

Table S1a. Genes and Top Functions in the Network

Top functions of genes in the Network were searched using Ingenuity Pathways Analysis. Accession No. represents NCBI DHA database accession No. The network No. presents the group of network. Blank in "Functions column" suggests that no network is reported.

Accession No.	Symbol	Network No.	Functions
NM_008084	Gapdh	2	Small Molecule Biochemistry, Drug Metabolism, Molecular Transport
X04653	Ly6a	1	Post-Translational Modification, Cancer, Cell Death
M23529	Crry	6	Cell Cycle, Gene Expression, Small Molecule Biochemistry
U19118	Atf3	4	Cancer, Cell Death, Cell Morphology
U89924	Ppp1r3c	10	Cell Signaling, Small Molecule Biochemistry, Cellular Development
X12761	Jun	6	Cell Cycle, Gene Expression, Small Molecule Biochemistry
M21856	Cyp2b10	5	Small Molecule Biochemistry, Cancer, Gastrointestinal Disease
Z16410	Btg1	1	Post-Translational Modification, Cancer, Cell Death
M96163	Plk2	1	Post-Translational Modification, Cancer, Cell Death
D38410	Tff3	8	Cell Death, Gastrointestinal Disease, Energy Production
Y19035	Acn5		
Y15003	St3ga15	12	Amino Acid Metabolism, Post-Translational Modification, Small Molecule Biochemistry
M28739	Tubb2a	5	Small Molecule Biochemistry, Cancer, Gastrointestinal Disease
L22472	Bax	5	Small Molecule Biochemistry, Cancer, Gastrointestinal Disease
U95826	Cong2	10	Cell Signaling, Small Molecule Biochemistry, Cellular Development
U78103	Eed	7	Cellular Development, Hematological System Development and Function
AF072240	Mbd1	5	Small Molecule Biochemistry, Cancer, Gastrointestinal Disease
AF028242	Crop	12	Amino Acid Metabolism, Post-Translational Modification, Small Molecule Biochemistry
J03482	Histh1c	1	Post-Translational Modification, Cancer, Cell Death
D55720	Kpna2	10	Cell Signaling, Small Molecule Biochemistry, Cellular Development
Z23077	Amd2	19	
U16959	Fkbp5	11	Cancer, Cell Morphology, Gene Expression
Z31689	Lipa	6	Cell Cycle, Gene Expression, Small Molecule Biochemistry
X02578	Amy2	11	Cancer, Cell Morphology, Gene Expression
D85904	Hspa4		
X07699	Ncl	1	Post-Translational Modification, Cancer, Cell Death
Z30939	Hist1h3d	9	Gene Expression, Lipid Metabolism, Molecular Transport
U92972	F2rl2	4	Cancer, Cell Death, Cell Morphology
AF079528	Ier5	9	Gene Expression, Lipid Metabolism, Molecular Transport
J04596	Cxcl1	7	Cellular Development, Hematological System Development and Function
X81627	Lcn2	8	Cell Death, Gastrointestinal Disease, Energy Production
M31131	Cdh2	5	Small Molecule Biochemistry, Cancer, Gastrointestinal Disease
L06864	Egfr	5	Small Molecule Biochemistry, Cancer, Gastrointestinal Disease
U19854	Ube2h	12	Amino Acid Metabolism, Post-Translational Modification, Small Molecule Biochemistry
D50086	Nrp1	4	Cancer, Cell Death, Cell Morphology
M12130	Polr2a	11	Cancer, Cell Morphology, Gene Expression
U48403	Gyk	10	Cell Signaling, Small Molecule Biochemistry, Cellular Development
U03715	Col18a1	4	Cancer, Cell Death, Cell Morphology
X92498	Foxl1	13	Lipid Metabolism, Small Molecule Biochemistry, Carbohydrate Metabolism
L33726	Fson1	8	Cell Death, Gastrointestinal Disease, Energy Production
U52925	F5	12	Amino Acid Metabolism, Post-Translational Modification, Small Molecule Biochemistry
D17546	Col18a1		
Y17267	Biro6	1	Post-Translational Modification, Cancer, Cell Death
U95146	Akap1	7	Cellular Development, Hematological System Development and Function
M15832	Col4a1	8	Cell Death, Gastrointestinal Disease, Energy Production
M31680	Ghr	3	Cellular Development, Organismal Survival, Cellular Growth and Proliferation
U88327	Socs2	4	Cancer, Cell Death, Cell Morphology
U14390	Aldh3a2	9	Gene Expression, Lipid Metabolism, Molecular Transport
D29016	Fdft1	4	Cancer, Cell Death, Cell Morphology
U60438	Saa2	6	Cell Cycle, Gene Expression, Small Molecule Biochemistry
AF058054	Slc16a7		

Table S1b. Genes and Top Functions in the Network

Accession No.	Symbol	Network No.	Functions
X03605	Saa3		
AF042730	Impa1	16	Carbohydrate Metabolism, Small Molecule Biochemistry, Lipid Metabolism
U24703	Reln	7	Cellular Development, Hematological System Development and Function
D86344	Pdcd4	6	Cell Cycle, Gene Expression, Small Molecule Biochemistry
M13521	Saa1	6	Cell Cycle, Gene Expression, Small Molecule Biochemistry
AB020203	Ak3	10	Cell Signaling, Small Molecule Biochemistry, Cellular Development
AF031127	Itpr2	2	Small Molecule Biochemistry, Drug Metabolism, Molecular Transport
X96767	Snrpc	7	Cellular Development, Hematological System Development and Function
AB029448	Maged1	1	Post-Translational Modification, Cancer, Cell Death
AF006602	Hdac5	7	Cellular Development, Hematological System Development and Function
X92665	Ube2e1	12	Amino Acid Metabolism, Post-Translational Modification, Small Molecule Biochemistry
L49507	Cong1	1	Post-Translational Modification, Cancer, Cell Death
AB017482	Aox1	4	Cancer, Cell Death, Cell Morphology
U09114	Glul	11	Cancer, Cell Morphology, Gene Expression
M73696	Slc20a1	7	Cellular Development, Hematological System Development and Function
X75926	Abca1	7	Cellular Development, Hematological System Development and Function
AF031170	Hsd3b6	3	Cellular Development, Organismal Survival, Cellular Growth and Proliferation
U94828	Rgs16	8	Cell Death, Gastrointestinal Disease, Energy Production
U53514	Guk1	14	Cell Signaling, Nucleic Acid Metabolism, Small Molecule Biochemistry
U19596	Cdkn2c	4	Cancer, Cell Death, Cell Morphology
U26176	Sstr4	5	Small Molecule Biochemistry, Cancer, Gastrointestinal Disease
U40494	Gfer	3	Cellular Development, Organismal Survival, Cellular Growth and Proliferation
U47737	Ly6e	9	Gene Expression, Lipid Metabolism, Molecular Transport
AJ010045	Net1	4	Cancer, Cell Death, Cell Morphology
D83745	Btg3	12	Amino Acid Metabolism, Post-Translational Modification, Small Molecule Biochemistry
U12135	Rad52	1	Post-Translational Modification, Cancer, Cell Death
M31585	Icam1	4	Cancer, Cell Death, Cell Morphology
BC008152	Casp1	1	Post-Translational Modification, Cancer, Cell Death
BC003822	Gstm1	1	Post-Translational Modification, Cancer, Cell Death
NM_019957	Dnase2b		
AF046889	Trdmt1	20	DNA Replication, Recombination, and Repair, Gene Expression
NM_011232	Rad1	10	Cell Signaling, Small Molecule Biochemistry, Cellular Development
AF073311	Tert	4	Cancer, Cell Death, Cell Morphology
NM_010829	Msh3	9	Gene Expression, Lipid Metabolism, Molecular Transport
U66058	Lig3	4	Cancer, Cell Death, Cell Morphology
J00423	Hprt1	9	Gene Expression, Lipid Metabolism, Molecular Transport
Y15570	Rad51B	26	Cell Cycle, DNA Replication, Recombination, and Repair, Cellular Assembly
M20157	Egr1	7	Cellular Development, Hematological System Development and Function
NM_007768	Crp	6	Cell Cycle, Gene Expression, Small Molecule Biochemistry
U95030	Alcam	2	Small Molecule Biochemistry, Drug Metabolism, Molecular Transport
D10061	Top1	1	Post-Translational Modification, Cancer, Cell Death
M63801	Gja1	3	Cellular Development, Organismal Survival, Cellular Growth and Proliferation
J04806	Spp1	5	Small Molecule Biochemistry, Cancer, Gastrointestinal Disease
X15202	Itgb1	8	Cell Death, Gastrointestinal Disease, Energy Production
X06115	Cdh1	5	Small Molecule Biochemistry, Cancer, Gastrointestinal Disease
AF102777	Pip5k3	9	Gene Expression, Lipid Metabolism, Molecular Transport
M86602	H2-L	11	Cancer, Cell Morphology, Gene Expression
M13872	Trp53	1	Post-Translational Modification, Cancer, Cell Death
BC007466	Dnm3a	7	Cellular Development, Hematological System Development and Function
NM_011623	Top2a	7	Cellular Development, Hematological System Development and Function
L35528	Sod2	6	Cell Cycle, Gene Expression, Small Molecule Biochemistry
X76143	Gstp1	5	Small Molecule Biochemistry, Cancer, Gastrointestinal Disease
NM_007812	Cyp2a5	2	Small Molecule Biochemistry, Drug Metabolism, Molecular Transport
M60796	Sod1	3	Cellular Development, Organismal Survival, Cellular Growth and Proliferation
BC008117	Tuba1b	10	Cell Signaling, Small Molecule Biochemistry, Cellular Development

Table S1c. Genes and Top Functions in the Network

Accession No.	Symbol	Network No.	Functions
NM_010863	Myo1b	2	Small Molecule Biochemistry, Drug Metabolism, Molecular Transport
NM_010786	Mdm2	1	Post-Translational Modification, Cancer, Cell Death
S69114	Tgfb2	5	Small Molecule Biochemistry, Cancer, Gastrointestinal Disease
BC034262	Casp2	1	Post-Translational Modification, Cancer, Cell Death
Y13086	Casp3	4	Cancer, Cell Death, Cell Morphology
BC002022	Casp6	1	Post-Translational Modification, Cancer, Cell Death
BC005428	Casp7	1	Post-Translational Modification, Cancer, Cell Death
BC049955	Casp8	1	Post-Translational Modification, Cancer, Cell Death
NM_015733	Casp9	1	Post-Translational Modification, Cancer, Cell Death
Y13089	Casp4	1	Post-Translational Modification, Cancer, Cell Death
BC028979	Casp12	4	Cancer, Cell Death, Cell Morphology
NM_009809	Casp14	1	Post-Translational Modification, Cancer, Cell Death
NM_007628	Ccn1	7	Cellular Development, Hematological System Development and Function
NM_009828	Ccn2	5	Small Molecule Biochemistry, Cancer, Gastrointestinal Disease
BC011478	Ccnb1	5	Small Molecule Biochemistry, Cancer, Gastrointestinal Disease
BC008247	Ccnb2	1	Post-Translational Modification, Cancer, Cell Death
NM_016746	Ccna1	4	Cancer, Cell Death, Cell Morphology
NM_007631	Cond1	7	Cellular Development, Hematological System Development and Function
NM_009829	Cond2	4	Cancer, Cell Death, Cell Morphology
BC005605	Cond3	2	Small Molecule Biochemistry, Drug Metabolism, Molecular Transport
NM_007633	Ccne1	4	Cancer, Cell Death, Cell Morphology
NM_009830	Ccne2	1	Post-Translational Modification, Cancer, Cell Death
BC037662	Conf	12	Amino Acid Metabolism, Post-Translational Modification, Small Molecule Biochemistry
BC027297	Ccnk	3	Cellular Development, Organismal Survival, Cellular Growth and Proliferation
BC007177	Ccnl1		
NM_031396	Ccnm1		
NM_033569	Ccnm2	13	Lipid Metabolism, Small Molecule Biochemistry, Carbohydrate Metabolism
NM_053186	Ccnm3		
NM_033570	Ccnm4		
NM_009833	Cont1	2	Small Molecule Biochemistry, Drug Metabolism, Molecular Transport
D87896	Gpx4	3	Cellular Development, Organismal Survival, Cellular Growth and Proliferation
NM_008160	Gpx1	3	Cellular Development, Organismal Survival, Cellular Growth and Proliferation
NM_030677	Gpx2	3	Cellular Development, Organismal Survival, Cellular Growth and Proliferation
NM_008161	Gpx3	3	Cellular Development, Organismal Survival, Cellular Growth and Proliferation
D87866	Ugt1a2	2	Small Molecule Biochemistry, Drug Metabolism, Molecular Transport
D38417	Ahr	2	Small Molecule Biochemistry, Drug Metabolism, Molecular Transport
AF501320	Gstm4	5	Small Molecule Biochemistry, Cancer, Gastrointestinal Disease
M73483	Gsta3	5	Small Molecule Biochemistry, Cancer, Gastrointestinal Disease
NM_013541	Gstp1		
AF280089	Chst7	13	Lipid Metabolism, Small Molecule Biochemistry, Carbohydrate Metabolism
XM_140570	GSTK1	3	Cellular Development, Organismal Survival, Cellular Growth and Proliferation
XM_137047	Gstm3	5	Small Molecule Biochemistry, Cancer, Gastrointestinal Disease
NM_008185	Gstt1	5	Small Molecule Biochemistry, Cancer, Gastrointestinal Disease
NM_011034	Prdx1	2	Small Molecule Biochemistry, Drug Metabolism, Molecular Transport
BC002034	Prdx2	2	Small Molecule Biochemistry, Drug Metabolism, Molecular Transport
NM_007452	Prdx3	2	Small Molecule Biochemistry, Drug Metabolism, Molecular Transport
NM_016764	Prdx4	2	Small Molecule Biochemistry, Drug Metabolism, Molecular Transport
BC008174	Prdx5	2	Small Molecule Biochemistry, Drug Metabolism, Molecular Transport
BC013489	Prdx6	2	Small Molecule Biochemistry, Drug Metabolism, Molecular Transport
NM_010234	Fos	3	Cellular Development, Organismal Survival, Cellular Growth and Proliferation
NM_020021	Mos	3	Cellular Development, Organismal Survival, Cellular Growth and Proliferation
NM_009044	Rel	6	Cell Cycle, Gene Expression, Small Molecule Biochemistry
NM_009271	Src	5	Small Molecule Biochemistry, Cancer, Gastrointestinal Disease
NM_010849	Myc	2	Small Molecule Biochemistry, Drug Metabolism, Molecular Transport
U15443	Ros1	10	Cell Signaling, Small Molecule Biochemistry, Cellular Development

Table S1d. Genes and Top Functions in the Network

Accession No.	Symbol	Network No.	Functions
NM_011057	Pdgfb	7	Cellular Development, Hematological System Development and Function
NM_007462	Apc	1	Post-Translational Modification, Cancer, Cell Death
AF176814	Zdhhc16		
BC011513	Myb	7	Cellular Development, Hematological System Development and Function
BC010202	Kras	4	Cancer, Cell Death, Cell Morphology
BC011083	Hras1	4	Cancer, Cell Death, Cell Morphology
BC003871	Rras2	8	Cell Death, Gastrointestinal Disease, Energy Production
NM_009074	Mst1r	3	Cellular Development, Organismal Survival, Cellular Growth and Proliferation
NM_029780	Raf1	8	Cell Death, Gastrointestinal Disease, Energy Production
NM_009703	Araf	8	Cell Death, Gastrointestinal Disease, Energy Production
U58203	Arhgef1	6	Cell Cycle, Gene Expression, Small Molecule Biochemistry
BC052739	Vav3	6	Cell Cycle, Gene Expression, Small Molecule Biochemistry
BC020487	Vav1	6	Cell Cycle, Gene Expression, Small Molecule Biochemistry
BC052467	Kit	7	Cellular Development, Hematological System Development and Function
BC050914	Ax	6	Cell Cycle, Gene Expression, Small Molecule Biochemistry
BC024638	Tfg	11	Cancer, Cell Morphology, Gene Expression
NM_009652	Akt1	8	Cell Death, Gastrointestinal Disease, Energy Production
BC020990	Pml	1	Post-Translational Modification, Cancer, Cell Death
NM_020572	Aurkc	12	Amino Acid Metabolism, Post-Translational Modification, Small Molecule Biochemistry
NM_010937	Nras	8	Cell Death, Gastrointestinal Disease, Energy Production
NM_010005	Cyp2d10	2	Small Molecule Biochemistry, Drug Metabolism, Molecular Transport
NM_010006	Cyp2d9	9	Gene Expression, Lipid Metabolism, Molecular Transport
NM_007818	Cyp3a11	5	Small Molecule Biochemistry, Cancer, Gastrointestinal Disease
NM_007815	Cyp2c29	5	Small Molecule Biochemistry, Cancer, Gastrointestinal Disease
X78446	Cyp1b1	2	Small Molecule Biochemistry, Drug Metabolism, Molecular Transport
K02589	Cyp1a2	2	Small Molecule Biochemistry, Drug Metabolism, Molecular Transport
K02588	Cyp1a1	2	Small Molecule Biochemistry, Drug Metabolism, Molecular Transport
L06463	Cyp2a12	2	Small Molecule Biochemistry, Drug Metabolism, Molecular Transport
AB018421	Cyp4a10	13	Lipid Metabolism, Small Molecule Biochemistry, Carbohydrate Metabolism
L11650	Cyp2e1	8	Cell Death, Gastrointestinal Disease, Energy Production
NM_021507	Sqrdl	2	Small Molecule Biochemistry, Drug Metabolism, Molecular Transport
NM_019387	Hgs	5	Small Molecule Biochemistry, Cancer, Gastrointestinal Disease
U35885	Nat1	12	Amino Acid Metabolism, Post-Translational Modification, Small Molecule Biochemistry
U35887	Nat2	9	Gene Expression, Lipid Metabolism, Molecular Transport
AF107296	Bub1b	1	Post-Translational Modification, Cancer, Cell Death
AF076156	Comt	1	Post-Translational Modification, Cancer, Cell Death
AF406642	Abcc10		
AB028737	Abcc6	22	Cell Signaling, Genetic Disorder, Nucleic Acid Metabolism
BC039699	Dpyd	25	Cancer, Drug Metabolism, Genetic Disorder
BC004686	Hprt1		
X62932	Xdh	10	Cell Signaling, Small Molecule Biochemistry, Cellular Development
BC021598	Tpmt	11	Cancer, Cell Morphology, Gene Expression
NM_013483	Btn1a1	10	Cell Signaling, Small Molecule Biochemistry, Cellular Development
AY007717	Mtyh	10	Cell Signaling, Small Molecule Biochemistry, Cellular Development
BC011087	Sucg1	13	Lipid Metabolism, Small Molecule Biochemistry, Carbohydrate Metabolism
BC052831	Mogat2	13	Lipid Metabolism, Small Molecule Biochemistry, Carbohydrate Metabolism
BC019999	Aadac	23	Lipid Metabolism, Molecular Transport, Small Molecule Biochemistry
BC028907	Es1	8	Cell Death, Gastrointestinal Disease, Energy Production
BC006891	Uch5	11	Cancer, Cell Morphology, Gene Expression
NM_015801	Pnpla6	11	Cancer, Cell Morphology, Gene Expression
BC004084	Gnpda2	21	
BC053526	Rpia	17	
X53333	Tpi1	9	Gene Expression, Lipid Metabolism, Molecular Transport
BC009151	Pdia5	10	Cell Signaling, Small Molecule Biochemistry, Cellular Development
BC021655	Akr1b3	6	Cell Cycle, Gene Expression, Small Molecule Biochemistry

Table S1e. Genes and Top Functions in the Network

Accession No.	Symbol	Network No.	Functions
BC021607	Akr1c20		
BC013531	Akr1c21	13	Lipid Metabolism, Small Molecule Biochemistry, Carbohydrate Metabolism
BC039926	Akr1a4	6	Cell Cycle, Gene Expression, Small Molecule Biochemistry
BC034259	Akr1c18	9	Gene Expression, Lipid Metabolism, Molecular Transport
BC021937	Akr1c13	24	Cellular Development, Hematological System Development and Function
BC018333	Akr1d1	15	Lipid Metabolism, Small Molecule Biochemistry, Endocrine System Development
BC012692	Akr1e1		
BC012643	Akr1c12		
BC005789	Akr1b8	6	Cell Cycle, Gene Expression, Small Molecule Biochemistry
BC045194	Ephx1	9	Gene Expression, Lipid Metabolism, Molecular Transport
AF173829	Pnpla6		
BC015087	Ephx2	13	Lipid Metabolism, Small Molecule Biochemistry, Carbohydrate Metabolism
NM_007482	Arg1	2	Small Molecule Biochemistry, Drug Metabolism, Molecular Transport
BC018202	Gusb	4	Cancer, Cell Death, Cell Morphology
AY273811	Acaa1a	11	Cancer, Cell Morphology, Gene Expression
BC019882	Acaa1b		
BC004579	Nqo1	3	Cellular Development, Organismal Survival, Cellular Growth and Proliferation
BC010757	Hmox1	8	Cell Death, Gastrointestinal Disease, Energy Production
BC002011	Hmox2	2	Small Molecule Biochemistry, Drug Metabolism, Molecular Transport
X15313	Mpo	4	Cancer, Cell Death, Cell Morphology
NM_011998	Chst4	12	Amino Acid Metabolism, Post-Translational Modification, Small Molecule Biochemistry
NM_175140	Chst8	13	Lipid Metabolism, Small Molecule Biochemistry, Carbohydrate Metabolism
NM_009419	Tpst2	18	Amino Acid Metabolism, Post-Translational Modification, Small Molecule Biochemistry
NM_021528	Chst12	13	Lipid Metabolism, Small Molecule Biochemistry, Carbohydrate Metabolism
NM_008303	Hspe1	8	Cell Death, Gastrointestinal Disease, Energy Production
M35021	Hspa1b	3	Cellular Development, Organismal Survival, Cellular Growth and Proliferation
J04633	HSP90AA1	3	Cellular Development, Organismal Survival, Cellular Growth and Proliferation
D49482	Hspa4l	3	Cellular Development, Organismal Survival, Cellular Growth and Proliferation
AB028272	Dnajb1	3	Cellular Development, Organismal Survival, Cellular Growth and Proliferation
NM_010477	Hspd1	8	Cell Death, Gastrointestinal Disease, Energy Production
U03560	Hspb1	1	Post-Translational Modification, Cancer, Cell Death
U27129	Hspa8	3	Cellular Development, Organismal Survival, Cellular Growth and Proliferation
NM_011939	Hsf4	3	Cellular Development, Organismal Survival, Cellular Growth and Proliferation
U27830	Stip1	3	Cellular Development, Organismal Survival, Cellular Growth and Proliferation
NM_016700	Mapk8	11	Cancer, Cell Morphology, Gene Expression
NM_009157	Map2k4	3	Cellular Development, Organismal Survival, Cellular Growth and Proliferation
NM_011944	Map2k7	3	Cellular Development, Organismal Survival, Cellular Growth and Proliferation
NM_008928	Map2k3	7	Cellular Development, Hematological System Development and Function
NM_011951	Mapk14	5	Small Molecule Biochemistry, Cancer, Gastrointestinal Disease
NM_008580	Map3k5	8	Cell Death, Gastrointestinal Disease, Energy Production
NM_011547	Tcfap2a	1	Post-Translational Modification, Cancer, Cell Death
NM_006689	NfkB1	6	Cell Cycle, Gene Expression, Small Molecule Biochemistry
NM_009741	Bcl2	4	Cancer, Cell Death, Cell Morphology
M82866	Ptgs2	7	Cellular Development, Hematological System Development and Function
NM_010431	Hif1a	4	Cancer, Cell Death, Cell Morphology
NM_011677	Ung	10	Cell Signaling, Small Molecule Biochemistry, Cellular Development
NM_008987	Pb3	6	Cell Cycle, Gene Expression, Small Molecule Biochemistry
BC043063	Nfe2l1	6	Cell Cycle, Gene Expression, Small Molecule Biochemistry
NM_009906	Tpp1	5	Small Molecule Biochemistry, Cancer, Gastrointestinal Disease
NM_010893	Neu1	9	Gene Expression, Lipid Metabolism, Molecular Transport
NM_010128	Emp1	2	Small Molecule Biochemistry, Drug Metabolism, Molecular Transport
NM_007393	Actb	4	Cancer, Cell Death, Cell Morphology