

Supplementary Table S6 Non-alcoholic steatohepatitis (NASH) specifically affected gene products included in the top 20 GO biological processes (Table 1B) and their functional annotations by MetaCore software.

Gene symbol ^a	Gene ID	Infinium Probe ID ^b	Functional annotation by MetaCore Software
<i>AAMDC</i>	28971	cg24240077	Protein binding
<i>ABCF2</i>	10061	cg08499057	ATP binding, ATPase activity, nucleotide binding, transporter activity
<i>ACOT7</i>	11332	cg08679807	Protein homodimerization activity, fatty-acyl-CoA binding
<i>ADARB1</i>	104	cg22226852	Poly(A) RNA binding ^d , mRNA binding ^d
<i>ADCY10</i>	55811	cg09372808	Magnesium ion binding, manganese ion binding
<i>AFF1</i>	4299	cg21988461	Transcription factor activity, sequence-specific DNA binding ^c
<i>AFG3L2</i>	10939	cg16615927	Metalloendopeptidase activity, unfolded protein binding
<i>AGAP3</i>	116988	cg02158565	GTP binding, GTPase activator activity
<i>AJUBA</i>	84962	cg08188555, cg13067221	Chromatin binding ^e , actin filament binding, alpha-catenin binding, transcription corepressor activity
<i>AKRIC2</i>	1646	cg00863716	Oxidoreductase activity, carboxylic acid binding
<i>ALDOA</i>	226	cg16362480	Poly(A) RNA binding ^d , actin binding
<i>APOM</i>	55937	cg22252462	Phospholipid binding, lipid transporter activity
<i>ARF4</i>	378	cg08081407	GTP binding, signal transducer activity
<i>ARHGAP22</i>	58504	cg03768916, cg08524474	Protein binding, GTPase activator activity
<i>ARHGEF10</i>	9639	cg15164048	Rho guanyl-nucleotide exchange factor activity, kinesin binding
<i>ASB7</i>	140460	cg04318546	Protein binding
<i>ATG7</i>	22838	cg12198254	Protein homodimerization activity, ubiquitin activating enzyme activity
<i>BAG6</i>	7917	cg16500605	Ubiquitin protein ligase binding, Hsp70 protein binding
<i>BCAR3</i>	8412	cg06221222	Guanyl-nucleotide exchange factor activity
<i>BCAS3</i>	54828	cg22435132	Chromatin binding ^e , histone binding ^e
<i>C12orf43</i>	64897	cg08282784	Protein binding
<i>CACNG2</i>	10369	cg15606745	Voltage-gated calcium channel activity, ionotropic glutamate receptor binding
<i>CDC42BPB</i>	9578	cg21937244	Transferase activity, transferring phosphorus-containing groups, protein tyrosine kinase activity
<i>CDHR5</i>	53841	cg21565415	Calcium ion binding, beta-catenin binding
<i>CDKN1C</i>	1028	cg08206623	Cyclin-dependent protein serine/threonine kinase inhibitor activity
<i>CFLAR</i>	8837	cg01779076	Protein complex binding, cysteine-type peptidase activity
<i>CLEC2L</i>	154790	cg04205664	Carbohydrate binding
<i>CLK2</i>	1196	cg24054272	Transferase activity, transferring phosphorus-containing groups, protein tyrosine kinase activity
<i>CLSTN1</i>	22883	cg12856855	Calcium ion binding, beta-amyloid binding
<i>CTNNA1</i>	1495	cg07893230	Poly(A) RNA binding ^d , actin filament binding
<i>CTSZ</i>	1522	cg13021192	Cysteine-type peptidase activity
<i>CUX1</i>	1523	cg02775353	Sequence-specific DNA binding ^c , RNA polymerase II regulatory region sequence-specific DNA binding ^c
<i>DNMBP</i>	23268	cg02732134	Rho guanyl-nucleotide exchange factor activity
<i>DUSP1</i>	1843	cg12333707	Phosphatase activity, protein tyrosine/serine/threonine phosphatase activity
<i>EEF1D</i>	196549	cg10614773	Signal transducer activity, translation factor activity, RNA binding ^d
<i>EEF1DP3</i>	196549	cg00648883	Protein binding, chaperone binding, translation elongation factor activity
<i>EFR3B</i>	22979	cg01400712	Binding
<i>EGFR</i>	1956	cg20706768	Identical protein binding, protein kinase activity

Gene symbol ^a	Gene ID	Infinium Probe ID ^b	Functional annotation by MetaCore Software
<i>EHMT1</i>	79813	cg14495033	Methyltransferase activity, histone-lysine N-methyltransferase activity ^e
<i>EMX1</i>	2016	cg15921587	Sequence-specific DNA binding ^c
<i>EPHX2</i>	2053	cg26725786	Protein homodimerization activity, hydrolase activity
<i>EXOC2</i>	55770	cg01870519	Protein kinase binding, Ral GTPase binding
<i>FAM64A</i>	54478	cg27248073	Protein binding
<i>FAM83G</i>	644815	cg26849884	Protein binding
<i>FBXO18</i>	84893	cg27435660	ATP-dependent DNA helicase activity
<i>FGF12</i>	2257	cg10665123	Growth factor activity, ion channel binding
<i>FLCN</i>	201163	cg07138452	Protein complex binding
<i>FNDC5</i>	252995	cg25364822	Hormone activity
<i>FOXP3</i>	1112	cg11021810	Transcription factor activity, sequence-specific DNA binding ^c , protein C-terminus binding
<i>FYTD1</i>	84248	cg05788437	Poly(A) RNA binding ^d , mRNA binding ^d
<i>GARI</i>	54433	cg17404403	Poly(A) RNA binding ^d , cation channel activity
<i>GAS7</i>	8522	cg25365518	Transcription factor activity, sequence-specific DNA binding ^c , actin filament binding
<i>GCHI</i>	2643	cg19502207	Calcium ion binding, GTP binding
<i>GMCLIP1</i>	64396	cg24618378	Protein binding
<i>GNG4</i>	2786	cg10840412	Signal transducer activity
<i>GPRC5B</i>	51704	cg09141413	G-protein coupled receptor activity, G-protein coupled receptor binding
<i>GRAMD3</i>	65983	cg02427576	Protein binding
<i>GRID1</i>	2894	cg04582294	Ionotropic glutamate receptor activity, extracellular-glutamate-gated ion channel activity
<i>GRM4</i>	2914	cg04762129	G-protein coupled receptor activity, calcium-dependent protein binding
<i>GTF2H1</i>	2965	cg18905668	Protein kinase activity, RNA polymerase II carboxy-terminal domain kinase activity, chromatin binding ^e
<i>GYPB</i>	2994	cg16636571	Protein binding
<i>HAMP</i>	57817	cg14554776	Receptor binding, ion channel inhibitor activity
<i>HIVEP1</i>	3096	cg11754060	Nucleic acid binding ^c
<i>HSD11B2</i>	3291	cg01443318	Oxidoreductase activity, steroid binding
<i>HTRA1</i>	3096	cg03176729, cg04768425	Serine-type endopeptidase activity, insulin-like growth factor binding
<i>HYAL1</i>	3373	cg20724227	Transcription factor binding, hyaluronoglucosaminidase activity
<i>IL20</i>	50604	cg01103730	Cytokine activity, interleukin-20 receptor binding
<i>INO80</i>	54617	cg00470768	Actin binding, DNA helicase activity
<i>IRF7</i>	3665	cg14067770	Transcription factor activity, sequence-specific DNA binding ^c , regulatory region DNA binding ^c
<i>IRS2</i>	8660	cg11153485	Protein kinase binding, protein domain specific binding
<i>ITM2B</i>	9445	cg14925260	Beta-amyloid binding
<i>IWS1</i>	55677	cg22196977	DNA binding ^c , protein binding
<i>KCTD5</i>	54442	cg02205746	Protein complex binding
<i>KIF26B</i>	55083	cg22729008	ATPase activity, microtubule motor activity
<i>KLRC3</i>	3823	cg03258272	GTP binding, GTPase activity
<i>KLRD1</i>	3824	cg05589762	Transmembrane signaling receptor activity, MHC class I protein complex binding
<i>LINC00526</i>	147525	cg06808467	Protein binding
<i>LRP4</i>	4038	cg23062006	Calcium ion binding, scaffold protein binding
<i>LRRFIP1</i>	9208	cg07797518	Protein homodimerization activity, double-stranded RNA binding ^d
<i>MAD1L1</i>	8379	cg18011078	Protein binding
<i>MAPK3</i>	5595	cg00192773	Transferase activity, transferring phosphorus-containing groups, protein tyrosine kinase activity

Gene symbol ^a	Gene ID	Infinium Probe IDb	Functional annotation by MetaCore Software
<i>MAPKAPK5</i>	8550	cg20090957	Transferase activity, transferring phosphorus-containing groups, protein tyrosine kinase activity
<i>METRNL</i>	284207	cg25270498	Hormone activity
<i>MICAL3</i>	57553	cg05367846	Actin binding, Rab GTPase binding
<i>MLLT1</i>	4298	cg23084309	DNA binding ^c , protein binding
<i>MPV17L</i>	255027	cg09844907	Receptor binding
<i>MRAP</i>	56246	cg01198024	Type 3 melanocortin receptor binding, type 1 melanocortin receptor binding
<i>MRAP2</i>	112609	cg15411280	Identical protein binding, type 4 melanocortin receptor binding
<i>MRGBP</i>	55257	cg21407906	Protein binding
<i>MRPL22</i>	29093	cg17462962	Poly(A) RNA binding ^d , structural constituent of ribosome
<i>MRPS24</i>	64951	cg11213199	Poly(A) RNA binding ^d , structural constituent of ribosome
<i>MSX1</i>	4487	cg01959412	Sequence-specific DNA binding ^c , p53 binding
<i>MT4</i>	84560	cg13373996	Metal ion binding
<i>MYO7A</i>	4647	cg26952188	Protein homodimerization activity, protein domain specific binding
<i>MYT1L</i>	23040	cg04449562	Transcription factor activity, sequence-specific DNA binding ^c
<i>NADK</i>	65220	cg02280859	NAD+ kinase activity
<i>NCAPH2</i>	29781	cg25152348	Protein binding
<i>NEO1</i>	4756	cg15888301	Neceptor activity, cadherin binding
<i>NFRKB</i>	4798	cg14319842	DNA binding ^c , protease binding
<i>NKX6-2</i>	84504	cg06082548	Transcription factor activity, sequence-specific DNA binding ^c
<i>NOTCH1</i>	4851	cg13659914	Transcription factor activity, sequence-specific DNA binding ^c
<i>NQO2</i>	4835	cg09741240	Oxidoreductase activity, NADPH dehydrogenase (quinone) activity
<i>OASI</i>	4938	cg04951822	RNA binding ^d , transferase activity
<i>OBSCN</i>	84033	cg25622855	Transferase activity, transferring phosphorus-containing groups, protein tyrosine kinase activity.
<i>PCDH9</i>	5101	cg13473086	Calcium ion binding
<i>PCNT</i>	5116	cg05998816	Calmodulin binding
<i>PEX10</i>	5192	cg05461259	Protein C-terminus binding.
<i>PGS1</i>	9489	cg22290140	Calcium ion binding, CDP-diacylglycerol-glycerol-3-phosphate 3-phosphatidyltransferase activity
<i>PHF13</i>	148479	cg02900253	Chromatin binding ^e , methylated histone binding ^e
<i>PHIP</i>	55023	cg11227604	Insulin receptor binding, lysine-acetylated histone binding ^e
<i>PKP4</i>	8502	cg13896783	Binding
<i>PLAG1</i>	5324	cg01994308	Transcription factor activity, sequence-specific DNA binding ^c , transcriptional activator activity, RNA polymerase II core promoter proximal region sequence-specific DNA binding ^c
<i>PLEKHO2</i>	80301	cg07467323	
<i>PMPCA</i>	23203	cg13560760	Metalloendopeptidase activity
<i>PODXL</i>	5420	cg02051077	Protein binding
<i>POM121C</i>	100101267	cg23472171	Protein binding
<i>PPP1R8</i>	5511	cg08857906	RNA binding ^d , protein phosphatase type 1 regulator activity
<i>PPP2R2C</i>	5522	cg11158902	Protein phosphatase type 2A regulator activity
<i>PPP2R5C</i>	5527	cg08163906	Binding, protein phosphatase type 2A regulator activity
<i>PRAMI</i>	84106	cg09112613	Lipid binding
<i>PRDM4</i>	11108	cg03909902	Death receptor binding, DNA binding ^c , histone methyltransferase activity ^e
<i>PRKAG2</i>	51422	cg13810766	Protein kinase binding, protein kinase activator activity
<i>PRKCE</i>	5581	cg04035064	Transferase activity, transferring phosphorus-containing groups, protein tyrosine kinase activity

Gene symbol ^a	Gene ID	Infinium Probe ID ^b	Functional annotation by MetaCore Software
<i>PRKDC</i>	5591	cg12445378	Poly(A) RNA binding ^d , protein kinase activity
<i>PSMF1</i>	9491	cg14398557	Endopeptidase inhibitor activity, proteasome binding
<i>RAD51B</i>	5890	cg11036936	Nucleotide binding ^c , single-stranded DNA binding ^c
<i>RALGDS</i>	5900	cg13471932	Guanyl-nucleotide exchange factor activity, GTPase regulator activity
<i>RANBP1</i>	5902	cg18631743	GTPase activator activity, GDP-dissociation inhibitor activity
<i>RAP1B</i>	5908	cg00236302	GTP binding, protein complex binding
<i>RASA2</i>	5922	cg10757852	GTPase activator activity
<i>RASGRP3</i>	25780	cg06971903	Calcium ion binding, GTPase activator activity
<i>RASSF3</i>	283349	cg00771490	Identical protein binding
<i>RBFA</i>	79863	cg20390253	Protein binding
<i>RBPJ</i>	3516	cg21843114	Transcription factor activity, sequence-specific DNA binding ^c , chromatin binding ^c
<i>RCOR1</i>	23186	cg08707819	Chromatin binding ^e , transcriptional repressor activity, RNA polymerase II core promoter proximal region sequence-specific DNA binding ^c
<i>REXO1</i>	57455	cg25538450	Nucleic acid binding ^d , exonuclease activity ^d
<i>RGS6</i>	9628	cg01775802	Signal transducer activity, protein domain specific binding
<i>RPH3AL</i>	9501	cg03321231	Calcium ion binding, syntaxin binding
<i>RPS6KA2</i>	6196	cg23954724 cg25512188	Transferase activity, transferring phosphorus-containing groups, protein tyrosine kinase activity
<i>RTF1</i>	91869	cg06183256	Poly(A) RNA binding ^d , single-stranded DNA binding ^c
<i>SAMD4A</i>	23034	cg07449447	Poly(A) RNA binding ^d , translation repressor activity
<i>SBF1</i>	6305	cg20769334	Phosphatase activity, Rab guanyl-nucleotide exchange factor activity
<i>SCARB1</i>	949	cg19358664	Protein homodimerization activity, phosphatidylserine binding
<i>SERPINA12</i>	145264	cg19904425	Serine-type endopeptidase inhibitor activity
<i>SGTB</i>	54557	cg06708122	Protein binding
<i>SKI</i>	6497	cg01881525	Chromatin binding ^e , ubiquitin protein ligase binding
<i>SMAD3</i>	4088	cg07576222	Transcription factor activity, sequence-specific DNA binding ^b
<i>SORCS2</i>	57537	cg16571794	Neuropeptide receptor activity
<i>SP2</i>	6668	cg06437144	RNA polymerase II transcription factor activity, sequence-specific DNA binding ^c , histone deacetylase binding ^e
<i>SPG7</i>	6687	cg12774921	ATPase activity, metalloendopeptidase activity
<i>SPIRE2</i>	84501	cg07959380	Actin binding
<i>SPTBN5</i>	51332	cg02852238	Actin binding, kinesin binding
<i>SUPT3H</i>	8464	cg14047339	Protein heterodimerization activity, histone acetyltransferase activity ^e
<i>SVIL</i>	6840	cg17428896	Actin binding, actin filament binding
<i>SYNPO</i>	11346	cg05714559	Actin binding
<i>SYNPO2L</i>	79933	cg09521743	Actin binding
<i>TESC</i>	54997	cg01073178	Calcium ion binding, magnesium ion binding
<i>TNXB</i>	7148	cg14263351	Heparin binding, collagen binding
<i>TRAPPC10</i>	7109	cg11381792	Sodium ion transmembr, transporter activity
<i>TRIM71</i>	131405	cg21654379	Ligase activity, miRNA binding ^d
<i>TRIO</i>	7204	cg08650290	Transferase activity, transferring phosphorus-containing groups, protein tyrosine kinase activity
<i>TRPV4</i>	59341	cg08114617	Protein kinase binding, microtubule binding
<i>TTC39B</i>	158219	cg14288292	Protein binding
<i>TTR</i>	7276	cg18038361	Identical protein binding, hormone activity
<i>UBE3C</i>	9690	cg15470736	Ligase activity, ubiquitin-protein transferase activity
<i>UNC45A</i>	55898	cg13417485	Binding, Hsp90 protein binding

Gene symbol ^a	Gene ID	Infinium Probe ID ^b	Functional annotation by MetaCore Software
<i>UNG</i>	7374	cg20982606	Uracil DNA N-glycosylase activity ^c
<i>VAC14</i>	55697	cg04458219	Binding, receptor activity
<i>VAX2</i>	25806	cg19015611	Transcription factor activity, sequence-specific DNA binding ^c , chromatin DNA binding ^c
<i>VWF</i>	7450	cg25884442	Protein homodimerization activity, integrin binding
<i>VWA2</i>	340706	cg01320048	Calcium ion binding, identical protein binding
<i>WDR6</i>	11180	cg13003239	Poly(A) RNA binding ^d , insulin receptor substrate binding
<i>WHSC1</i>	7468	cg03150409	Sequence-specific DNA binding ^c , histone-lysine N-methyltransferase activity ^e
<i>ZBTB46</i>	140685	cg01573175	Nucleic acid binding
<i>ZBTB7A</i>	51341	cg14679780	Histone acetyltransferase binding ^c
<i>ZC3H14</i>	79882	cg03468541	Poly(A) RNA binding ^d , RNA binding ^d
<i>ZCCHC24</i>	219654	cg02510736	Nucleic acid binding ^d , poly(A) RNA binding ^d
<i>ZNF268</i>	10795	cg07159286	Nucleic acid binding ^c , transcription factor activity, sequence-specific DNA binding ^c
<i>ZNF28</i>	7576	cg07738077	Phosphatidylinositol-3-phosphate binding
<i>ZNF280B</i>	140883	cg04971769	
<i>ZNF311</i>	282890	cg19513374, cg20235510	Nucleic acid binding ^c , transcription factor activity, sequence-specific DNA binding ^c
<i>ZNF425</i>	155054	cg25009327	Nucleic acid binding ^c
<i>ZNF708</i>	7562	cg04364726	Nucleic acid binding ^c
<i>ZNF827</i>	152485	cg07661849	Nucleic acid binding ^c
<i>ZNF876P</i>	642280	cg17030981	Nucleic acid binding ^c , RNA polymerase II core promoter proximal region sequence-specific DNA binding ^c
<i>ZP3</i>	7784	cg01219670	Signal transducer activity, store-operated calcium channel activity
<i>ZZEF1</i>	23140	cg19105961	Calcium ion binding

^aNational Center for Biotechnology Information (NCBI) database (Genome Build 37). ^bProbe ID of the Infinium HumanMethylation450 BeadChip. ^c31 genes encoding DNA binding proteins. ^d19 genes encoding RNA binding proteins. ^e15 genes encoding chromatin regulators.