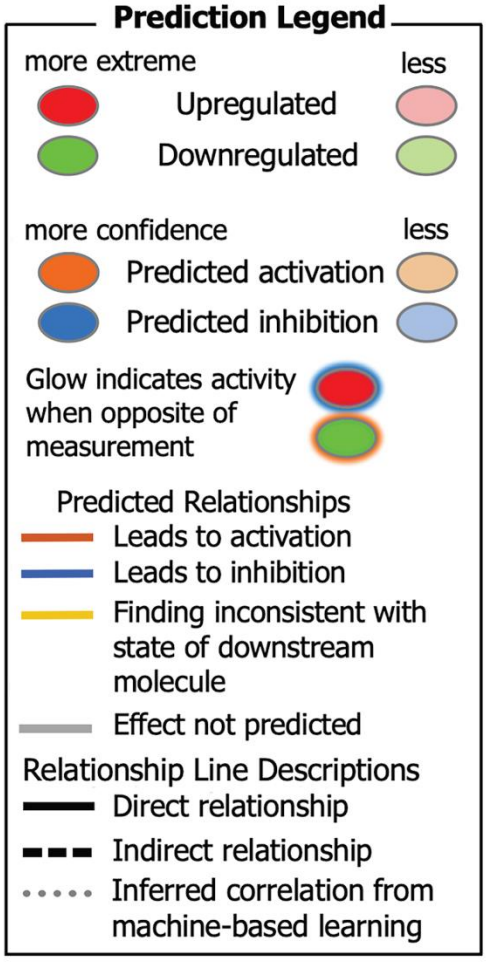
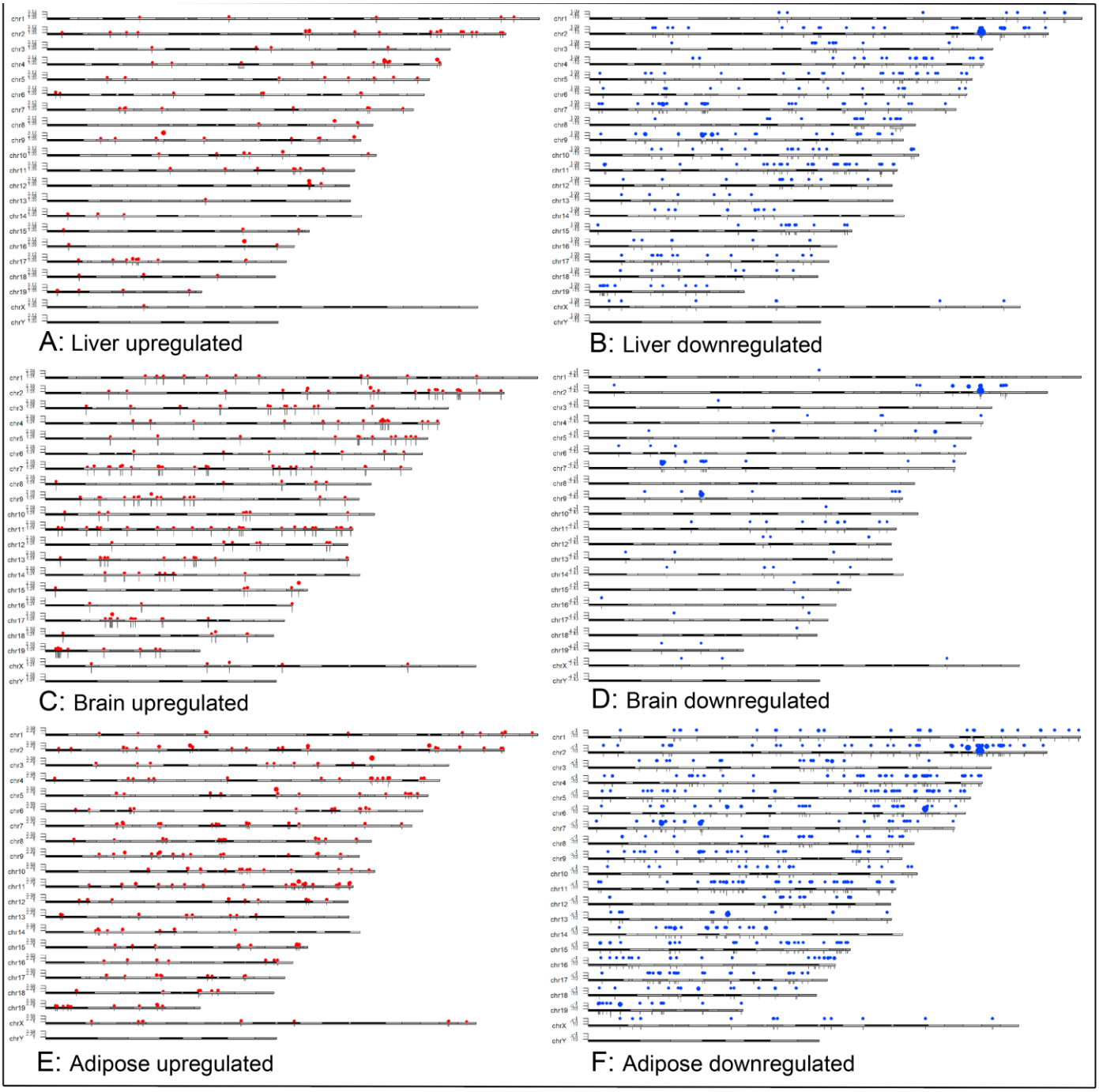
(A)



(B)



Supplementary Figure S1: (A) The color scheme indicates the value of the differential gene expressions. **(B)** Shapes indicate the type and function of the DEG products.



Supplemental Figure S2: Karyoplot of DEGs in the 3 organ systems: (A) Liver upregulated gene distribution; (B) Liver downregulated gene distribution; (C) Brain upregulated gene distribution; (D) Brain downregulated gene distribution; (E) Adipose upregulated gene distribution; (F) Adipose downregulated gene distribution. The figure indicates the geographical location of the perturbed genes on each chromosome. The X-axis indicates the chromosomal location. The size of the dot on the Y-axis corresponds to the log fold change of the gene determined experimentally. The general pattern across the 3 organ systems shows the gene expression perturbation to be relatively organ-specific and widespread across all chromosomes with the exception of the Y-chromosome.

Supplementary Table S1: Fatty acid concentration data (µg/ml)

Sample Name	Adipose-186	Adipose-187	Adipose-189	Adipose-190	Adipose-191	Adipose-194	Adipose-196	Adipose-197	Adipose-198	Adipose-199
Dodecanoic acid	2.62	2.19	2.77	2.75	3.41		2.50	3.49		2.94
Myristic acid	21.02	17.52	24.19	25.38	22.94	13.52	13.67	16.14	11.46	22.82
Pentadecanoic acid	85.48		117.26	106.53	82.58	60.61	66.39	81.87	53.58	95.04
Palmitoleic acid	3.06		3.77	2.46	2.37	2.33	1.75	2.74		2.84
Palmitic acid	1149.12	1346.09	1246.80	1125.24	1067.61	1110.33	1120.78	1218.40	963.45	1553.07
Heptadecenoic acid		8.26								
Heptadecanoic acid	1.27	1.47	1.33	1.41	1.14	0.76	0.92	1.02	0.78	1.99
Octadecatetraenoic acid (Stearidonic acid)										
a-Linolenic acid	5.56	7.23	4.95	4.41	5.92	6.19		5.24	4.83	5.90
g-Linolenic acid	22.95	18.84	27.95	24.71	31.77	38.24		23.66		28.52
Linoleic acid	125.91	112.04	124.16	101.52	93.51	142.13	122.78	107.96	102.09	112.49
Oleic acid	50.90	44.99	50.20	36.86	34.98	48.13	37.17	43.75	43.43	54.11
Stearic acid	148.16	168.54	156.47	140.80	95.95	128.80	139.82	150.48	107.05	289.85
Eicosapentaenoic acid	1.17	1.68	1.36	1.39	1.31	1.58	1.51	1.16	1.25	0.84
Arachidonic acid	8.52	8.69	9.66	7.49	2.47	12.03	10.26	7.59	3.33	7.79
Mead acid										
Dihomo-g-linolenic acid										
Eicosadienoic acid	2.08		1.93				2.47			
Eicosenoic acid	2.78	2.54	3.00		2.10	2.51	1.64	2.04	1.93	2.86
Arachidic acid										0.41
Docosahexaenoic acid	8.90		13.98	9.91	5.40	17.08	15.55	12.13		11.04
Docosapentaenoic acid (n-3)										
Docosapentaenoic acid (n-6)										
Docosatetraenoic acid										
Docosatrienoic acid										
Docosadienoic acid										
Docosenoic acid										
Docosanoic acid (Behenic acid)										
Nervonic acid										
Lignoceric acid	7.99	9.97	9.18	8.16	8.73	8.29	8.47	9.27	8.88	9.13
Hexacosanoic acid	0.94	1.13	0.93	0.92	0.95	0.92	0.94	1.02	1.04	1.03
	Brain-186	**Brain-187**	**Brain-189**	**Brain-190**	**Brain-191**	**Brain-194**	**Brain-196**	**Brain-197**	**Brain-198**	**Brain-199**
Dodecanoic acid	3.60	1.72	4.12	2.95	2.42	2.49	3.58	3.82	3.37	3.16
Myristic acid	34.14	24.10	33.77	28.09	31.13	26.66	22.00	24.64	35.33	31.87
Pentadecanoic acid	130.80	133.43	201.83	138.26	185.88	121.63	102.25	119.98	267.43	228.04
Palmitoleic acid	6.83	10.17	13.31	10.89	12.57	9.68	8.77	9.68	15.71	16.76
Palmitic acid	10362.41	10609.92	13405.59	10059.27	25017.87	7805.85	10490.33	11065.71	8151.77	14155.73
Heptadecenoic acid	9.17	15.52	22.76	17.21	21.66	14.60	11.12	13.32	29.86	27.96
Heptadecanoic acid	1.01	0.86	1.07	0.76	1.12	0.86	0.62	0.64	1.24	0.88
Octadecatetraenoic acid (Stearidonic acid)										
a-Linolenic acid			5.77		2.54				3.20	
g-Linolenic acid			15.03	27.54						
Linoleic acid	59.64	69.89	88.81	84.61	66.58	84.68	69.73	58.74	78.44	94.74
Oleic acid	933.97	974.15	1145.16	1189.27	1178.10	1438.32	1388.44	1163.57	1184.71	1828.51
Stearic acid	833.04	728.55	758.29	779.90	767.63	871.40	931.19	944.04	893.59	778.44
Eicosapentaenoic acid	0.65	1.09	0.93	1.06	0.79	0.99	0.83	0.75	0.89	0.93
Arachidonic acid	237.74	268.86	330.94	320.85	275.15	372.00	316.54	312.04	338.42	423.89
Mead acid	2.29	2.72	3.43	3.24	2.81	3.25	2.81	2.32	2.95	3.05
Dihomo-g-linolenic acid	1.03	1.25			1.16	1.47	1.22	1.14	1.55	1.58
Eicosadienoic acid	23.10	25.96	39.30	35.66	25.22	42.41	35.40	21.77	29.03	31.64
Eicosenoic acid	146.12	141.85	240.04	215.89	170.36	275.21	274.22	165.91	167.89	215.64
Arachidic acid	1.05	1.03	1.48	1.38	1.09	1.67	1.51	1.11	1.29	1.34
Docosahexaenoic acid	1319.87	1476.67	1657.11	1696.73	1503.57	1775.30	1472.68	2331.50	1654.62	15037.17
Docosapentaenoic acid (n-3)	46.59	55.10	65.18	56.37	59.11	70.03	59.73	54.44	69.97	78.54
Docosapentaenoic acid (n-6)										
Docosatetraenoic acid	92.40	93.47	136.42	127.73	106.41	145.23	121.82	113.53	130.17	133.66
Docosatrienoic acid	10.29	9.47	14.84	13.06	10.96	15.27	13.12	11.87	14.19	13.57
Docosadienoic acid	8.24	9.05	16.76	15.34	11.67	17.44	14.48	9.27	16.68	14.10
Docosenoic acid	27.30	26.74	44.69	38.15	32.59	48.87	48.94	32.67	34.16	40.11
Docosanoic acid (Behenic acid)	2.66	2.79	4.90	3.76	3.22	4.51	4.49	3.33	3.24	3.76
Nervonic acid	14.29	14.22	27.31	21.35	19.68	30.14	29.35	16.94	18.46	21.21
Lignoceric acid	18.32	19.07	28.71	23.72	23.35	29.63	30.58	20.82	24.80	25.41
Hexacosanoic acid	0.98	1.15	1.28	1.09	1.21	1.27	1.23	1.14	1.47	1.29
	Liver-186	**Liver-187**	**Liver-189**	**Liver-190**	**Liver-191**	**Liver-194**	**Liver-196**	**Liver-197**	**Liver-198**	**Liver-199**
Dodecanoic acid	3.39	4.90		3.14	3.41	3.59		3.39		3.11
Myristic acid	14.24	18.24	17.82	17.61	15.11	30.77	13.94	14.74	29.93	17.03
Pentadecanoic acid	80.11	112.38	117.36	107.24	78.51	158.69	87.51	86.55	148.31	93.17
Palmitoleic acid	4.40	5.29	7.87	8.63	9.99	5.72	6.73	6.17	6.60	5.46
Palmitic acid	7787.85	8533.11	6911.46	6297.65	9688.65	8005.33	9877.54	8741.30	8784.47	8529.28
Heptadecenoic acid		8.31	9.58	10.18	7.45	14.09	9.88	9.26	9.06	
Heptadecanoic acid	0.89	1.19		1.20	0.92	1.76	0.92		1.98	0.81
Octadecatetraenoic acid (Stearidonic acid)										
a-Linolenic acid	35.46	39.51	42.96	35.68	39.90	43.99	34.37	39.07	34.68	37.91
g-Linolenic acid	179.50	216.44	236.39	194.03	202.07	226.55	180.83	213.68	177.09	199.74
Linoleic acid	853.49	1163.69	1279.84	946.86	1078.11	1093.06	1150.13	1268.21	906.75	1071.78
Oleic acid	164.68	184.13	260.17	265.71	214.68	181.01	226.08	221.46	188.75	176.08
Stearic acid	577.16	589.62	657.63	666.80	510.53	641.88	573.92	628.41	678.75	553.44
Eicosapentaenoic acid	1.74	2.45	1.81	1.53	2.11	1.98	1.80	2.12	1.56	2.20
Arachidonic acid	253.57	397.36	354.83	307.87	298.71	371.10	393.98	449.28	306.36	381.30
Mead acid	4.77	7.74	8.04	6.32	6.83	5.66	6.47	7.07	4.32	5.67
Dihomo-g-linolenic acid										
Eicosadienoic acid	56.29	71.76	62.95	59.13	33.52	60.58	62.28	82.27	46.60	66.16
Eicosenoic acid	14.04	15.70	19.41	22.00	13.49	14.90	18.28	19.39	14.31	15.43
Arachidic acid	1.50	1.39	1.68	1.78	1.38	1.52	1.10	1.31	1.30	1.31
Docosahexaenoic acid	671.77	974.13	959.57	772.88	723.00	982.30	1041.17	1034.07	753.62	923.76
Docosapentaenoic acid (n-3)	19.63	26.63	26.81	20.56		27.27	27.13	30.36	20.61	28.03
Docosapentaenoic acid (n-6)	20.84	27.41	46.20	28.93	55.50	31.14	36.03	37.04	22.71	28.38
Docosatetraenoic acid	5.01	7.71	8.21	7.13	7.45	6.87	9.63	8.66	6.29	7.51
Docosatrienoic acid								1.28		
Docosadienoic acid				4.05	3.00		3.06		4.21	
Docosenoic acid	2.62	2.66	3.17	4.21	3.08	3.08	2.96	3.01	2.60	3.05
Docosanoic acid (Behenic acid)			0.82	1.01	0.84					
Nervonic acid										
Lignoceric acid	9.02	9.80	8.96	10.62	9.97	10.44	8.59	8.39	9.76	8.74
Hexacosanoic acid	1.00	1.05	0.95	1.10	1.05	1.18	1.04	0.94	0.97	1.06

Supplementary Table S2.

Supplementary Table S2A - Liver. The -log (p-value) and z-score of the top 10 statistically significant (-log (p-value) > 1.3) and differentially regulated canonical pathways in liver tissue of *Acss2*$^{-/-}$ compared to wild-type mice.

Canonical Pathways	-log(p-value)	z-score
eNOS Signaling	2.91	0.816
Aldosterone Signaling in Epithelial Cells	2.87	-1
Ferroptosis Signaling Pathway	2.49	0.707
LXR/RXR Activation	2.44	1.633
Nitric Oxide Signaling in the Cardiovascular System	1.82	-0.447
NER (Nucleotide Excision Repair, Enhanced Pathway)	1.64	-0.447
Kinetochore Metaphase Signaling Pathway	1.58	-0.447
Xenobiotic Metabolism PXR Signaling Pathway	1.55	1.134
Role of MAPK Signaling in Promoting the Pathogenesis of Influenza	1.51	-2
AMPK Signaling	1.36	0.447

Supplementary Table S2B - Brain. The -log (p-value) and z-score of the top 10 statistically significant (-log (p-value) > 1.3) and differentially regulated canonical pathways in brain tissue of *ACSS2*$^{-/-}$ compared to wild-type mice.

Canonical Pathways	-log(p-value)	z-score
Sirtuin Signaling Pathway	4.95	1.414
Oxidative Phosphorylation	4.33	-2.828
3-phosphoinositide Biosynthesis	2.62	2.646
PI3K/AKT Signaling	2.2	-2.646
Superpathway of Inositol Phosphate Compounds	2.18	2.646
BEX2 Signaling Pathway	1.93	-2
Cyclins and Cell Cycle Regulation	1.91	-2

Fcγ Receptor-mediated Phagocytosis in Macrophages and Monocytes	1.66	2
Neuropathic Pain Signaling In Dorsal Horn Neurons	1.59	2
D-myo-inositol (1,4,5,6)-Tetrakisphosphate Biosynthesis	1.31	2

Supplementary Table S2C - Adipose. The -log (p-value) and z-score of the top 10 statistically significant (-log (p-value) > 1.3) and differentially regulated canonical pathways in adipose tissue of *Acss2*$^{-/-}$ compared to wild-type mice.

Canonical Pathways	**-log(p-value)**	**z-score**
Sirtuin Signaling Pathway	4.61	-2.828
Oxidative Phosphorylation	3.39	3.162
Glycolysis I	3.03	2.449
Toll-like Receptor Signaling	2.91	-1.633
iNOS Signaling	2.68	-2.236
Estrogen Biosynthesis	2.43	-1.633
LPS/IL-1 Mediated Inhibition of RXR Function	2.36	-2
Bupropion Degradation	2.26	-2
Spliceosomal Cycle	1.87	-2.236
Regulation Of The Epithelial Mesenchymal Transition By Growth Factors Pathway	1.84	-1.897
Acetone Degradation I (to Methylglyoxal)	1.44	-2

Supplementary Table S3.

Supplementary Table S3A - Liver. Expression of genes associated with disease and cellular functions, activation of "anemia" and "organ degeneration" in liver tissue of *Acss2*$^{-/-}$ compared to wild-type mice.

Symbol	Expr Log Ratio
C9	1.14
GBA	-1.16
GPX4	-1.16
MFGE8	-1.17
PIGA	-1.12
PITPNM2	-1.14
POLR3H	-1.09
REEP6	1.2
SLC25A38	-1.19
ZFP36L1	-1.47

Supplementary Table S3B - Liver. Expression of genes associated with disease and cellular functions, activation of "growth failure" in liver tissue of *Acss2*$^{-/-}$ compared to wild-type mice.

Symbol	Expr Log Ratio
BNIP3L	-1.21
FLT1	-1.12
GCK	-1.89
ITPR1	-1.2
SHMT2	1.12
TFRC	-1.45

Supplementary Table S3C - Liver. Expression of genes associated with disease and cellular functions, activation of "organismal death" in liver tissue of *Acss2*$^{-/-}$ compared to wild-type mice.

Symbol	Expr Log Ratio
BAG1	-1.22
BNIP3L	-1.21
FDXR	-1.08
HSD17B7	-1.34
ITPR1	-1.2
PRKACA	1.1
Rpl29 (includes others)	-1.54
STIP1	-1.21
TBX3	1.17

Supplementary Table S3D – Liver: Expression of genes associated with disease and cellular functions, inhibition of "infection by RNA virus" in liver tissue of *Acss2*$^{-/-}$ compared to wild-type mice.

Symbol	Expr Log Ratio
ATG5	1.09
ATMIN	-1.09
FGD6	-1.16
SAMD9L	1.41
WASF1	-1.11

Supplementary Table S4.

Supplementary Table S4A – Liver: Expression of genes associated with **Network 1**: "amino acid metabolism, carbohydrate metabolism, small molecule biochemistry", in liver tissue of *Acss2*$^{-/-}$ compared to wild-type mice.

Symbol	Expr Log Ratio
ANKRD54	-1.08
Apol9a/Apol9b	1.24
ATP1B3	-1.13
AVEN	-1.1
BICD2	-1.14
COMMD9	-1.09
DMWD	-1.12
DYNLRB1	-1.32
EGLN3	-1.09
EIF6	-1.18
FADS2	-1.22
FOXRED1	-1.12
GALK1	-1.33
GLDC	1.16
GPN2	-1.59
IFT52	-1.3
JOSD2	-1.24
KLHDC10	-1.22
MSH6	-1.11
NDUFA8	1.1
NUCB1	-1.15
NUDT5	1.11

PALS2	1.13
PPAT	-1.17
SCAND1	1.61
SDE2	-1.19
SEL1L	-1.11
SHMT2	1.12
TCF25	-1.23
TKT	1.07
TRIP6	-1.17
UBE2Q1	-1.11
USH2A	-1.53

Supplementary Table S4B – Liver: Expression of genes associated with **Network 2**: "cellular development, cellular growth and proliferation, connective tissue development and function", in liver tissue of *Acss2*$^{-/-}$ compared to wild-type mice.

Symbol	**Expr Log Ratio**
ARL1	-1.15
ASPSCR1	-1.22
BRMS1	-1.12
CDK5RAP3	-1.17
DAP3	1.13
DDX1	-1.15
Fus	1.19
G3BP2	1.18
GRB7	-1.31
HABP4	-1.09
HPN	1.22

ILVBL	-1.2
ING4	-1.11
LZTR1	-1.09
MRPS7	-1.31
NUAK2	-1.31
OLIG1	1.16
PLEKHG3	-1.12
POLD2	-1.1
PPP6C	-1.22
PXMP2	1.25
RBM42	-1.12
RIOK3	-1.34
SRPRA	-1.54
TAX1BP3	-1.19
TIMM10	-1.15
TMED4	-1.14
TRIM8	-1.15
TSPAN33	-1.13
UBXN6	-1.18
WFDC2	-2.02
YOD1	1.14

Supplementary Table S5.

Supplementary Table S5A – Brain: Expression of genes associated with disease and cellular functions, activated "cell viability of tumor cell lines" and "size of body" in brain tissue of *Acss2*$^{-/-}$ compared to wild-type mice.

Symbol	Expr Log Ratio
ARRB1	1.11
DLX1	1.09
IGFBP4	1.24
KCNC1	1.1
KLF6	1.16
LMNA	1.13
PER2	-1.15
RAB3A	1.01
RAB3D	1.06
THRSP	1.09

Supplementary Table S5B – Brain: Expression of genes associated with disease and cellular functions, activation of "DNA endogenous promoter" in brain tissue of *Acss2*$^{-/-}$ compared to wild-type mice.

Symbol	Expr Log Ratio
CCND1	-1.3
DEK	1.12
DLX1	1.09
LDB2	1.22
NDN	-1.1

Supplementary Table S5C – Brain: Expression of genes associated with disease and cellular functions, activation of "cell viability" and "organization of cytoskeleton" in brain tissue of *Acss2*$^{-/-}$ compared to wild-type mice.

Symbol	Expr Log Ratio
APP	-1.05
ARRB1	1.11
CCND1	-1.3
DCX	1.12
DUSP1	2.01
GNAO1	1.23
HSPB6	1.36
KLC1	1.15
NTRK2	1.19
PER2	-1.15
PIK3R2	1.05
POLR1D	1.1
RAB3A	1.01
RPS6KL1	1.12
SORL1	1.74
TRAF3	-1.23
WTIP	1.06

Supplementary Table S5D – Brain: Expression of genes associated with disease and cellular functions, "inhibition of organismal death" in brain tissue of *Acss2*$^{-/-}$ compared to wild-type mice.

Symbol	Expr Log Ratio
DLX1	1.09
KCNC1	1.1
NTRK2	1.19
OTX1	1.09

Supplementary Table S6.

Supplementary Table S6A – Brain: Expression of genes associated with **Network 1**: "connective tissue disorders, developmental disorder, hereditary disorder", in brain tissue of *Acss2*$^{-/-}$ compared to wild-type mice.

Symbol	Expr Log Ratio
ACTR3	1.17
ACTR3B	1.07
AIP	1.15
CSTF1	1.22
DCPS	1.11
DEK	1.12
EIF1B	-1.06
FRMD6	1.26
GALT	1.22
HBS1L	1.08
HSPB6	1.36
IDH3B	-1.05
KCNMA1	1.2
KEAP1	1.1
KLF6	1.16
NOSIP	-1.24
NUDC	1.16
NXT2	-1.06
PIH1D1	1.09
POLL	1.06
POLR1C	1.11
POLR1D	1.1

PRDX1	-1.04
SRPK1	1.15
STK4	1.35
TRIP12	1.11
UBE3A	1.1
UBTD2	1.15

Supplementary Table S6B – Brain: Expression of genes associated with **Network 2:** "metabolic disease, neurological disease, organismal injury and abnormalities", in brain tissue of *Acss2*$^{-/-}$ compared to wild-type mice.

Symbol	**Expr Log Ratio**
ATP5F1C	-1.05
ATP6V0A2	1.1
Cd59a	1.61
COX10	-1.07
CTDSPL	1.09
ELMO2	-1.23
GHITM	1.15
GLRX2	1.12
IGFBP7	1.16
ISCU	-1.03
LARS2	-1.23
MRPS12	-1.78
MRPS17	-1.34
NDUFA12	-1.13
NDUFA4	-1.06
NDUFA5	-1.04

NDUFA7	-1.08
NDUFB8	-1.04
NEO1	1.14
PPOX	1.05
PRCP	1.08
SLC39A10	1.1
SNX21	1.16
STT3A	-1.13
TBRG4	1.07
VARS2	1.09
WARS2	1.17

Supplementary Table S7.

Supplementary Table S7A – Adipose: Expression of genes associated with disease and cellular functions, "inhibition of vasculogenesis" in adipose tissue of *Acss2*$^{-/-}$ compared to wild-type mice.

Symbol	Expr Log Ratio
ADIPOQ	1.08
CAV1	1
IL33	-1.24
JUN	-1.4
PPARG	-1.22
PPARGC1B	1.38
RHOB	-1.42
TKT	1.54
VLDLR	1.29

Supplementary Table S7B – Adipose: Expression of genes associated with disease and cellular functions, inhibited "infection of embryonic cell lines, infection of epithelial cell lines, and infection of kidney cell lines" in adipose tissue of *Acss2*$^{-/-}$ compared to wild-type mice.

Symbol	Expr Log Ratio
BMP1	-1.15
GANAB	-1.19
IRF3	-1.14
REPIN1	-1.2
RHOB	-1.42
RNPS1	-1.23
SF3A1	-1.25
TRAFD1	-1.2
ZYX	-1.38

Supplementary Table S7C – Adipose: Expression of genes associated with disease and cellular functions, "activation of glycolysis" in adipose tissue of *Acss2*$^{-/-}$ compared to wild-type mice. (**Note:** see also Figure 1 in main text).

Symbol	Expr Log Ratio
ADIPOQ	1.08
ALDOA	1.45
CAV1	1
ENO1	1.39
GAPDH	1.22
GPD1	1.7
GSTP1	1.18
IDH3A	1.19
MAPKAPK2	-1.22
MLXIPL	1.19
PDHA1	1.25
PFKL	1.4
PFKP	1.26
PPARG	-1.22
PPARGC1B	1.38
SLC2A3	-1.68
TPI1	1.19

Supplementary Table S8.

Supplementary Table S8A – Adipose: Expression of genes associated with **Network 1:** "cellular assembly and organization, RNA damage and repair, RNA post-transcriptional modification", in adipose tissue of *Acss2*$^{-/-}$ compared to wild-type mice.

Symbol	Expr Log Ratio
ANLN	-1.47
BRD2	-1.24
CAMK2N1	-1.16
CDC42EP3	1.22
CDC5L	-1.29
CHD4	-1.21
CNIH4	1.13
CRYZL1	-1.23
DDX17	-1.67
DDX21	-1.21
DHX15	-1.16
DIDO1	-1.32
EEF1A1	-1
EFTUD2	-1.13
HDGF	1.07
HEXIM1	-1.32
KANK1	-1.26
MECR	1.24
MRPL12	1.2
NOL6	-1.29
PCBP1	-1.21

PIP4K2B	-1.22
PTPN6	-1.14
RNPS1	-1.23
RPL23	1.22
RSL1D1	-1.21
SLC25A10	1.78
SLC25A5	1.15
SLC4A1AP	-1.23
SRPK1	-1.24
SYF2	-1.23
THUMPD1	-1.27
TOP1	-1.12
UPF2	-1.33
ZCCHC8	-1.14

Supplementary Table S8B – Adipose: Expression of genes associated with **Network 2**: "connective tissue disorders, developmental disorder, hereditary disorder", in adipose tissue of *Acss2*$^{-/-}$ compared to wild-type mice.

Symbol	**Expr Log Ratio**
ACVR1C	1.6
ATP6AP2	-1.13
ATP6V0A2	1.21
ATP6V0E2	-1.26
ATP6V1A	1.41
BICD2	-1.23
BSDC1	-1.81

C1orf198	-1.3
CHORDC1	-1.31
CORO1A	-1.24
CORO1C	-1.31
FHL1	-1.28
GMFG	1.25
IFT172	-1.22
IFT20	1.12
IFT52	-1.33
IFT81	-1.15
JDP2	-1.12
LRRC41	-1.15
LUZP1	1.47
MYADM	-1.26
TMEM63B	1.39
USP16	-1.14
USP2	-1.79
USP22	-1.28
USP39	-1.25
WBP2	1.09
ZMAT3	-1.13
ZNRF2	-1.3