	GALNT2	rs6687864	omental adipose	1.00E-04	8.00E-01	2.60E-01	5.78E-01
Glycan structures - biosynthesis 1	GALNT4	rs17782889	subcutaneous adipose	2.50E-05	4.80E-02	4.20E-02	2.70E-01
Glycan structures - biosynthesis 1	GALNT6	rs10876162	omental adipose	1.50E-05	6.50E-01	4.60E-01	9.73E-01
Glycan structures - biosynthesis 1	GALNT8	rs17776335	subcutaneous adipose	4.40E-05	6.10E-01	4.90E-01	8.80E-01
Glycan structures - biosynthesis 1	GALNT9	rs12319239	liver	4.90E-05	6.10E-01	5.30E-01	8.41E-01
Glycan structures - biosynthesis 1	GALNTL1	rs11158808	omental adipose	1.40E-05	6.20E-01	3.50E-01	9.47E-01
Glycan structures - biosynthesis 1	GALNTL2	rs6766571	liver	8.70E-11	1.20E-02	1.10E-02	1.52E-01
Glycan structures - biosynthesis 1	GALNTL4	rs10765880	subcutaneous adipose	2.20E-05	3.30E-01	3.00E-03	2.97E-01

Pathway	Gene	eSNP	Tissue	SNP-Expression Pvalue	SNP-T2D Pvalue		
					DIAGRAM	WTCCC	Non-WTCCC
Glycan structures - biosynthesis 1	GCNT1	rs890152	subcutaneous adipose	3.70E-05	5.90E-01	7.40E-01	6.31E-01
Glycan structures - biosynthesis 1	GCNT3	rs6494102	liver	2.60E-05	3.20E-01	6.00E-01	3.39E-01
Glycan structures - biosynthesis 1	HS3ST1	rs923997	subcutaneous adipose	5.30E-09	8.80E-01	1.30E-01	3.12E-01
Glycan structures - biosynthesis 1	HS3ST3A1	rs11869775	omental adipose	8.00E-06	3.00E-03	1.60E-03	1.16E-01
Glycan structures - biosynthesis 1	HS3ST3B1	rs17669311	liver	9.90E-09	3.00E-02	4.90E-02	1.55E-01
Glycan structures - biosynthesis 1	HS6ST1	rs3732209	liver	0	0.85	0.25	0.5058482
Glycan structures - biosynthesis 1	MAN1A1	rs924397	liver	5.40E-07	3.00E-01	5.10E-02	8.92E-01
Glycan structures - biosynthesis 1	MAN1A2	rs2767322	subcutaneous adipose	2.70E-06	8.40E-02	4.90E-03	8.98E-01
Glycan structures - biosynthesis 1	MAN1B1	rs4880201	liver	7.10E-07	NA	8.20E-02	NA
Glycan structures - biosynthesis 1	MAN1B1	rs4880201	omental adipose	1.30E-05	NA	8.20E-02	NA
Glycan structures - biosynthesis 1	MAN1B1	rs4880201	subcutaneous adipose	1.60E-05	NA	8.20E-02	NA
Glycan structures - biosynthesis 1	MAN1C1	rs760599	liver	3.20E-10	9.50E-04	2.00E-01	3.85E-04
Glycan structures - biosynthesis 1	MAN1C1	rs760599	liver	0	0.00095	0.2	0.00038527
Glycan structures - biosynthesis 1	MAN2A1	rs11744065	subcutaneous adipose	5.70E-05	2.40E-01	6.90E-03	5.83E-01
Glycan structures - biosynthesis 1	MGAT2	rs4900927	liver	1.00E-04	1.50E-01	8.50E-03	9.00E-01
Glycan structures - biosynthesis 1	MGAT2	rs4900928	liver	9.50E-05	1.80E-01	8.50E-03	7.93E-01
Glycan structures - biosynthesis 1	MGAT3	rs5757373	omental adipose	3.80E-05	2.90E-01	3.80E-01	4.48E-01
Glycan structures - biosynthesis 1	MGAT4A	rs2276645	subcutaneous adipose	9.50E-05	9.70E-01	1.70E-01	2.92E-01
Glycan structures - biosynthesis 1	MGAT5	rs3748900	subcutaneous adipose	4.90E-05	3.50E-01	2.00E-01	7.93E-01

Pathway	Gene	eSNP	Tissue	SNP-Expression Pvalue	SNP-T2D Pvalue		
					DIAGRAM	WTCCC	Non-WTCCC
Glycan structures - biosynthesis 1	NDST1	rs4428396	subcutaneous adipose	9.80E-06	6.10E-01	1.90E-01	7.27E-01
Glycan structures - biosynthesis 1	NDST2	rs2292307	omental adipose	1.50E-05	5.90E-01	6.10E-01	7.37E-01
Glycan structures - biosynthesis 1	NDST2	rs4082339	omental adipose	1.50E-05	5.70E-01	6.10E-01	7.07E-01
Glycan structures - biosynthesis 1	POMGNT1	rs12410307	liver	6.00E-06	3.40E-01	7.30E-01	2.96E-01
Glycan structures - biosynthesis 1	POMT2	rs17105732	subcutaneous adipose	0.00011	0.49	0.3	0.9032131
Glycan structures - biosynthesis 1	RPN1	rs7429360	omental adipose	4.40E-05	2.10E-01	2.30E-01	4.41E-01
Glycan structures - biosynthesis 1	RPN1	rs7429360	subcutaneous adipose	2.40E-05	2.10E-01	2.30E-01	4.41E-01
Glycan structures - biosynthesis 1	ST3GAL1	rs12678229	liver	7.00E-05	4.30E-01	4.50E-03	2.32E-01
Glycan structures - biosynthesis 1	ST3GAL3	rs2782641	subcutaneous adipose	1.00E-04	3.30E-02	1.00E-03	7.62E-01
Glycan structures - biosynthesis 1	ST3GAL4	rs11220477	liver	1.00E-04	9.70E-01	7.30E-02	1.63E-01
Glycan structures - biosynthesis 1	STT3B	rs3792551	omental adipose	1.50E-13	NA	1.70E-02	NA
Glycan structures - biosynthesis 1	STT3B	rs3792551	subcutaneous adipose	2.70E-06	NA	1.70E-02	NA
Glycan structures - biosynthesis 1	WBSCR17	rs2079406	subcutaneous adipose	2.30E-05	8.40E-01	1.50E-01	3.78E-01
Glycan structures - biosynthesis 1	XYLT2	rs16949053	liver	3.80E-05	NA	3.00E-02	NA
Glycosylphosphatidylinositol(GPI)-anchor biosynthesis	CDC91L1	rs6120400	omental adipose	6.50E-05	4.90E-01	8.90E-01	3.98E-01
Glycosylphosphatidylinositol(GPI)-anchor biosynthesis	DPM2	rs7874186	liver	7.80E-08	2.10E-01	3.20E-03	5.23E-01
Glycosylphosphatidylinositol(GPI)-anchor biosynthesis	DPM2	rs7874186	omental adipose	3.00E-10	2.10E-01	3.20E-03	5.23E-01

Pathway	Gene	eSNP	Tissue	SNP-Expression Pvalue	SNP-T2D Pvalue		
					DIAGRAM	WTCCC	Non-WTCCC
Glycosylphosphatidylinositol(GPI)-anchor biosynthesis	DPM2	rs7874186	subcutaneous adipose	7.00E-07	2.10E-01	3.20E-03	5.23E-01
Glycosylphosphatidylinositol(GPI)-anchor biosynthesis	GPAA1	rs11780874	liver	5.30E-06	4.90E-01	6.60E-03	2.18E-01
Glycosylphosphatidylinositol(GPI)-anchor biosynthesis	GPAA1	rs7822232	liver	7.20E-06	NA	6.60E-03	NA
Glycosylphosphatidylinositol(GPI)-anchor biosynthesis	GPLD1	rs3761789	subcutaneous adipose	9.10E-05	2.60E-01	1.70E-01	6.49E-01
Glycosylphosphatidylinositol(GPI)-anchor biosynthesis	PIGB	rs8040756	omental adipose	9.70E-07	3.20E-01	2.80E-03	3.03E-01
Glycosylphosphatidylinositol(GPI)-anchor biosynthesis	PIGC	rs6702667	liver	9.50E-08	5.80E-01	5.70E-01	7.57E-01
Glycosylphosphatidylinositol(GPI)-anchor biosynthesis	PIGF	rs2012022	omental adipose	1.60E-05	8.30E-02	8.60E-02	3.08E-01
Glycosylphosphatidylinositol(GPI)-anchor biosynthesis	PIGH	rs2038490	omental adipose	6.70E-05	4.20E-02	2.80E-04	9.13E-01
Glycosylphosphatidylinositol(GPI)-anchor biosynthesis	PIGK	rs12403340	liver	2.40E-06	2.70E-01	4.80E-01	3.37E-01
Glycosylphosphatidylinositol(GPI)-anchor biosynthesis	PIGK	rs12403340	omental adipose	8.60E-06	2.70E-01	4.80E-01	3.37E-01
Glycosylphosphatidylinositol(GPI)-anchor biosynthesis	PIGK	rs12403340	subcutaneous adipose	6.10E-05	2.70E-01	4.80E-01	3.37E-01
Glycosylphosphatidylinositol(GPI)-anchor biosynthesis	PIGM	rs1934078	subcutaneous adipose	4.30E-05	8.30E-01	4.20E-01	7.24E-01
Glycosylphosphatidylinositol(GPI)-anchor biosynthesis	PIGN	rs8097062	omental adipose	7.10E-05	7.10E-01	3.00E-02	2.17E-01

Pathway	Gene	eSNP	Tissue	SNP-Expression Pvalue	SNP-T2D Pvalue		
					DIAGRAM	WTCCC	Non-WTCCC
Glycosylphosphatidylinositol(GPI)-anchor biosynthesis	PIGO	rs1566595	omental adipose	7.50E-05	1.90E-02	6.10E-02	8.15E-02
Glycosylphosphatidylinositol(GPI)-anchor biosynthesis	PIGO	rs1566595	subcutaneous adipose	1.30E-05	1.90E-02	6.10E-02	8.15E-02
Glycosylphosphatidylinositol(GPI)-anchor biosynthesis	PIGP	rs2835685	omental adipose	2.40E-12	9.30E-02	1.70E-02	6.85E-01
Glycosylphosphatidylinositol(GPI)-anchor biosynthesis	PIGP	rs2835685	subcutaneous adipose	1.10E-06	9.30E-02	1.70E-02	6.85E-01
Glycosylphosphatidylinositol(GPI)-anchor biosynthesis	PIGQ	rs2017567	omental adipose	3.90E-08	4.70E-01	8.60E-02	7.02E-01
Glycosylphosphatidylinositol(GPI)-anchor biosynthesis	PIGQ	rs4144003	omental adipose	1.60E-07	5.20E-01	8.60E-02	6.23E-01
Glycosylphosphatidylinositol(GPI)-anchor biosynthesis	PIGQ	rs4984898	omental adipose	2.60E-07	5.20E-01	8.60E-02	6.23E-01
Glycosylphosphatidylinositol(GPI)-anchor biosynthesis	PIGQ	rs710925	omental adipose	5.70E-08	5.00E-01	8.60E-02	6.53E-01
Glycosylphosphatidylinositol(GPI)-anchor biosynthesis	PIGT	rs2743439	omental adipose	3.30E-09	3.20E-01	5.20E-02	8.51E-01
Glycosylphosphatidylinositol(GPI)-anchor biosynthesis	PIGT	rs2743439	subcutaneous adipose	5.40E-06	3.20E-01	5.20E-02	8.51E-01
Glycosylphosphatidylinositol(GPI)-anchor biosynthesis	PIGV	rs11807824	omental adipose	2.20E-05	2.00E-01	2.20E-01	4.31E-01
Glycosylphosphatidylinositol(GPI)-anchor biosynthesis	PIGX	rs10446497	omental adipose	3.10E-07	8.20E-01	2.80E-01	5.79E-01
Glycosylphosphatidylinositol(GPI)-anchor biosynthesis	PIGX	rs10446497	subcutaneous adipose	1.10E-06	8.20E-01	2.80E-01	5.79E-01

Pathway	Gene	eSNP	Tissue	SNP-Expression Pvalue	SNP-T2D Pvalue		
					DIAGRAM	WTCCC	Non-WTCCC
Hematopoietic cell lineage	ANPEP	rs4932145	omental adipose	1.10E-06	6.90E-02	1.40E-02	5.89E-01
Hematopoietic cell lineage	CD14	rs7721577	liver	2.80E-05	3.20E-01	6.40E-02	9.09E-01
Hematopoietic cell lineage	CD1A	rs12756570	omental adipose	3.70E-06	9.80E-02	1.20E-01	2.98E-01
Hematopoietic cell lineage	CD1A	rs12756570	subcutaneous adipose	1.20E-05	9.80E-02	1.20E-01	2.98E-01
Hematopoietic cell lineage	CD1E	rs16840121	subcutaneous adipose	8.30E-05	9.00E-01	2.40E-01	4.39E-01
Hematopoietic cell lineage	CD22	rs7251526	liver	3.70E-08	3.30E-01	1.90E-01	7.69E-01
Hematopoietic cell lineage	CD22	rs7251526	omental adipose	1.00E-11	3.30E-01	1.90E-01	7.69E-01
Hematopoietic cell lineage	CD33	rs273634	liver	1.40E-06	6.60E-01	5.90E-01	8.61E-01
Hematopoietic cell lineage	CD33	rs273634	subcutaneous adipose	2.00E-05	6.60E-01	5.90E-01	8.61E-01
Hematopoietic cell lineage	CD33	rs273639	liver	5.10E-07	6.60E-01	5.90E-01	8.61E-01
Hematopoietic cell lineage	CD33	rs273639	subcutaneous adipose	1.70E-05	6.60E-01	5.90E-01	8.61E-01
Hematopoietic cell lineage	CD36	rs1722505	omental adipose	9.50E-14	5.20E-02	1.20E-02	5.03E-01
Hematopoietic cell lineage	CD36	rs1722505	subcutaneous adipose	5.10E-14	5.20E-02	1.20E-02	5.03E-01
Hematopoietic cell lineage	CD37	rs2288478	subcutaneous adipose	2.40E-05	8.30E-02	5.80E-02	3.81E-01
Hematopoietic cell lineage	CD38	rs997250	omental adipose	8.00E-10	3.80E-01	6.60E-03	3.31E-01
Hematopoietic cell lineage	CD3D	rs529717	subcutaneous adipose	0.00012	0.57	0.13	0.66493012
Hematopoietic cell lineage	CD4	rs1055141	liver	1.40E-06	1.90E-01	5.50E-02	7.87E-01
Hematopoietic cell lineage	CD44	rs13347	omental adipose	1.40E-07	2.10E-01	3.60E-02	9.62E-01
Hematopoietic cell lineage	CD44	rs13347	subcutaneous adipose	9.50E-07	2.10E-01	3.60E-02	9.62E-01

Pathway	Gene	eSNP	Tissue	SNP-Expression Pvalue	SNP-T2D Pvalue		
					DIAGRAM	WTCCC	Non-WTCCC
Hematopoietic cell lineage	CD55	rs6672985	liver	3.40E-06	3.10E-01	1.50E-01	8.05E-01
Hematopoietic cell lineage	CD59	rs704700	liver	2.80E-08	4.60E-02	1.40E-02	4.32E-01
Hematopoietic cell lineage	CD59	rs704700	omental adipose	8.00E-08	4.60E-02	1.40E-02	4.32E-01
Hematopoietic cell lineage	CD59	rs704700	subcutaneous adipose	7.00E-06	4.60E-02	1.40E-02	4.32E-01
Hematopoietic cell lineage	CD8B	rs6547705	omental adipose	0.00013	0.2	0.087	0.69117694
Hematopoietic cell lineage	CD9	rs10849399	liver	6.00E-05	8.50E-01	2.20E-02	1.13E-01
Hematopoietic cell lineage	CD9	rs10849401	liver	8.60E-06	8.40E-01	2.20E-02	1.17E-01
Hematopoietic cell lineage	CR1	rs1323720	liver	1.10E-09	6.30E-03	6.30E-03	1.13E-01
Hematopoietic cell lineage	CR1	rs1323720	omental adipose	1.40E-06	6.30E-03	6.30E-03	1.13E-01
Hematopoietic cell lineage	CR1	rs1323720	subcutaneous adipose	7.50E-10	6.30E-03	6.30E-03	1.13E-01
Hematopoietic cell lineage	CSF3R	rs3917987	omental adipose	0.00012	NA	0.19	NA
Hematopoietic cell lineage	FCER2	rs1990975	omental adipose	1.50E-19	NA	6.70E-01	NA
Hematopoietic cell lineage	FCER2	rs1990975	subcutaneous adipose	2.30E-11	NA	6.70E-01	NA
Hematopoietic cell lineage	FLT3LG	rs6509443	liver	3.20E-05	NA	9.80E-01	NA
Hematopoietic cell lineage	GP1BB	rs9605002	omental adipose	6.70E-05	NA	3.50E-01	NA
Hematopoietic cell lineage	HLA-DRA	rs2858331	liver	1.90E-07	9.00E-02	2.70E-03	9.46E-01
Hematopoietic cell lineage	HLA-DRB1	rs1077394	liver	1.50E-05	2.10E-05	5.50E-04	1.85E-03
Hematopoietic cell lineage	HLA-DRB1	rs1077394	omental adipose	2.90E-11	2.10E-05	5.50E-04	1.85E-03
Hematopoietic cell lineage	HLA-DRB1	rs1077394	subcutaneous adipose	2.20E-09	2.10E-05	5.50E-04	1.85E-03

Pathway	Gene	eSNP	Tissue	SNP-Expression Pvalue	SNP-T2D Pvalue		
					DIAGRAM	WTCCC	Non-WTCCC
Hematopoietic cell lineage	HLA-DRB5	rs1077394	omental adipose	1.40E-05	2.10E-05	5.50E-04	1.85E-03
Hematopoietic cell lineage	HLA-DRB5	rs1077394	subcutaneous adipose	2.20E-05	2.10E-05	5.50E-04	1.85E-03
Hematopoietic cell lineage	IL11RA	rs11575584	omental adipose	9.70E-05	1.60E-01	3.40E-01	2.38E-01
Hematopoietic cell lineage	IL11RA	rs11575584	subcutaneous adipose	4.10E-06	1.60E-01	3.40E-01	2.38E-01
Hematopoietic cell lineage	IL1R2	rs12467316	liver	3.60E-15	7.40E-01	2.10E-01	5.82E-01
Hematopoietic cell lineage	IL2RA	rs10905879	omental adipose	4.20E-11	1.60E-01	7.30E-03	8.30E-01
Hematopoietic cell lineage	IL4	rs7729507	liver	4.30E-05	3.10E-01	6.10E-01	3.19E-01
Hematopoietic cell lineage	IL4R	rs16976728	liver	4.10E-07	5.60E-01	1.50E-01	7.24E-01
Hematopoietic cell lineage	IL7R	rs6892686	liver	1.30E-05	9.90E-01	3.70E-01	4.81E-01
Hematopoietic cell lineage	ITGA1	rs9292020	subcutaneous adipose	9.90E-05	8.40E-01	9.70E-02	2.90E-01
Hematopoietic cell lineage	ITGA2	rs13155884	omental adipose	4.40E-07	NA	4.90E-03	NA
Hematopoietic cell lineage	ITGA2	rs13155884	subcutaneous adipose	6.40E-06	NA	4.90E-03	NA
Hematopoietic cell lineage	ITGA2B	rs11652522	subcutaneous adipose	2.10E-05	7.70E-01	3.10E-01	6.79E-01
Hematopoietic cell lineage	ITGA6	rs1882165	liver	1.00E-04	6.20E-01	4.40E-01	9.48E-01
Hematopoietic cell lineage	ITGAM	rs8056505	subcutaneous adipose	3.20E-05	1.80E-01	1.90E-01	4.22E-01
Hematopoietic cell lineage	KITLG	rs4842610	liver	7.50E-05	1.50E-01	5.40E-02	6.58E-01
Hematopoietic cell lineage	TFRC	rs9843585	liver	5.80E-05	NA	2.80E-01	NA
Hematopoietic cell lineage	TPO	rs4927594	omental adipose	4.00E-06	8.80E-01	1.40E-01	3.27E-01
Neuroactive ligand-receptor interaction	ADORA1	rs1874142	omental adipose	7.90E-08	3.40E-01	4.40E-01	4.84E-01



Pathway	Gene	eSNP	Tissue	SNP-Expression Pvalue	SNP-T2D Pvalue		
					DIAGRAM	WTCCC	Non-WTCCC
Neuroactive ligand-receptor interaction	ADORA1	rs1874142	subcutaneous adipose	1.80E-05	3.40E-01	4.40E-01	4.84E-01
Neuroactive ligand-receptor interaction	ADORA2A	rs3788372	liver	2.90E-07	2.60E-01	1.10E-01	7.85E-01
Neuroactive ligand-receptor interaction	ADORA2A	rs3788372	omental adipose	2.20E-05	2.60E-01	1.10E-01	7.85E-01
Neuroactive ligand-receptor interaction	ADORA2B	rs3112521	liver	2.70E-06	3.40E-01	3.00E-01	6.26E-01
Neuroactive ligand-receptor interaction	ADORA3	rs3767602	omental adipose	8.40E-15	6.70E-01	8.60E-02	4.28E-01
Neuroactive ligand-receptor interaction	ADORA3	rs3767602	subcutaneous adipose	1.60E-11	6.70E-01	8.60E-02	4.28E-01
Neuroactive ligand-receptor interaction	ADRA1A	rs6992095	subcutaneous adipose	6.20E-05	1.50E-01	3.40E-02	7.74E-01
Neuroactive ligand-receptor interaction	ADRA1B	rs938541	subcutaneous adipose	6.30E-05	9.70E-01	3.30E-01	4.63E-01
Neuroactive ligand-receptor interaction	ADRA2A	rs945332	omental adipose	3.80E-05	1.20E-01	1.10E-02	9.16E-01
Neuroactive ligand-receptor interaction	ADRA2B	rs7562544	omental adipose	1.30E-11	2.80E-01	4.60E-02	9.12E-01
Neuroactive ligand-receptor interaction	ADRA2C	rs2857960	liver	2.90E-08	NA	5.90E-01	NA
Neuroactive ligand-receptor interaction	ADRB1	rs2782979	liver	1.40E-08	1.20E-01	3.60E-04	4.71E-01
Neuroactive ligand-receptor interaction	ADRB2	rs973057	omental adipose	5.90E-07	1.80E-01	7.50E-02	6.72E-01
Neuroactive ligand-receptor interaction	AGTR1	rs16861027	liver	7.30E-05	8.30E-03	3.30E-02	5.22E-02
Neuroactive ligand-receptor interaction	BDKRB2	rs4349080	subcutaneous adipose	2.20E-05	1.40E-01	2.10E-01	3.00E-01
Neuroactive ligand-receptor interaction	CALCRL	rs17751491	subcutaneous adipose	6.00E-05	3.50E-01	1.90E-01	8.11E-01
Neuroactive ligand-receptor interaction	CCKBR	rs1876826	omental adipose	5.80E-07	3.30E-01	4.10E-02	7.67E-01

Pathway	Gene	eSNP	Tissue	SNP-Expression Pvalue	SNP-T2D Pvalue		
					DIAGRAM	WTCCC	Non-WTCCC
Neuroactive ligand-receptor interaction	CHRM1	rs530752	omental adipose	6.40E-05	5.30E-02	3.70E-01	4.99E-02
Neuroactive ligand-receptor interaction	CHRM3	rs10495433	liver	6.20E-05	4.50E-02	6.00E-02	2.06E-01
Neuroactive ligand-receptor interaction	CHRM3	rs10495434	liver	1.00E-05	5.20E-02	6.00E-02	2.39E-01
Neuroactive ligand-receptor interaction	CNR1	rs13197090	liver	0	0.39	0.32	0.69635037
Neuroactive ligand-receptor interaction	CTSG	rs4982958	subcutaneous adipose	9.00E-05	4.00E-01	3.00E-01	7.40E-01
Neuroactive ligand-receptor interaction	DRD1	rs11949641	subcutaneous adipose	9.70E-05	9.20E-01	1.70E-01	3.33E-01
Neuroactive ligand-receptor interaction	DRD2	rs10736469	subcutaneous adipose	5.30E-09	3.90E-01	1.70E-01	9.32E-01
Neuroactive ligand-receptor interaction	DRD4	rs12421158	omental adipose	7.80E-05	9.40E-01	1.80E-01	3.29E-01
Neuroactive ligand-receptor interaction	EDG2	rs544276	subcutaneous adipose	2.20E-06	7.10E-01	9.90E-02	4.15E-01
Neuroactive ligand-receptor interaction	EDG3	rs9314668	subcutaneous adipose	1.60E-06	6.80E-01	9.40E-01	6.09E-01
Neuroactive ligand-receptor interaction	EDG7	rs9729018	liver	2.70E-06	4.00E-01	6.30E-02	7.40E-01
Neuroactive ligand-receptor interaction	EDNRA	rs2163011	liver	6.40E-05	8.70E-02	6.90E-01	4.02E-02
Neuroactive ligand-receptor interaction	EDNRB	rs6563019	subcutaneous adipose	2.60E-06	4.40E-01	1.80E-02	4.03E-01
Neuroactive ligand-receptor interaction	F2	rs2291443	liver	9.50E-06	5.30E-01	4.20E-01	8.25E-01
Neuroactive ligand-receptor interaction	F2R	rs250760	omental adipose	4.80E-05	3.50E-02	2.20E-01	5.30E-02
Neuroactive ligand-receptor interaction	F2RL1	rs353964	subcutaneous adipose	0.00011	0.046	0.053	0.22742213
Neuroactive ligand-receptor interaction	F2RL2	rs2455236	liver	1.90E-05	8.20E-01	2.30E-01	5.14E-01

Pathway	Gene	eSNP	Tissue	SNP-Expression Pvalue	SNP-T2D Pvalue		
					DIAGRAM	WTCCC	Non-WTCCC
Neuroactive ligand-receptor interaction	FPR1	rs10422751	omental adipose	1.50E-06	NA	1.80E-01	NA
Neuroactive ligand-receptor interaction	FPRL1	rs4802863	subcutaneous adipose	5.50E-09	NA	2.70E-01	NA
Neuroactive ligand-receptor interaction	FPRL2	rs4464193	liver	1.00E-04	3.70E-01	9.60E-01	2.29E-01
Neuroactive ligand-receptor interaction	GABBR2	rs6478563	liver	5.30E-05	8.50E-01	8.50E-01	9.13E-01
Neuroactive ligand-receptor interaction	GABRA2	rs1504497	subcutaneous adipose	1.40E-06	5.30E-01	6.70E-01	5.98E-01
Neuroactive ligand-receptor interaction	GABRA5	rs6576628	liver	1.60E-05	NA	6.80E-02	NA
Neuroactive ligand-receptor interaction	GABRB1	rs2078610	subcutaneous adipose	9.70E-05	2.60E-02	2.40E-02	2.05E-01
Neuroactive ligand-receptor interaction	GABRB3	rs4906679	omental adipose	9.90E-07	3.70E-01	1.60E-02	4.84E-01
Neuroactive ligand-receptor interaction	GABRB3	rs4906679	subcutaneous adipose	3.00E-05	3.70E-01	1.60E-02	4.84E-01
Neuroactive ligand-receptor interaction	GABRP	rs10073556	subcutaneous adipose	3.70E-05	4.50E-01	5.20E-02	6.04E-01
Neuroactive ligand-receptor interaction	GALR1	rs2850878	subcutaneous adipose	5.60E-07	9.40E-01	6.80E-02	1.72E-01
Neuroactive ligand-receptor interaction	GALR3	rs5756685	liver	5.90E-05	NA	1.70E-01	NA
Neuroactive ligand-receptor interaction	GH1	rs2008018	omental adipose	9.90E-05	4.50E-01	5.80E-01	5.48E-01
Neuroactive ligand-receptor interaction	GHR	rs276260	omental adipose	7.20E-05	2.40E-01	1.80E-01	5.83E-01
Neuroactive ligand-receptor interaction	GHR	rs276260	subcutaneous adipose	2.50E-05	2.40E-01	1.80E-01	5.83E-01
Neuroactive ligand-receptor interaction	GHSR	rs2041692	liver	0	0.14	0.7	0.08257134
Neuroactive ligand-receptor interaction	GLP1R	rs9394492	omental adipose	1.50E-05	4.20E-01	8.50E-01	3.34E-01

Pathway	Gene	eSNP	Tissue	SNP-Expression Pvalue	SNP-T2D Pvalue		
					DIAGRAM	WTCCC	Non-WTCCC
Neuroactive ligand-receptor interaction	GLRB	rs12508572	liver	1.50E-10	8.80E-01	2.00E-01	4.10E-01
Neuroactive ligand-receptor interaction	GPR156	rs4234654	liver	4.20E-05	3.30E-01	9.60E-01	1.90E-01
Neuroactive ligand-receptor interaction	GPR83	rs7950328	liver	3.30E-10	1.50E-01	3.40E-02	7.74E-01
Neuroactive ligand-receptor interaction	GRID1	rs874758	subcutaneous adipose	5.60E-07	8.00E-02	6.20E-03	8.25E-01
Neuroactive ligand-receptor interaction	GRIK1	rs2832390	liver	5.80E-06	2.30E-02	2.00E-04	8.78E-01
Neuroactive ligand-receptor interaction	GRIK2	rs1925227	omental adipose	3.40E-07	5.80E-02	6.60E-02	2.52E-01
Neuroactive ligand-receptor interaction	GRIK3	rs2492301	subcutaneous adipose	8.10E-05	5.30E-01	1.40E-01	7.50E-01
Neuroactive ligand-receptor interaction	GRIN2C	rs6501741	omental adipose	4.30E-05	7.10E-03	3.00E-02	4.73E-02
Neuroactive ligand-receptor interaction	GRIN3A	rs2786798	liver	0	0.53	0.29	0.98586863
Neuroactive ligand-receptor interaction	GRIN3B	rs1860661	liver	0	NA	0.51	NA
Neuroactive ligand-receptor interaction	GRM1	rs3804295	subcutaneous adipose	6.30E-05	2.30E-01	1.60E-01	5.95E-01
Neuroactive ligand-receptor interaction	GRM5	rs2226624	omental adipose	0.00012	0.71	0.71	0.82910397
Neuroactive ligand-receptor interaction	GRM7	rs7641476	subcutaneous adipose	5.60E-13	9.10E-01	8.80E-02	2.23E-01
Neuroactive ligand-receptor interaction	GRM8	rs2040502	liver	6.00E-06	2.80E-04	6.90E-03	4.24E-03
Neuroactive ligand-receptor interaction	HCRTR2	rs2653363	omental adipose	0.00011	0.0032	0.0082	0.05042273
Neuroactive ligand-receptor interaction	HRH1	rs2171543	liver	3.80E-07	8.10E-01	5.10E-01	8.43E-01
Neuroactive ligand-receptor interaction	HTR1F	rs17467509	omental adipose	0.00013	0.98	0.88	0.93069642

Pathway	Gene	eSNP	Tissue	SNP-Expression Pvalue	SNP-T2D Pvalue		
					DIAGRAM	WTCCC	Non-WTCCC
Neuroactive ligand-receptor interaction	HTR2B	rs1472959	omental adipose	8.40E-06	8.30E-01	2.70E-02	1.37E-01
Neuroactive ligand-receptor interaction	HTR2B	rs1472959	subcutaneous adipose	8.40E-05	8.30E-01	2.70E-02	1.37E-01
Neuroactive ligand-receptor interaction	HTR7	rs7895851	omental adipose	9.80E-05	3.10E-01	8.40E-03	4.73E-01
Neuroactive ligand-receptor interaction	LEPR	rs6673324	liver	4.80E-05	1.30E-01	6.20E-02	5.52E-01
Neuroactive ligand-receptor interaction	LHCGR	rs6705602	omental adipose	6.90E-05	7.40E-01	1.50E-01	4.84E-01
Neuroactive ligand-receptor interaction	LTB4R	rs12895335	subcutaneous adipose	6.60E-05	7.80E-02	5.70E-02	3.63E-01
Neuroactive ligand-receptor interaction	MC3R	rs882678	liver	9.80E-06	4.00E-01	1.80E-01	9.31E-01
Neuroactive ligand-receptor interaction	MC5R	rs2159942	subcutaneous adipose	8.60E-06	7.40E-01	7.20E-01	8.64E-01
Neuroactive ligand-receptor interaction	MTNR1A	rs7687823	omental adipose	0.00012	0.69	0.41	0.91145051
Neuroactive ligand-receptor interaction	NMUR1	rs1667301	omental adipose	2.60E-05	9.80E-01	2.30E-01	3.51E-01
Neuroactive ligand-receptor interaction	NMUR1	rs1667301	subcutaneous adipose	0.00013	0.98	0.23	0.35074275
Neuroactive ligand-receptor interaction	NMUR2	rs11959584	subcutaneous adipose	2.90E-05	6.90E-01	6.70E-01	8.34E-01
Neuroactive ligand-receptor interaction	NPFFR2	rs1402162	omental adipose	7.30E-05	1.10E-02	3.50E-02	6.78E-02
Neuroactive ligand-receptor interaction	NPY1R	rs11732470	subcutaneous adipose	2.00E-09	4.60E-02	3.10E-02	3.04E-01
Neuroactive ligand-receptor interaction	NPY5R	rs11732470	subcutaneous adipose	8.70E-05	4.60E-02	3.10E-02	3.04E-01
Neuroactive ligand-receptor interaction	NR3C1	rs33383	liver	8.30E-05	6.30E-01	3.80E-01	9.68E-01
Neuroactive ligand-receptor interaction	NR3C1	rs33383	omental adipose	1.60E-05	6.30E-01	3.80E-01	9.68E-01

Pathway	Gene	eSNP	Tissue	SNP-Expression Pvalue	SNP-T2D Pvalue		
					DIAGRAM	WTCCC	Non-WTCCC
Neuroactive ligand-receptor interaction	NR3C1	rs33383	subcutaneous adipose	9.90E-11	6.30E-01	3.80E-01	9.68E-01
Neuroactive ligand-receptor interaction	OPRK1	rs10958356	subcutaneous adipose	1.20E-06	5.70E-02	2.20E-01	9.88E-02
Neuroactive ligand-receptor interaction	OPRL1	rs6062661	subcutaneous adipose	2.70E-05	2.60E-01	2.90E-03	4.01E-01
Neuroactive ligand-receptor interaction	P2RX1	rs9904166	subcutaneous adipose	4.50E-06	NA	2.80E-01	NA
Neuroactive ligand-receptor interaction	P2RX2	rs5744750	omental adipose	8.80E-06	5.40E-01	2.50E-02	3.38E-01
Neuroactive ligand-receptor interaction	P2RX3	rs10400305	liver	1.30E-05	1.90E-01	2.70E-01	3.53E-01
Neuroactive ligand-receptor interaction	P2RX4	rs1180051	liver	2.10E-09	1.10E-01	6.10E-02	4.80E-01
Neuroactive ligand-receptor interaction	P2RX4	rs1180051	omental adipose	1.00E-08	1.10E-01	6.10E-02	4.80E-01
Neuroactive ligand-receptor interaction	P2RX4	rs1180051	subcutaneous adipose	5.90E-06	1.10E-01	6.10E-02	4.80E-01
Neuroactive ligand-receptor interaction	P2RX7	rs1180012	liver	1.90E-05	6.50E-01	6.70E-01	7.75E-01
Neuroactive ligand-receptor interaction	P2RY13	rs1873619	liver	1.10E-11	6.90E-01	2.60E-01	7.22E-01
Neuroactive ligand-receptor interaction	P2RY13	rs2242353	liver	6.30E-11	6.30E-01	2.60E-01	8.10E-01
Neuroactive ligand-receptor interaction	P2RY2	rs366066	subcutaneous adipose	8.90E-05	NA	3.00E-01	NA
Neuroactive ligand-receptor interaction	P2RY6	rs7925649	subcutaneous adipose	2.90E-06	1.90E-01	6.90E-01	1.35E-01
Neuroactive ligand-receptor interaction	PAR3	rs3781128	liver	0	0.28	0.26	0.55522983
Neuroactive ligand-receptor interaction	PRLR	rs10040617	liver	7.20E-05	9.30E-01	2.30E-01	3.98E-01
Neuroactive ligand-receptor interaction	PRSS3	rs1856201	liver	8.20E-06	4.10E-02	5.50E-01	1.87E-02

Pathway	Gene	eSNP	Tissue	SNP-Expression Pvalue	SNP-T2D Pvalue		
					DIAGRAM	WTCCC	Non-WTCCC
Neuroactive ligand-receptor interaction	PTAFR	rs1053107	omental adipose	7.90E-07	8.20E-01	3.10E-01	6.15E-01
Neuroactive ligand-receptor interaction	PTGDR	rs708486	subcutaneous adipose	1.60E-12	9.60E-02	5.50E-02	4.47E-01
Neuroactive ligand-receptor interaction	PTGER2	rs708519	omental adipose	4.80E-07	1.70E-01	2.00E-01	3.85E-01
Neuroactive ligand-receptor interaction	PTGER3	rs1891417	subcutaneous adipose	2.50E-05	2.10E-01	2.60E-01	4.06E-01
Neuroactive ligand-receptor interaction	PTGER3	rs2796200	subcutaneous adipose	4.50E-05	2.60E-01	2.60E-01	5.13E-01
Neuroactive ligand-receptor interaction	PTGFR	rs12737480	liver	9.30E-07	6.30E-01	1.30E-01	5.80E-01
Neuroactive ligand-receptor interaction	PTGIR	rs931647	liver	5.00E-08	1.30E-02	3.50E-03	2.76E-01
Neuroactive ligand-receptor interaction	PTGIR	rs931647	subcutaneous adipose	1.90E-06	1.30E-02	3.50E-03	2.76E-01
Neuroactive ligand-receptor interaction	PTHR1	rs7633581	omental adipose	3.10E-05	2.30E-01	6.00E-02	8.82E-01
Neuroactive ligand-receptor interaction	PTHR2	rs4673402	subcutaneous adipose	2.80E-20	6.80E-01	1.10E-01	4.74E-01
Neuroactive ligand-receptor interaction	PTHR2	rs4675764	subcutaneous adipose	9.10E-20	6.80E-01	1.10E-01	4.74E-01
Neuroactive ligand-receptor interaction	SCTR	rs6750751	subcutaneous adipose	6.90E-05	7.80E-01	3.30E-01	6.91E-01
Neuroactive ligand-receptor interaction	SSTR2	rs6501584	subcutaneous adipose	6.50E-05	3.70E-01	6.70E-02	8.15E-01
Neuroactive ligand-receptor interaction	TACR2	rs4745987	omental adipose	3.50E-07	1.00E-01	2.80E-01	1.59E-01
Neuroactive ligand-receptor interaction	THRB	rs9812189	omental adipose	2.70E-07	8.10E-02	6.70E-02	3.46E-01
Neuroactive ligand-receptor interaction	TRPV1	rs17707155	omental adipose	9.40E-05	3.80E-01	7.20E-01	3.53E-01
Neuroactive ligand-receptor interaction	TSPO	rs11574528	liver	3.30E-05	5.20E-01	8.70E-03	2.21E-01

Pathway	Gene	eSNP	Tissue	SNP-Expression Pvalue	SNP-T2D Pvalue		
					DIAGRAM	WTCCC	Non-WTCCC
Neuroactive ligand-receptor interaction	TSPO	rs11574528	omental adipose	9.10E-07	5.20E-01	8.70E-03	2.21E-01
Neuroactive ligand-receptor interaction	VIPR1	rs342541	liver	1.70E-08	5.00E-01	4.50E-03	1.75E-01
Neuroactive ligand-receptor interaction	VIPR1	rs342541	subcutaneous adipose	1.10E-05	5.00E-01	4.50E-03	1.75E-01
Neuroactive ligand-receptor interaction	VIPR2	rs1124425	subcutaneous adipose	1.40E-06	6.00E-02	2.30E-01	1.01E-01
N-Glycan biosynthesis	ALG1	rs3760030	liver	7.60E-34	NA	3.30E-01	NA
N-Glycan biosynthesis	ALG1	rs3760030	omental adipose	7.10E-42	NA	3.30E-01	NA
N-Glycan biosynthesis	ALG1	rs3760030	subcutaneous adipose	1.80E-33	NA	3.30E-01	NA
N-Glycan biosynthesis	ALG10	rs11053254	liver	2.40E-06	5.20E-01	9.20E-02	6.41E-01
N-Glycan biosynthesis	ALG11	rs6650384	liver	0	0.42	0.52	0.54877316
N-Glycan biosynthesis	ALG12	rs6009870	omental adipose	4.90E-06	NA	1.10E-01	NA
N-Glycan biosynthesis	ALG14	rs3789445	subcutaneous adipose	1.40E-05	5.30E-02	6.10E-04	9.36E-01
N-Glycan biosynthesis	ALG3	rs17774396	omental adipose	4.20E-09	NA	3.20E-02	NA
N-Glycan biosynthesis	ALG3	rs17774396	subcutaneous adipose	2.70E-08	NA	3.20E-02	NA
N-Glycan biosynthesis	ALG6	rs3004318	omental adipose	4.00E-05	9.30E-01	3.70E-01	5.48E-01
N-Glycan biosynthesis	ALG8	rs567697	liver	1.60E-07	1.40E-01	2.20E-01	2.90E-01
N-Glycan biosynthesis	ALG8	rs567697	omental adipose	2.80E-08	1.40E-01	2.20E-01	2.90E-01
N-Glycan biosynthesis	ALG8	rs567697	subcutaneous adipose	2.70E-05	1.40E-01	2.20E-01	2.90E-01
N-Glycan biosynthesis	B4GALT1	rs10971438	subcutaneous adipose	5.30E-05	5.90E-01	1.40E-01	6.58E-01
N-Glycan biosynthesis	B4GALT3	rs11576830	subcutaneous adipose	3.50E-05	3.50E-01	3.70E-01	5.66E-01
N-Glycan biosynthesis	DAD1	rs3811189	subcutaneous adipose	0.00011	0.45	0.094	0.76208262
N-Glycan biosynthesis	DDOST	rs3738133	subcutaneous adipose	6.10E-05	3.10E-01	6.60E-01	2.92E-01
N-Glycan biosynthesis	DPAGT1	rs639373	liver	2.80E-06	1.30E-01	7.00E-01	7.36E-02
N-Glycan biosynthesis	DPM2	rs7874186	liver	7.80E-08	2.10E-01	3.20E-03	5.23E-01
N-Glycan biosynthesis	DPM2	rs7874186	omental adipose	3.00E-10	2.10E-01	3.20E-03	5.23E-01
N-Glycan biosynthesis	DPM2	rs7874186	subcutaneous adipose	7.00E-07	2.10E-01	3.20E-03	5.23E-01
N-Glycan biosynthesis	FUT8	rs10132229	omental adipose	3.80E-05	6.60E-01	1.30E-01	5.41E-01
N-Glycan biosynthesis	MAN1A1	rs924397	liver	5.40E-07	3.00E-01	5.10E-02	8.92E-01



Pathway	Gene	eSNP	Tissue	SNP-Expression Pvalue	SNP-T2D Pvalue		
					DIAGRAM	WTCCC	Non-WTCCC
N-Glycan biosynthesis	MAN1A2	rs2767322	subcutaneous adipose	2.70E-06	8.40E-02	4.90E-03	8.98E-01
N-Glycan biosynthesis	MAN1B1	rs4880201	liver	7.10E-07	NA	8.20E-02	NA
N-Glycan biosynthesis	MAN1B1	rs4880201	omental adipose	1.30E-05	NA	8.20E-02	NA
N-Glycan biosynthesis	MAN1B1	rs4880201	subcutaneous adipose	1.60E-05	NA	8.20E-02	NA
N-Glycan biosynthesis	MAN1C1	rs760599	liver	0	0.00095	0.2	0.00038527
N-Glycan biosynthesis	MAN1C1	rs760599	liver	3.20E-10	9.50E-04	2.00E-01	3.85E-04
N-Glycan biosynthesis	MAN2A1	rs11744065	subcutaneous adipose	5.70E-05	2.40E-01	6.90E-03	5.83E-01
N-Glycan biosynthesis	MGAT2	rs4900927	liver	1.00E-04	1.50E-01	8.50E-03	9.00E-01
N-Glycan biosynthesis	MGAT2	rs4900928	liver	9.50E-05	1.80E-01	8.50E-03	7.93E-01
N-Glycan biosynthesis	MGAT3	rs5757373	omental adipose	3.80E-05	2.90E-01	3.80E-01	4.48E-01
N-Glycan biosynthesis	MGAT4A	rs2276645	subcutaneous adipose	9.50E-05	9.70E-01	1.70E-01	2.92E-01
N-Glycan biosynthesis	MGAT5	rs3748900	subcutaneous adipose	4.90E-05	3.50E-01	2.00E-01	7.93E-01
N-Glycan biosynthesis	RFT1	rs2581795	liver	9.70E-05	NA	9.00E-01	NA
N-Glycan biosynthesis	RPN1	rs7429360	omental adipose	4.40E-05	2.10E-01	2.30E-01	4.41E-01
N-Glycan biosynthesis	RPN1	rs7429360	subcutaneous adipose	2.40E-05	2.10E-01	2.30E-01	4.41E-01
N-Glycan biosynthesis	STT3B	rs3792551	omental adipose	1.50E-13	NA	1.70E-02	NA
N-Glycan biosynthesis	STT3B	rs3792551	subcutaneous adipose	2.70E-06	NA	1.70E-02	NA
Pancreatic cancer	ACVR1C	rs13383985	liver	5.90E-06	NA	4.90E-01	NA
Pancreatic cancer	BRAF	rs10487888	omental adipose	5.60E-07	5.70E-01	3.60E-01	9.60E-01
Pancreatic cancer	BRAF	rs10487888	subcutaneous adipose	7.30E-08	5.70E-01	3.60E-01	9.60E-01
Pancreatic cancer	CASP9	rs11576404	omental adipose	8.00E-07	2.50E-01	4.90E-02	9.94E-01
Pancreatic cancer	CCND1	rs4584599	subcutaneous adipose	1.10E-06	NA	2.40E-02	NA
Pancreatic cancer	CDK4	rs867008	subcutaneous adipose	1.30E-05	4.30E-01	3.80E-01	6.99E-01
Pancreatic cancer	CDK6	rs2237572	omental adipose	6.80E-07	4.30E-01	1.90E-01	9.70E-01
Pancreatic cancer	E2F3	rs9368222	subcutaneous adipose	5.20E-06	1.50E-11	1.50E-05	4.42E-09
Pancreatic cancer	EGFR	rs13244925	subcutaneous adipose	2.10E-05	2.90E-01	1.10E-01	8.58E-01
Pancreatic cancer	IKBKB	rs7015100	omental adipose	3.70E-06	9.80E-01	3.70E-01	4.91E-01
Pancreatic cancer	KRAS	rs11048019	omental adipose	0.00011	0.051	0.041	0.28980561
Pancreatic cancer	KRAS	rs4963884	omental adipose	5.90E-05	6.30E-02	4.10E-02	3.52E-01
Pancreatic cancer	MAP2K1	rs11857642	subcutaneous adipose	1.30E-08	7.20E-01	6.60E-01	8.87E-01

Pathway	Gene	eSNP	Tissue	SNP-Expression Pvalue	SNP-T2D Pvalue		
					DIAGRAM	WTCCC	Non-WTCCC
Pancreatic cancer	MAPK10	rs10022237	liver	1.80E-05	4.30E-02	4.40E-02	2.37E-01
Pancreatic cancer	MAPK3	rs11865086	subcutaneous adipose	9.30E-05	8.00E-01	4.10E-01	7.54E-01
Pancreatic cancer	MAPK9	rs3828686	liver	2.90E-05	4.70E-01	8.70E-02	7.05E-01
Pancreatic cancer	NFKB1	rs3774937	liver	5.20E-05	5.50E-01	3.80E-01	9.04E-01
Pancreatic cancer	PLD1	rs4894512	subcutaneous adipose	1.00E-04	9.60E-01	2.60E-01	4.02E-01
Pancreatic cancer	RAC1	rs2347338	omental adipose	8.00E-11	9.10E-01	1.30E-01	2.87E-01
Pancreatic cancer	RAC1	rs2347338	subcutaneous adipose	4.70E-08	9.10E-01	1.30E-01	2.87E-01
Pancreatic cancer	RAD51	rs1044474	omental adipose	6.50E-16	2.20E-01	7.70E-02	7.83E-01
Pancreatic cancer	RAD51	rs1044474	subcutaneous adipose	2.60E-08	2.20E-01	7.70E-02	7.83E-01
Pancreatic cancer	RAF1	rs7617041	liver	3.10E-05	3.60E-01	4.00E-01	5.55E-01
Pancreatic cancer	RALBP1	rs9960247	subcutaneous adipose	6.70E-05	2.30E-01	5.00E-02	9.33E-01
Pancreatic cancer	RELA	rs11227306	omental adipose	6.20E-06	5.00E-01	3.30E-03	1.52E-01
Pancreatic cancer	SMAD2	rs8085335	subcutaneous adipose	4.40E-05	5.20E-01	9.30E-02	6.44E-01
Pancreatic cancer	SMAD3	rs266332	liver	2.90E-05	4.60E-02	1.80E-03	8.02E-01
Pancreatic cancer	SMAD4	rs12456284	omental adipose	1.80E-05	1.30E-01	1.60E-01	3.34E-01
Pancreatic cancer	STAT3	rs1076188	subcutaneous adipose	1.30E-05	NA	3.90E-01	NA
Pancreatic cancer	TGFA	rs399819	liver	3.90E-06	2.70E-01	6.60E-02	9.62E-01
Pancreatic cancer	TGFBR1	rs10819634	liver	4.40E-05	7.30E-01	4.30E-02	2.49E-01
Pancreatic cancer	TGFBR2	rs7625163	liver	0	0.7	0.24	0.67954428
Pancreatic cancer	VEGF	rs3025033	omental adipose	1.80E-06	NA	4.10E-02	NA
Pancreatic cancer	VEGFB	rs3751120	omental adipose	1.50E-10	8.70E-02	2.30E-02	5.89E-01
Pancreatic cancer	VEGFB	rs3751120	subcutaneous adipose	1.30E-05	8.70E-02	2.30E-02	5.89E-01
Pancreatic cancer	VEGFC	rs1449738	omental adipose	9.00E-05	1.40E-01	4.40E-01	1.54E-01
Phosphatidylinositol signaling system	CALM1	rs3213718	liver	2.60E-06	1.50E-01	4.50E-02	7.04E-01
Phosphatidylinositol signaling system	CALM2	rs13430277	omental adipose	1.10E-05	3.60E-01	1.80E-03	2.12E-01
Phosphatidylinositol signaling system	CALM3	rs11083846	omental adipose	4.20E-05	7.60E-01	6.30E-01	9.72E-01
Phosphatidylinositol signaling system	CALML5	rs7098007	liver	5.90E-05	7.30E-01	6.60E-02	3.15E-01

Pathway	Gene	eSNP	Tissue	SNP-Expression Pvalue	SNP-T2D Pvalue		
					DIAGRAM	WTCCC	Non-WTCCC
Phosphatidylinositol signaling system	CALML6	rs4648592	omental adipose	4.80E-05	9.10E-01	3.10E-01	5.08E-01
Phosphatidylinositol signaling system	CALML6	rs4648592	subcutaneous adipose	9.10E-05	9.10E-01	3.10E-01	5.08E-01
Phosphatidylinositol signaling system	CARKL	rs1873880	omental adipose	3.20E-06	NA	8.20E-03	NA
Phosphatidylinositol signaling system	CARKL	rs1873880	subcutaneous adipose	1.60E-06	NA	8.20E-03	NA
Phosphatidylinositol signaling system	CDS2	rs1292197	liver	6.50E-06	5.10E-02	5.60E-02	2.44E-01
Phosphatidylinositol signaling system	CDS2	rs1292197	omental adipose	1.10E-05	5.10E-02	5.60E-02	2.44E-01
Phosphatidylinositol signaling system	CDS2	rs1292197	subcutaneous adipose	1.10E-06	5.10E-02	5.60E-02	2.44E-01
Phosphatidylinositol signaling system	DGKB	rs6461048	liver	1.40E-05	NA	2.60E-01	NA
Phosphatidylinositol signaling system	DGKE	rs1879145	liver	3.10E-06	9.30E-01	3.60E-01	5.38E-01
Phosphatidylinositol signaling system	DGKQ	rs2290405	omental adipose	2.20E-05	7.20E-01	1.20E-01	4.49E-01
Phosphatidylinositol signaling system	DGKQ	rs2290405	subcutaneous adipose	8.70E-06	7.20E-01	1.20E-01	4.49E-01
Phosphatidylinositol signaling system	IMPA1	rs7007207	omental adipose	1.90E-16	3.50E-01	1.40E-01	9.16E-01
Phosphatidylinositol signaling system	IMPA1	rs7007207	subcutaneous adipose	2.40E-14	3.50E-01	1.40E-01	9.16E-01
Phosphatidylinositol signaling system	IMPA2	rs7235296	liver	6.70E-05	4.40E-01	8.60E-02	7.54E-01
Phosphatidylinositol signaling system	INPP4A	rs11676357	omental adipose	1.40E-06	6.30E-01	1.80E-01	6.80E-01
Phosphatidylinositol signaling system	INPP4B	rs17701271	liver	7.40E-05	9.20E-01	6.20E-01	7.94E-01
Phosphatidylinositol signaling system	INPP5D	rs2138580	liver	0	0.81	0.91	0.80856366
Phosphatidylinositol signaling system	INPP5E	rs11103033	omental adipose	5.10E-06	2.60E-03	2.10E-02	2.06E-02
Phosphatidylinositol signaling system	ITPK1	rs11160071	subcutaneous adipose	2.90E-05	7.00E-01	8.80E-02	4.00E-01

Pathway	Gene	eSNP	Tissue	SNP-Expression Pvalue	SNP-T2D Pvalue		
					DIAGRAM	WTCCC	Non-WTCCC
Phosphatidylinositol signaling system	ITPKB	rs837748	omental adipose	1.00E-04	1.50E-01	5.00E-01	1.46E-01
Phosphatidylinositol signaling system	ITPR1	rs4684443	liver	1.70E-06	8.00E-03	1.70E-02	7.95E-02
Phosphatidylinositol signaling system	ITPR2	rs10506007	omental adipose	4.20E-05	6.80E-01	5.20E-01	9.58E-01
Phosphatidylinositol signaling system	ITPR3	rs7769838	liver	1.60E-06	7.90E-01	2.20E-01	5.35E-01
Phosphatidylinositol signaling system	PIK3C2G	rs4385947	liver	3.10E-07	4.50E-03	1.00E-02	6.25E-02
Phosphatidylinositol signaling system	PIK3C3	rs1944967	subcutaneous adipose	1.20E-06	3.40E-01	3.60E-01	5.58E-01
Phosphatidylinositol signaling system	PIK4CA	rs165862	omental adipose	1.20E-08	1.40E-01	2.10E-01	3.00E-01
Phosphatidylinositol signaling system	PIP5K1B	rs2039624	omental adipose	3.80E-06	NA	9.80E-02	NA
Phosphatidylinositol signaling system	PIP5K1B	rs2039624	subcutaneous adipose	2.60E-08	NA	9.80E-02	NA
Phosphatidylinositol signaling system	PIP5K2B	rs7207178	subcutaneous adipose	1.50E-07	7.30E-01	1.00E-02	1.10E-01
Phosphatidylinositol signaling system	PIP5K3	rs6716615	liver	0	0.97	0.12	0.2295403
Phosphatidylinositol signaling system	PLCB1	rs978266	subcutaneous adipose	0.00012	0.47	0.021	0.39028309
Phosphatidylinositol signaling system	PLCB2	rs3743033	liver	0	0.23	0.47	0.2792028
Phosphatidylinositol signaling system	PLCD1	rs11129780	subcutaneous adipose	7.20E-08	2.40E-01	5.40E-02	9.40E-01
Phosphatidylinositol signaling system	PLCD3	rs12450321	subcutaneous adipose	7.40E-06	8.50E-01	2.40E-01	4.93E-01
Phosphatidylinositol signaling system	PLCD4	rs2279014	liver	3.70E-05	8.00E-01	1.20E-02	9.41E-02
Phosphatidylinositol signaling system	PLCE1	rs11593126	omental adipose	5.90E-05	5.20E-01	2.10E-01	9.06E-01
Phosphatidylinositol signaling system	PLCG2	rs4074445	subcutaneous adipose	6.50E-05	NA	1.60E-01	NA
Phosphatidylinositol signaling system	PRKCA	rs16960228	liver	1.60E-06	5.30E-01	1.90E-03	1.02E-01

Pathway	Gene	eSNP	Tissue	SNP-Expression Pvalue	SNP-T2D Pvalue		
					DIAGRAM	WTCCC	Non-WTCCC
Phosphatidylinositol signaling system	PRKCB1	rs12931116	subcutaneous adipose	2.70E-06	2.50E-01	3.20E-01	4.28E-01
Phosphatidylinositol signaling system	PTEN	rs406671	subcutaneous adipose	7.60E-05	8.80E-01	2.10E-01	4.23E-01
Phosphatidylinositol signaling system	SYNJ1	rs2211676	liver	0	0.85	0.48	0.75864791
Phosphatidylinositol signaling system	SYNJ2	rs13340445	subcutaneous adipose	7.00E-05	1.10E-01	7.10E-02	4.47E-01
Positive Control Pathway	ADAMTS9	rs4132228	omental	4.50E-07	7.10E-04	2.40E-02	4.04E-03
Positive Control Pathway	CDKAL1	rs807835	subq	1.24E-05	4.90E-01	7.60E-02	6.36E-01
Positive Control Pathway	JAZF1	rs1635852	liver	3.55E-10	2.20E-05	2.80E-03	5.11E-04
Positive Control Pathway	NOTCH2	rs2793823	liver	1.46E-05	4.20E-03	4.90E-01	6.41E-04
Positive Control Pathway	PPARG	rs1797912	liver	5.70E-05	3.90E-01	5.70E-01	4.63E-01
Positive Control Pathway	TSPAN8	rs1614565	liver	2.05E-32	9.70E-05	4.70E-08	3.17E-01
PPAR signaling pathway	ACAA1	rs1979845	liver	5.30E-05	NA	3.70E-02	NA
PPAR signaling pathway	ACAA1	rs1979845	omental adipose	7.80E-14	NA	3.70E-02	NA
PPAR signaling pathway	ACAA1	rs1979845	subcutaneous adipose	1.80E-14	NA	3.70E-02	NA
PPAR signaling pathway	ACADM	rs7547056	liver	3.80E-10	3.00E-01	9.70E-02	9.21E-01
PPAR signaling pathway	ACADM	rs7547056	omental adipose	4.00E-06	3.00E-01	9.70E-02	9.21E-01
PPAR signaling pathway	ACADM	rs7547056	subcutaneous adipose	9.50E-07	3.00E-01	9.70E-02	9.21E-01
PPAR signaling pathway	ACOX1	rs363796	omental adipose	2.60E-08	NA	4.30E-02	NA
PPAR signaling pathway	ACOX1	rs363796	subcutaneous adipose	4.00E-05	NA	4.30E-02	NA
PPAR signaling pathway	ACOX2	rs4681689	omental adipose	7.80E-06	NA	5.00E-02	NA
PPAR signaling pathway	ACOX2	rs4681689	subcutaneous adipose	2.90E-06	NA	5.00E-02	NA
PPAR signaling pathway	ACOX3	rs747580	liver	3.80E-05	1.40E-01	3.70E-02	7.15E-01
PPAR signaling pathway	ACOX3	rs747580	omental adipose	1.10E-18	1.40E-01	3.70E-02	7.15E-01
PPAR signaling pathway	ACOX3	rs747580	subcutaneous adipose	8.40E-07	1.40E-01	3.70E-02	7.15E-01
PPAR signaling pathway	ACSL1	rs13120078	subcutaneous adipose	1.10E-05	5.90E-01	6.70E-02	4.66E-01
PPAR signaling pathway	ACSL6	rs2306772	liver	3.60E-07	3.80E-01	7.40E-02	8.23E-01
PPAR signaling pathway	ADIPOQ	rs6444175	subcutaneous adipose	7.70E-06	9.30E-01	8.90E-01	9.92E-01
PPAR signaling pathway	ANGPTL4	rs2278236	liver	2.80E-08	NA	2.70E-01	NA
PPAR signaling pathway	APOA1	rs4938316	liver	0	0.19	0.31	0.31783675

Pathway	Gene	eSNP	Tissue	SNP-Expression Pvalue	SNP-T2D Pvalue		
					DIAGRAM	WTCCC	Non-WTCCC
PPAR signaling pathway	APOA2	rs16857019	omental adipose	2.90E-05	4.80E-01	3.40E-01	8.34E-01
PPAR signaling pathway	AQP7	rs675469	liver	7.30E-06	2.40E-01	7.90E-02	8.31E-01
PPAR signaling pathway	CD36	rs1722505	omental adipose	9.50E-14	5.20E-02	1.20E-02	5.03E-01
PPAR signaling pathway	CD36	rs1722505	subcutaneous adipose	5.10E-14	5.20E-02	1.20E-02	5.03E-01
PPAR signaling pathway	CPT1B	rs140521	liver	6.80E-09	NA	1.50E-01	NA
PPAR signaling pathway	CPT1B	rs140521	omental adipose	1.10E-05	NA	1.50E-01	NA
PPAR signaling pathway	CPT1C	rs10417008	omental adipose	5.40E-08	8.10E-01	5.00E-01	8.33E-01
PPAR signaling pathway	CYP4A11	rs6692958	liver	2.00E-06	5.90E-01	1.10E-03	5.95E-02
PPAR signaling pathway	DBI	rs6717403	omental adipose	4.10E-05	7.80E-01	5.50E-02	2.46E-01
PPAR signaling pathway	FABP1	rs2970901	liver	3.00E-05	1.80E-01	1.20E-01	5.45E-01
PPAR signaling pathway	FABP1	rs2970901	subcutaneous adipose	9.10E-07	1.80E-01	1.20E-01	5.45E-01
PPAR signaling pathway	FABP2	rs10084915	liver	8.00E-07	3.60E-01	1.70E-01	8.71E-01
PPAR signaling pathway	FABP3	rs11576621	liver	5.90E-08	1.00E-01	5.70E-01	6.83E-02
PPAR signaling pathway	FABP3	rs11576621	omental adipose	6.00E-06	1.00E-01	5.70E-01	6.83E-02
PPAR signaling pathway	FABP3	rs11576621	subcutaneous adipose	9.10E-07	1.00E-01	5.70E-01	6.83E-02
PPAR signaling pathway	FADS2	rs174579	omental adipose	4.20E-07	6.20E-01	2.30E-02	2.52E-01
PPAR signaling pathway	LPL	rs6586872	subcutaneous adipose	0.00013	0.78	0.19	0.50322376
PPAR signaling pathway	ME1	rs2300465	subcutaneous adipose	2.00E-05	2.60E-01	8.40E-02	8.66E-01
PPAR signaling pathway	NR1H3	rs11988	omental adipose	7.10E-05	5.60E-01	1.10E-01	6.31E-01
PPAR signaling pathway	PCK1	rs6025610	omental adipose	4.10E-07	2.60E-02	7.70E-03	3.48E-01
PPAR signaling pathway	PCK2	rs11623285	omental adipose	5.00E-06	NA	2.70E-03	NA
PPAR signaling pathway	PCK2	rs11623285	subcutaneous adipose	8.90E-06	NA	2.70E-03	NA
PPAR signaling pathway	PLTP	rs4810482	liver	6.40E-06	8.00E-01	2.50E-02	1.45E-01
PPAR signaling pathway	PPARA	rs4253772	liver	4.20E-05	5.30E-02	6.10E-02	2.41E-01
PPAR signaling pathway	PPARA	rs4253772	omental adipose	1.60E-05	5.30E-02	6.10E-02	2.41E-01
PPAR signaling pathway	PPARD	rs9368849	subcutaneous adipose	9.20E-05	1.70E-03	7.60E-04	1.02E-01
PPAR signaling pathway	PPARG	rs1797912	liver	3.30E-05	3.90E-01	5.70E-01	4.63E-01
PPAR signaling pathway	RXRA	rs17664384	liver	1.00E-04	NA	5.50E-01	NA
PPAR signaling pathway	RXRB	rs3129274	omental adipose	1.60E-23	2.40E-01	1.00E-01	7.62E-01
PPAR signaling pathway	RXRB	rs3129274	subcutaneous adipose	3.30E-18	2.40E-01	1.00E-01	7.62E-01

Pathway	Gene	eSNP	Tissue	SNP-Expression Pvalue	SNP-T2D Pvalue		
					DIAGRAM	WTCCC	Non-WTCCC
PPAR signaling pathway	RXRG	rs2651860	liver	3.50E-06	1.70E-01	1.00E-01	5.64E-01
PPAR signaling pathway	SCD	rs11190462	omental adipose	1.60E-07	6.10E-03	9.20E-02	1.45E-02
PPAR signaling pathway	SLC27A1	rs3815904	omental adipose	5.10E-05	7.20E-01	7.10E-02	3.38E-01
PPAR signaling pathway	SLC27A2	rs11853852	subcutaneous adipose	1.60E-07	2.00E-01	1.30E-01	5.78E-01
PPAR signaling pathway	SLC27A5	rs893185	omental adipose	1.30E-05	7.70E-01	5.10E-01	9.00E-01
PPAR signaling pathway	SLC27A6	rs2577503	omental adipose	0.00011	0.057	0.38	0.05340134
PPAR signaling pathway	SORBS1	rs3193970	liver	5.60E-06	6.40E-01	1.60E-01	6.28E-01
PPAR signaling pathway	UCP1	rs17005845	omental adipose	7.90E-05	4.30E-01	7.40E-02	7.29E-01
TGF-beta signaling pathway	ACVR1C	rs13383985	liver	5.90E-06	NA	4.90E-01	NA
TGF-beta signaling pathway	ACVR2A	rs13004499	subcutaneous adipose	8.40E-05	2.40E-01	8.10E-01	1.51E-01
TGF-beta signaling pathway	ACVR2B	rs3935472	omental adipose	0.00012	0.071	0.003	0.91175224
TGF-beta signaling pathway	ACVRL1	rs3847859	omental adipose	5.70E-05	NA	9.50E-01	NA
TGF-beta signaling pathway	AMH	rs10407022	omental adipose	4.90E-05	NA	5.70E-02	NA
TGF-beta signaling pathway	AMH	rs10407022	subcutaneous adipose	8.10E-05	NA	5.70E-02	NA
TGF-beta signaling pathway	BMP4	rs4444235	omental adipose	7.00E-07	3.70E-01	3.70E-01	6.03E-01
TGF-beta signaling pathway	BMP6	rs592849	subcutaneous adipose	3.90E-05	5.40E-01	5.70E-01	6.95E-01
TGF-beta signaling pathway	BMP8A	rs4660378	liver	4.70E-05	6.20E-02	1.10E-01	1.94E-01
TGF-beta signaling pathway	BMP8B	rs12118033	subcutaneous adipose	7.40E-05	3.10E-01	3.20E-01	5.44E-01
TGF-beta signaling pathway	BMPR1A	rs11597689	liver	7.90E-06	3.90E-01	1.30E-02	4.18E-01
TGF-beta signaling pathway	BMPR1B	rs1434546	omental adipose	0.00011	0.11	0.022	0.71170838
TGF-beta signaling pathway	BMPR2	rs13430786	liver	1.40E-11	6.20E-01	1.70E-01	6.75E-01
TGF-beta signaling pathway	BMPR2	rs6747756	liver	0	0.63	0.17	0.66108666

Pathway	Gene	eSNP	Tissue	SNP-Expression Pvalue	SNP-T2D Pvalue		
					DIAGRAM	WTCCC	Non-WTCCC
TGF-beta signaling pathway	CDKN2B	rs1537375	omental adipose	2.40E-06	9.50E-02	2.20E-01	1.85E-01
TGF-beta signaling pathway	CHRD	rs11716770	subcutaneous adipose	3.40E-05	NA	4.30E-01	NA
TGF-beta signaling pathway	CREBBP	rs129963	omental adipose	1.00E-04	NA	3.70E-02	NA
TGF-beta signaling pathway	CUL1	rs1029888	omental adipose	3.50E-06	1.80E-01	3.20E-01	2.90E-01
TGF-beta signaling pathway	E2F5	rs17811680	liver	4.60E-05	3.30E-02	3.50E-01	2.76E-02
TGF-beta signaling pathway	EP300	rs133036	liver	2.90E-05	1.20E-01	2.50E-01	2.19E-01
TGF-beta signaling pathway	FST	rs27323	liver	1.60E-05	6.60E-01	7.70E-03	1.24E-01
TGF-beta signaling pathway	GDF5	rs4911494	omental adipose	2.00E-06	8.10E-01	2.00E-01	4.84E-01
TGF-beta signaling pathway	GDF5	rs6088813	omental adipose	2.00E-06	8.10E-01	2.00E-01	4.84E-01
TGF-beta signaling pathway	ID3	rs2920	omental adipose	5.60E-05	4.40E-01	4.90E-02	6.06E-01
TGF-beta signaling pathway	ID4	rs1202305	subcutaneous adipose	2.20E-07	7.80E-01	2.50E-01	5.89E-01
TGF-beta signaling pathway	IFNG	rs4913277	liver	8.80E-05	7.30E-01	5.30E-01	9.78E-01
TGF-beta signaling pathway	INHBB	rs11677557	omental adipose	1.00E-04	3.50E-03	5.60E-01	3.44E-04
TGF-beta signaling pathway	LEFTY1	rs2755093	omental adipose	3.60E-05	1.00E-01	5.30E-04	6.08E-01
TGF-beta signaling pathway	LTBP1	rs12618959	liver	2.10E-05	8.10E-01	5.60E-02	2.27E-01
TGF-beta signaling pathway	MAPK3	rs11865086	subcutaneous adipose	9.30E-05	8.00E-01	4.10E-01	7.54E-01
TGF-beta signaling pathway	PPP2CB	rs2956012	liver	2.50E-13	6.30E-01	1.00E-01	5.10E-01
TGF-beta signaling pathway	PPP2CB	rs2956012	omental adipose	2.30E-09	6.30E-01	1.00E-01	5.10E-01
TGF-beta signaling pathway	PPP2CB	rs2956012	subcutaneous adipose	5.30E-09	6.30E-01	1.00E-01	5.10E-01



Pathway	Gene	eSNP	Tissue	SNP-Expression Pvalue	SNP-T2D Pvalue		
					DIAGRAM	WTCCC	Non-WTCCC
TGF-beta signaling pathway	PPP2R1A	rs6509628	omental adipose	8.30E-12	3.10E-01	1.70E-01	7.63E-01
TGF-beta signaling pathway	PPP2R1A	rs6509628	subcutaneous adipose	2.90E-09	3.10E-01	1.70E-01	7.63E-01
TGF-beta signaling pathway	PPP2R1B	rs10502145	liver	1.10E-05	5.60E-01	1.20E-01	6.56E-01
TGF-beta signaling pathway	PPP2R2A	rs7829309	liver	5.40E-05	5.90E-01	9.60E-01	4.80E-01
TGF-beta signaling pathway	PPP2R2C	rs11734695	omental adipose	1.80E-06	6.20E-01	3.50E-01	9.47E-01
TGF-beta signaling pathway	RBL2	rs4784312	liver	3.30E-09	8.80E-04	2.30E-04	1.00E-01
TGF-beta signaling pathway	RHOA	rs9586	omental adipose	3.60E-06	4.50E-01	3.00E-01	8.32E-01
TGF-beta signaling pathway	ROCK2	rs4669700	omental adipose	5.00E-06	8.20E-01	4.20E-01	7.38E-01
TGF-beta signaling pathway	RPS6KB1	rs4968384	subcutaneous adipose	5.70E-07	4.20E-02	6.00E-02	1.92E-01
TGF-beta signaling pathway	RPS6KB2	rs2509712	liver	1.10E-09	7.20E-01	2.30E-02	1.82E-01
TGF-beta signaling pathway	RPS6KB2	rs2509712	omental adipose	1.50E-19	7.20E-01	2.30E-02	1.82E-01
TGF-beta signaling pathway	RPS6KB2	rs2509712	subcutaneous adipose	1.40E-17	7.20E-01	2.30E-02	1.82E-01
TGF-beta signaling pathway	SKP1A	rs7703433	subcutaneous adipose	4.70E-05	8.60E-01	4.30E-01	6.95E-01
TGF-beta signaling pathway	SMAD1	rs11944685	omental adipose	4.20E-07	7.70E-01	2.50E-01	6.02E-01
TGF-beta signaling pathway	SMAD1	rs11944685	subcutaneous adipose	1.60E-05	7.70E-01	2.50E-01	6.02E-01
TGF-beta signaling pathway	SMAD1	rs2289737	omental adipose	3.90E-07	7.90E-01	2.50E-01	5.77E-01
TGF-beta signaling pathway	SMAD1	rs2289737	subcutaneous adipose	1.90E-05	7.90E-01	2.50E-01	5.77E-01
TGF-beta signaling pathway	SMAD2	rs8085335	subcutaneous adipose	4.40E-05	5.20E-01	9.30E-02	6.44E-01
TGF-beta signaling pathway	SMAD3	rs266332	liver	2.90E-05	4.60E-02	1.80E-03	8.02E-01

Pathway	Gene	eSNP	Tissue	SNP-Expression Pvalue	SNP-T2D Pvalue		
					DIAGRAM	WTCCC	Non-WTCCC
TGF-beta signaling pathway	SMAD4	rs12456284	omental adipose	1.80E-05	1.30E-01	1.60E-01	3.34E-01
TGF-beta signaling pathway	SMAD5	rs13158661	subcutaneous adipose	0.00013	0.71	0.067	0.33641087
TGF-beta signaling pathway	SMAD6	rs12902785	omental adipose	2.90E-05	1.40E-02	3.80E-03	2.83E-01
TGF-beta signaling pathway	SMAD9	rs6563501	omental adipose	3.40E-05	2.30E-01	2.20E-02	8.55E-01
TGF-beta signaling pathway	SMURF1	rs10266176	omental adipose	5.80E-06	8.50E-01	4.30E-01	7.08E-01
TGF-beta signaling pathway	SMURF2	rs17401012	omental adipose	3.20E-06	9.20E-03	1.50E-01	1.42E-02
TGF-beta signaling pathway	SP1	rs11170555	liver	4.40E-07	1.20E-01	7.10E-02	4.84E-01
TGF-beta signaling pathway	SP1	rs11170555	omental adipose	2.80E-34	1.20E-01	7.10E-02	4.84E-01
TGF-beta signaling pathway	SP1	rs11170555	subcutaneous adipose	1.50E-18	1.20E-01	7.10E-02	4.84E-01
TGF-beta signaling pathway	SP1	rs2683525	liver	8.10E-07	1.30E-01	7.10E-02	5.20E-01
TGF-beta signaling pathway	SP1	rs2683525	omental adipose	8.60E-34	1.30E-01	7.10E-02	5.20E-01
TGF-beta signaling pathway	SP1	rs2683525	subcutaneous adipose	3.80E-18	1.30E-01	7.10E-02	5.20E-01
TGF-beta signaling pathway	TGFBR1	rs10819634	liver	4.40E-05	7.30E-01	4.30E-02	2.49E-01
TGF-beta signaling pathway	TGFBR2	rs7625163	liver	0	0.7	0.24	0.67954428
TGF-beta signaling pathway	THBS1	rs11070174	omental adipose	4.10E-05	8.30E-01	4.10E-01	7.14E-01
TGF-beta signaling pathway	THBS2	rs2494673	omental adipose	1.60E-05	NA	8.70E-01	NA
TGF-beta signaling pathway	THBS3	rs4246529	subcutaneous adipose	3.40E-05	2.90E-01	1.10E-01	8.58E-01
TGF-beta signaling pathway	THBS4	rs11749003	omental adipose	0.00012	0.3	0.052	0.89695784
TGF-beta signaling pathway	ZFYVE16	rs192313	liver	9.90E-05	4.70E-01	7.10E-01	4.83E-01

Pathway	Gene	eSNP	Tissue	SNP-Expression Pvalue	SNP-T2D Pvalue		
					DIAGRAM	WTCCC	Non-WTCCC
TGF-beta signaling pathway	ZFYVE16	rs192313	subcutaneous adipose	5.30E-06	4.70E-01	7.10E-01	4.83E-01
TGF-beta signaling pathway	ZFYVE16	rs2544600	liver	5.20E-05	4.70E-01	7.10E-01	4.83E-01
TGF-beta signaling pathway	ZFYVE16	rs2544600	omental adipose	0.00013	0.47	0.71	0.48261473
TGF-beta signaling pathway	ZFYVE16	rs2544600	subcutaneous adipose	6.50E-06	4.70E-01	7.10E-01	4.83E-01
Tight junction	ACTG1	rs7342974	liver	0	0.38	0.18	0.8915344
Tight junction	ACTG1	rs7342974	liver	3.00E-30	3.80E-01	1.80E-01	8.92E-01
Tight junction	ACTN1	rs743128	liver	6.50E-05	6.60E-02	7.70E-03	6.89E-01
Tight junction	ACTN3	rs7925108	omental adipose	1.20E-25	6.30E-02	9.30E-04	9.27E-01
Tight junction	ACTN3	rs7925108	subcutaneous adipose	7.30E-08	6.30E-02	9.30E-04	9.27E-01
Tight junction	CDK4	rs867008	subcutaneous adipose	1.30E-05	4.30E-01	3.80E-01	6.99E-01
Tight junction	CLDN10	rs12583161	omental adipose	1.50E-10	9.10E-01	8.90E-02	2.25E-01
Tight junction	CLDN11	rs11915263	omental adipose	0.00011	0.48	0.46	0.70116788
Tight junction	CLDN14	rs9985060	liver	1.50E-05	1.90E-01	5.50E-02	7.87E-01
Tight junction	CLDN15	rs6942609	subcutaneous adipose	5.00E-07	1.30E-01	1.50E-02	8.90E-01
Tight junction	CLDN23	rs2976929	liver	2.70E-08	6.90E-03	4.30E-04	3.64E-01
Tight junction	CLDN23	rs2976929	omental adipose	7.10E-17	6.90E-03	4.30E-04	3.64E-01
Tight junction	CLDN23	rs2976929	subcutaneous adipose	5.70E-10	6.90E-03	4.30E-04	3.64E-01
Tight junction	CLDN3	rs6460052	liver	1.40E-10	2.00E-01	1.70E-01	5.02E-01
Tight junction	CLDN4	rs6460052	omental adipose	4.80E-12	2.00E-01	1.70E-01	5.02E-01
Tight junction	CLDN4	rs6460052	subcutaneous adipose	2.10E-12	2.00E-01	1.70E-01	5.02E-01
Tight junction	CLDN5	rs2871029	omental adipose	6.80E-06	3.60E-01	6.50E-01	3.66E-01
Tight junction	CLDN7	rs2654189	liver	3.80E-07	2.60E-01	3.90E-01	3.85E-01
Tight junction	CSDA	rs10845202	omental adipose	2.70E-05	2.60E-01	1.20E-01	7.58E-01
Tight junction	CSNK2B	rs1077394	liver	2.00E-07	2.10E-05	5.50E-04	1.85E-03
Tight junction	CSNK2B	rs1077394	omental adipose	2.20E-08	2.10E-05	5.50E-04	1.85E-03
Tight junction	CSNK2B	rs1077394	subcutaneous adipose	9.50E-08	2.10E-05	5.50E-04	1.85E-03
Tight junction	CTNNA1	rs10062943	omental adipose	3.00E-19	1.40E-01	1.90E-01	3.22E-01
Tight junction	CTNNA1	rs10062943	subcutaneous adipose	1.10E-09	1.40E-01	1.90E-01	3.22E-01

Pathway	Gene	eSNP	Tissue	SNP-Expression Pvalue	SNP-T2D Pvalue		
					DIAGRAM	WTCCC	Non-WTCCC
Tight junction	CTNNA1	rs744675	omental adipose	2.90E-18	1.40E-01	1.90E-01	3.22E-01
Tight junction	CTNNA1	rs744675	subcutaneous adipose	2.20E-11	1.40E-01	1.90E-01	3.22E-01
Tight junction	CTNNA2	rs4296451	omental adipose	1.60E-06	9.50E-01	1.00E-01	2.15E-01
Tight junction	CTNNA3	rs2441718	liver	8.80E-07	6.70E-02	1.60E-01	1.59E-01
Tight junction	CTNNB1	rs9862024	omental adipose	7.20E-05	9.20E-01	9.20E-02	2.23E-01
Tight junction	CTTN	rs12787159	liver	7.00E-05	NA	3.60E-01	NA
Tight junction	CTTN	rs12801756	liver	5.70E-05	NA	3.60E-01	NA
Tight junction	EPB41	rs12045777	omental adipose	1.00E-04	7.40E-02	3.80E-01	7.68E-02
Tight junction	EPB41L1	rs6058296	omental adipose	8.90E-07	9.20E-01	1.20E-01	2.65E-01
Tight junction	EPB41L1	rs6058296	subcutaneous adipose	6.50E-05	9.20E-01	1.20E-01	2.65E-01
Tight junction	EPB41L2	rs6933789	omental adipose	9.80E-05	4.10E-01	3.40E-01	7.09E-01
Tight junction	EXOC3	rs11134054	omental adipose	3.20E-18	1.30E-01	2.10E-02	8.11E-01
Tight junction	EXOC3	rs11134054	subcutaneous adipose	2.30E-14	1.30E-01	2.10E-02	8.11E-01
Tight junction	EXOC4	rs6976491	liver	1.30E-05	6.70E-04	2.10E-04	8.39E-02
Tight junction	F11R	rs11265544	liver	3.90E-07	9.70E-01	1.70E-01	2.92E-01
Tight junction	GNAI1	rs6467133	subcutaneous adipose	1.30E-05	1.10E-01	1.30E-01	3.19E-01
Tight junction	GNAI3	rs17035630	omental adipose	2.90E-05	8.30E-01	6.80E-02	2.40E-01
Tight junction	HCLS1	rs1920322	omental adipose	2.30E-09	5.90E-01	1.10E-01	5.88E-01
Tight junction	HRAS	rs4963128	omental adipose	5.70E-09	9.30E-01	2.50E-01	4.20E-01
Tight junction	INADL	rs10889286	liver	0	0.94	0.035	0.11055581
Tight junction	JAM3	rs11606866	liver	2.30E-05	8.20E-02	1.10E-02	7.18E-01
Tight junction	JAM3	rs11606866	omental adipose	2.00E-08	8.20E-02	1.10E-02	7.18E-01
Tight junction	JAM3	rs12573858	liver	6.20E-05	8.70E-02	1.10E-02	7.47E-01
Tight junction	JAM3	rs12573858	omental adipose	2.10E-08	8.70E-02	1.10E-02	7.47E-01
Tight junction	KRAS	rs11048019	omental adipose	0.00011	0.051	0.041	0.28980561
Tight junction	KRAS	rs4963884	omental adipose	5.90E-05	6.30E-02	4.10E-02	3.52E-01
Tight junction	LLGL2	rs8064529	subcutaneous adipose	1.00E-04	8.00E-01	5.40E-01	8.86E-01
Tight junction	MAGI3	rs11804407	subcutaneous adipose	0.00011	0.39	0.067	0.77576527
Tight junction	MLLT4	rs6906754	liver	1.20E-06	4.60E-01	6.40E-01	5.17E-01
Tight junction	MLLT4	rs6906754	omental adipose	6.90E-08	4.60E-01	6.40E-01	5.17E-01

Pathway	Gene	eSNP	Tissue	SNP-Expression Pvalue	SNP-T2D Pvalue		
					DIAGRAM	WTCCC	Non-WTCCC
Tight junction	MPP5	rs7359115	subcutaneous adipose	4.80E-05	4.60E-01	6.90E-02	6.59E-01
Tight junction	MYH1	rs1989811	omental adipose	8.10E-13	1.60E-04	4.40E-05	5.23E-02
Tight junction	MYH1	rs1989811	subcutaneous adipose	1.70E-08	1.60E-04	4.40E-05	5.23E-02
Tight junction	MYH1	rs2097657	omental adipose	8.10E-13	4.30E-04	4.40E-05	1.12E-01
Tight junction	MYH1	rs2097657	subcutaneous adipose	1.70E-08	4.30E-04	4.40E-05	1.12E-01
Tight junction	MYH10	rs8067045	liver	2.50E-07	6.60E-01	7.70E-01	7.08E-01
Tight junction	MYH14	rs10408812	omental adipose	0.00012	0.04	0.27	0.0501446
Tight junction	MYH2	rs1989811	omental adipose	7.60E-09	1.60E-04	4.40E-05	5.23E-02
Tight junction	MYH2	rs1989811	subcutaneous adipose	4.90E-10	1.60E-04	4.40E-05	5.23E-02
Tight junction	MYH2	rs2097657	omental adipose	7.60E-09	4.30E-04	4.40E-05	1.12E-01
Tight junction	MYH2	rs2097657	subcutaneous adipose	4.90E-10	4.30E-04	4.40E-05	1.12E-01
Tight junction	MYH3	rs1544500	subcutaneous adipose	0.00011	0.27	0.13	0.7574358
Tight junction	MYH6	rs4635261	liver	6.60E-05	NA	8.60E-01	NA
Tight junction	MYH9	rs2239781	omental adipose	7.30E-05	3.00E-01	4.00E-01	4.48E-01
Tight junction	MYL5	rs7687129	subcutaneous adipose	3.50E-05	9.40E-01	5.70E-02	1.53E-01
Tight junction	OCLN	rs11744596	omental adipose	4.40E-08	7.90E-01	3.40E-01	6.89E-01
Tight junction	OCLN	rs2932777	omental adipose	5.00E-08	7.90E-01	3.40E-01	6.89E-01
Tight junction	PARD3	rs3781128	liver	0	0.28	0.26	0.55522983
Tight junction	PARD6G	rs12458154	omental adipose	0.00013	0.86	0.54	0.8029392
Tight junction	PPM1J	rs10857978	omental adipose	8.60E-05	6.80E-01	5.80E-02	3.39E-01
Tight junction	PPP2CB	rs2956012	liver	2.50E-13	6.30E-01	1.00E-01	5.10E-01
Tight junction	PPP2CB	rs2956012	omental adipose	2.30E-09	6.30E-01	1.00E-01	5.10E-01
Tight junction	PPP2CB	rs2956012	subcutaneous adipose	5.30E-09	6.30E-01	1.00E-01	5.10E-01
Tight junction	PPP2R1A	rs6509628	omental adipose	8.30E-12	3.10E-01	1.70E-01	7.63E-01
Tight junction	PPP2R1A	rs6509628	subcutaneous adipose	2.90E-09	3.10E-01	1.70E-01	7.63E-01
Tight junction	PPP2R1B	rs10502145	liver	1.10E-05	5.60E-01	1.20E-01	6.56E-01
Tight junction	PPP2R2A	rs7829309	liver	5.40E-05	5.90E-01	9.60E-01	4.80E-01
Tight junction	PPP2R2C	rs11734695	omental adipose	1.80E-06	6.20E-01	3.50E-01	9.47E-01
Tight junction	PPP2R3A	rs36064	omental adipose	2.30E-05	1.20E-01	2.40E-01	2.27E-01
Tight junction	PPP2R4	rs1075650	subcutaneous adipose	3.90E-05	2.50E-01	3.20E-06	3.07E-02

Pathway	Gene	eSNP	Tissue	SNP-Expression Pvalue	SNP-T2D Pvalue		
					DIAGRAM	WTCCC	Non-WTCCC
Tight junction	PRKCA	rs16960228	liver	1.60E-06	5.30E-01	1.90E-03	1.02E-01
Tight junction	PRKCB1	rs12931116	subcutaneous adipose	2.70E-06	2.50E-01	3.20E-01	4.28E-01
Tight junction	PRKCH	rs2246695	omental adipose	3.20E-07	2.40E-02	4.50E-01	1.17E-02
Tight junction	PRKCI	rs1352204	omental adipose	9.30E-07	1.30E-01	5.30E-02	5.90E-01
Tight junction	PTEN	rs406671	subcutaneous adipose	7.60E-05	8.80E-01	2.10E-01	4.23E-01
Tight junction	RAB13	rs11264743	subcutaneous adipose	5.70E-05	9.20E-01	6.40E-01	8.12E-01
Tight junction	RHOA	rs9586	omental adipose	3.60E-06	4.50E-01	3.00E-01	8.32E-01
Tight junction	SYMPK	rs7248426	omental adipose	1.50E-08	3.60E-02	1.90E-01	6.41E-02
Tight junction	TJP3	rs2067019	liver	7.60E-06	NA	1.20E-01	NA
Antigen processing and presentation	KLRC1	rs2900420	liver	2.10E-10	1.60E-01	7.90E-02	5.95E-01
Antigen processing and presentation	KLRC1	rs2900420	subcutaneous adipose	4.80E-05	1.60E-01	7.90E-02	5.95E-01
Antigen processing and presentation	KLRC2	rs2607894	liver	1.60E-05	3.40E-01	7.20E-02	8.99E-01
Antigen processing and presentation	KLRC3	rs2900420	liver	5.80E-07	1.60E-01	7.90E-02	5.95E-01
Antigen processing and presentation	KLRC3	rs2900420	subcutaneous adipose	1.30E-05	1.60E-01	7.90E-02	5.95E-01
Antigen processing and presentation	KLRC4	rs2255336	subcutaneous adipose	3.40E-09	6.60E-01	1.70E-01	6.20E-01
Antigen processing and presentation	KLRD1	rs17808345	omental adipose	2.40E-14	9.00E-01	2.10E-01	4.03E-01
Antigen processing and presentation	KLRD1	rs17808345	subcutaneous adipose	2.00E-10	9.00E-01	2.10E-01	4.03E-01
Antigen processing and presentation	KIR2DL1	rs581623	liver	8.50E-10	NA	4.50E-01	NA
Antigen processing and presentation	KIR2DL1	rs581623	omental adipose	8.50E-08	NA	4.50E-01	NA
Antigen processing and presentation	KIR2DL1	rs581623	subcutaneous adipose	1.90E-12	NA	4.50E-01	NA
Antigen processing and presentation	KIR2DL3	rs581623	subcutaneous adipose	2.90E-06	NA	4.50E-01	NA
Antigen processing and presentation	KIR2DS4	rs3745902	liver	6.70E-06	5.30E-01	3.70E-01	8.82E-01

Pathway	Gene	eSNP	Tissue	SNP-Expression Pvalue	SNP-T2D Pvalue		
					DIAGRAM	WTCCC	Non-WTCCC
Antigen processing and presentation	KIR3DL2	rs3745902	liver	9.20E-08	5.30E-01	3.70E-01	8.82E-01
Antigen processing and presentation	HLA-DMB	rs3134954	subcutaneous adipose	5.70E-05	5.70E-03	3.20E-01	2.43E-03
Antigen processing and presentation	HLA-DOA	rs2239839	omental adipose	1.80E-05	5.20E-01	4.40E-02	4.64E-01
Antigen processing and presentation	HLA-DOB	rs209473	omental adipose	1.00E-04	3.90E-01	4.50E-01	5.60E-01
Antigen processing and presentation	HLA-DPA1	rs3117324	omental adipose	1.30E-05	5.70E-01	9.90E-02	5.87E-01
Antigen processing and presentation	HLA-DPB1	rs210170	subcutaneous adipose	3.10E-05	7.00E-01	1.50E-02	1.54E-01
Antigen processing and presentation	HLA-DQA1	rs1077394	liver	6.90E-05	2.10E-05	5.50E-04	1.85E-03
Antigen processing and presentation	HLA-DQA1	rs1077394	omental adipose	3.00E-12	2.10E-05	5.50E-04	1.85E-03
Antigen processing and presentation	HLA-A	rs2844786	omental adipose	9.90E-09	4.00E-01	5.20E-04	1.03E-01
Antigen processing and presentation	HLA-A	rs2844786	subcutaneous adipose	6.80E-07	4.00E-01	5.20E-04	1.03E-01
Antigen processing and presentation	HLA-B	rs2260000	subcutaneous adipose	4.90E-06	7.20E-04	1.80E-03	2.98E-02
Antigen processing and presentation	HLA-C	rs2596503	liver	4.60E-06	2.40E-03	3.20E-03	6.68E-02
Antigen processing and presentation	HLA-C	rs2596503	omental adipose	3.50E-06	2.40E-03	3.20E-03	6.68E-02
Antigen processing and presentation	HLA-C	rs2596503	subcutaneous adipose	3.30E-06	2.40E-03	3.20E-03	6.68E-02
Antigen processing and presentation	HLA-DMA	rs2395296	subcutaneous adipose	0.00013	0.96	0.76	0.8596876
Antigen processing and presentation	HLA-E	rs2523589	omental adipose	5.70E-05	1.40E-04	1.90E-03	5.48E-03
Antigen processing and presentation	HLA-F	rs5009448	liver	3.60E-06	3.00E-01	5.40E-03	4.20E-01
Antigen processing and presentation	HLA-G	rs2256902	liver	1.20E-05	1.10E-03	8.10E-04	6.80E-02
Antigen processing and presentation	HLA-G	rs2256902	omental adipose	7.40E-06	1.10E-03	8.10E-04	6.80E-02

Pathway	Gene	eSNP	Tissue	SNP-Expression Pvalue	SNP-T2D Pvalue		
					DIAGRAM	WTCCC	Non-WTCCC
Antigen processing and presentation	HLA-G	rs2256902	subcutaneous adipose	3.60E-06	1.10E-03	8.10E-04	6.80E-02
Antigen processing and presentation	HLA-DRB1	rs1077394	omental adipose	2.90E-11	2.10E-05	5.50E-04	1.85E-03
Antigen processing and presentation	HLA-DRB1	rs1077394	subcutaneous adipose	2.20E-09	2.10E-05	5.50E-04	1.85E-03
Antigen processing and presentation	HLA-DRB5	rs1077394	omental adipose	1.40E-05	2.10E-05	5.50E-04	1.85E-03
Antigen processing and presentation	HLA-DRB5	rs1077394	subcutaneous adipose	2.20E-05	2.10E-05	5.50E-04	1.85E-03
Antigen processing and presentation	HLA-DQA1	rs1077394	subcutaneous adipose	9.20E-07	2.10E-05	5.50E-04	1.85E-03
Antigen processing and presentation	HLA-DQA2	rs2858331	omental adipose	7.40E-05	9.00E-02	2.70E-03	9.46E-01
Antigen processing and presentation	HLA-DQB1	rs7745656	liver	7.40E-07	7.90E-02	1.90E-03	9.46E-01
Antigen processing and presentation	HLA-DQB1	rs7745656	omental adipose	1.20E-19	7.90E-02	1.90E-03	9.46E-01
Antigen processing and presentation	HLA-DQB1	rs7745656	subcutaneous adipose	7.60E-22	7.90E-02	1.90E-03	9.46E-01
Antigen processing and presentation	HLA-DRA	rs2858331	liver	1.90E-07	9.00E-02	2.70E-03	9.46E-01
Antigen processing and presentation	HLA-DRB1	rs1077394	liver	1.50E-05	2.10E-05	5.50E-04	1.85E-03
Antigen processing and presentation	IFNA10	rs10738611	omental adipose	8.10E-05	7.50E-01	9.30E-01	7.11E-01
Antigen processing and presentation	IFNA14	rs2073854	subcutaneous adipose	4.90E-05	NA	5.20E-01	NA
Antigen processing and presentation	HSPA1B	rs1077394	liver	1.50E-05	2.10E-05	5.50E-04	1.85E-03
Antigen processing and presentation	HSPA1B	rs1077394	omental adipose	3.90E-07	2.10E-05	5.50E-04	1.85E-03
Antigen processing and presentation	HSPA1B	rs1077394	subcutaneous adipose	1.00E-06	2.10E-05	5.50E-04	1.85E-03
Antigen processing and presentation	HSPA1L	rs2260000	omental adipose	4.80E-05	7.20E-04	1.80E-03	2.98E-02
Antigen processing and presentation	HSPA2	rs7143124	omental adipose	5.10E-07	5.90E-01	7.10E-01	6.55E-01



Pathway	Gene	eSNP	Tissue	SNP-Expression Pvalue	SNP-T2D Pvalue		
					DIAGRAM	WTCCC	Non-WTCCC
Antigen processing and presentation	HSPA4	rs12517292	liver	1.10E-06	NA	1.50E-01	NA
Antigen processing and presentation	HSPA4	rs12517292	omental adipose	6.00E-05	NA	1.50E-01	NA
Antigen processing and presentation	HSPA4	rs12517292	subcutaneous adipose	1.00E-04	NA	1.50E-01	NA
Antigen processing and presentation	HSPA8	rs7113273	omental adipose	1.20E-05	1.90E-01	6.40E-02	7.46E-01
Antigen processing and presentation	PSME1	rs10144409	liver	7.10E-05	9.20E-01	2.40E-01	4.19E-01
Antigen processing and presentation	NFYB	rs11111897	liver	5.60E-05	3.20E-01	2.60E-01	6.38E-01
Antigen processing and presentation	NFYC	rs2744805	liver	3.80E-06	1.50E-01	6.00E-02	6.31E-01
Antigen processing and presentation	NFYC	rs2744805	omental adipose	1.70E-06	1.50E-01	6.00E-02	6.31E-01
Antigen processing and presentation	CD4	rs1055141	liver	1.40E-06	1.90E-01	5.50E-02	7.87E-01
Antigen processing and presentation	CALR	rs8012	liver	2.30E-05	NA	4.80E-02	NA
Antigen processing and presentation	CANX	rs10516146	subcutaneous adipose	3.30E-05	3.40E-01	3.60E-01	5.58E-01
Antigen processing and presentation	CANX	rs12374446	subcutaneous adipose	2.90E-05	3.50E-01	3.60E-01	5.77E-01
Antigen processing and presentation	CIITA	rs7501308	subcutaneous adipose	0.00013	0.2	0.11	0.62514245
Antigen processing and presentation	CD8B	rs6547705	omental adipose	0.00013	0.2	0.087	0.69117694
Antigen processing and presentation	CREB1	rs2042135	liver	9.00E-05	5.00E-01	1.60E-01	8.43E-01
Antigen processing and presentation	CTSS	rs10305724	omental adipose	1.10E-05	9.60E-02	6.10E-02	4.25E-01
Antigen processing and presentation	CTSB	rs2898295	liver	5.50E-05	1.20E-02	5.60E-03	2.11E-01
Antigen processing and presentation	TAP1	rs2071477	liver	2.60E-06	1.30E-01	4.70E-01	1.29E-01
Antigen processing and presentation	TAP2	rs2858331	omental adipose	2.20E-07	9.00E-02	2.70E-03	9.46E-01

Pathway	Gene	eSNP	Tissue	SNP-Expression Pvalue	SNP-T2D Pvalue		
					DIAGRAM	WTCCC	Non-WTCCC
Antigen processing and presentation	TAP2	rs2858331	subcutaneous adipose	1.90E-07	9.00E-02	2.70E-03	9.46E-01
Antigen processing and presentation	TAPBP	rs2239839	liver	2.20E-05	5.20E-01	4.40E-02	4.64E-01
Antigen processing and presentation	TAPBP	rs2239839	omental adipose	1.10E-07	5.20E-01	4.40E-02	4.64E-01
Antigen processing and presentation	TAPBP	rs2239839	subcutaneous adipose	8.40E-05	5.20E-01	4.40E-02	4.64E-01

**Table S3. eSNP-GWAS SNP Linkage Disequilibrium**

Among the 18 T2D genes derived from the replicated GWAS SNPs, six genes have at least one eSNP. Based on HapMap data, four out of the six eSNPs that we used to represent these six GWAS genes are in reasonable linkage disequilibrium (LD) with the corresponding GWAS hits. However, the eSNP for *PPARG* is not in LD with the GWAS SNP and the eSNP for *CDKAL1* is over 600kb away from the GWAS SNP.

Gene	eSNP	GWAS SNP	eSNP_Position	GWAS SNP Position	Population	D'	r <sup>2</sup>	LOD	Distance
NOTCH2	rs2793823	rs10923931	1.2E+08	1.2E+08	CEU	1	0.69	18.64	-80241
PPARG	rs1797912	rs1801282	12445239	12368125	CEU	0.527	0.019	0.77	-77114
ADAMTS9	rs4132228	rs4607103	64683154	64686944	CEU	0.96	0.681	21.56	-3790
CDKAL1	rs807835	rs7754840	21385742	20769229	CEU				616513
JAZ1	rs1635852	rs864745	28155936	28147081	CEU	1	0.978	49.35	-8855
TSPAN8	rs1614565	rs7961581	69835363	69949369	CEU	0.852	0.269	8.31	-114006