

SUPPLEMENTARY TABLES

Supplementary Table S1: ACSL4-regulated genes related to the mTOR pathway

Gene Symbol	Gene Name
RPS25	ribosomal protein S25
RPTOR	regulatory associated protein of MTOR, complex 1
RPS3A	ribosomal protein S3A
RPS6	ribosomal protein S6
RPS16	ribosomal protein S16
RPS28	ribosomal protein S28
MTOR	mechanistic target of rapamycin (serine/threonine kinase)
RPS9	ribosomal protein S9
AKT1	v-akt murine thymoma viral oncogene homolog 1
EIF4G3	eukaryotic translation initiation factor 4 gamma, 3
EIF4EBP1	eukaryotic translation initiation factor 4E binding protein 1
NAPEPLD	N-acyl phosphatidylethanolamine phospholipase D
RHOV	ras homolog family member V
EIF3H	eukaryotic translation initiation factor 3, subunit H
PLD1	phospholipase D1, phosphatidylcholine-specific
RPS2	ribosomal protein S2
EIF3I	eukaryotic translation initiation factor 3, subunit I
EIF4A2	eukaryotic translation initiation factor 4A2
RPS20	ribosomal protein S20
MAPK1	mitogen-activated protein kinase 1
PPP2R5D	protein phosphatase 2, regulatory subunit B', delta
RHOB	ras homolog family member B
FKBP1A	FK506 binding protein 1A, 12kDa
RHOA	ras homolog family member A
ULK1	unc-51-like kinase 1 (C. elegans)
EIF3G	eukaryotic translation initiation factor 3, subunit G
RPS18	ribosomal protein S18
EIF3F	eukaryotic translation initiation factor 3, subunit F
RPS26	ribosomal protein S26
RPS10	ribosomal protein S10
TSC1	tuberous sclerosis 1
PRKCD	protein kinase C, delta
HRAS	v-Ha-ras Harvey rat sarcoma viral oncogene homolog
RPS23	ribosomal protein S23

(Continued)

Gene Symbol	Gene Name
RPS19	ribosomal protein S19
RPS12	ribosomal protein S12
RHEB	Ras homolog enriched in brain
RHOU	ras homolog family member U
RPSA	ribosomal protein SA
ATG13	autophagy related 13
PRKAA1	protein kinase, AMP-activated, alpha 1 catalytic subunit
PRKAB1	protein kinase, AMP-activated, beta 1 non-catalytic subunit
STK11	serine/threonine kinase 11
INSR	insulin receptor
PPP2R4	protein phosphatase 2A activator, regulatory subunit 4
VEGFA	vascular endothelial growth factor A
PIK3C3	phosphatidylinositol 3-kinase, catalytic subunit type 3
EIF3A	eukaryotic translation initiation factor 3, subunit A
EIF3L	eukaryotic translation initiation factor 3, subunit L
AKT2	v-akt murine thymoma viral oncogene homolog 2
EIF3J	eukaryotic translation initiation factor 3, subunit J
PPP2R2A	protein phosphatase 2, regulatory subunit B, alpha
RHOQ	ras homolog family member Q
PPP2R5A	protein phosphatase 2, regulatory subunit B', alpha
PRKD1	protein kinase D1
RPS4X	ribosomal protein S4, X-linked
DGKZ	diacylglycerol kinase, zeta
RHOG	ras homolog family member G
RPS8	ribosomal protein S8
EIF3M	eukaryotic translation initiation factor 3, subunit M
IRS1	insulin receptor substrate 1
PRKCZ	protein kinase C, zeta
PRKAG2	protein kinase, AMP-activated, gamma 2 non-catalytic subunit
RPS3	ribosomal protein S3
RPS27A	ribosomal protein S27a
EIF4A1	eukaryotic translation initiation factor 4A1
AKT1S1	AKT1 substrate 1 (proline-rich)
EIF4A3	eukaryotic translation initiation factor 4A3
MAPKAP1	mitogen-activated protein kinase associated protein 1
PLD2	phospholipase D2
PIK3R2	phosphoinositide-3-kinase, regulatory subunit 2 (beta)

(Continued)

Gene Symbol	Gene Name
RPS14	ribosomal protein S14
RPS21	ribosomal protein S21
RPS6KA1	ribosomal protein S6 kinase, 90kDa, polypeptide 1
RPS5	ribosomal protein S5
PIK3CA	phosphatidylinositol-4,5-bisphosphate 3-kinase, catalytic subunit alpha
RHOF	ras homolog family member F (in filopodia)
EIF3D	eukaryotic translation initiation factor 3, subunit D
PLD6	phospholipase D family, member 6
PIK3C2B	phosphatidylinositol-4-phosphate 3-kinase, catalytic subunit type 2 beta
PIK3R3	phosphoinositide-3-kinase, regulatory subunit 3 (gamma)
RPS6KB1	ribosomal protein S6 kinase, 70kDa, polypeptide 1
RPS7	ribosomal protein S7
PRKD3	protein kinase D3
RRAS	related RAS viral (r-ras) oncogene homolog
TSC2	tuberous sclerosis 2
PRR5L	proline rich 5 like
DDIT4	DNA-damage-inducible transcript 4
EIF3E	eukaryotic translation initiation factor 3, subunit E
EIF4B	eukaryotic translation initiation factor 4B
RPS27	ribosomal protein S27
RPS24	ribosomal protein S24
RHOT1	ras homolog family member T1
RPS15	ribosomal protein S15

Supplementary Table S2: ACSL4-regulated genes related to the eIF4 and p70S6K signaling

Gene Symbol	Gene Name
RPS11	ribosomal protein S11
RPS25	ribosomal protein S25
EIF1	eukaryotic translation initiation factor 1
RPS3A	ribosomal protein S3A
ITGA3	integrin, alpha 3 (antigen CD49C, alpha 3 subunit of VLA-3 receptor)
RPS6	ribosomal protein S6
RPS16	ribosomal protein S16
RPS28	ribosomal protein S28
MTOR	mechanistic target of rapamycin (serine/threonine kinase)
RPS9	ribosomal protein S9
EIF2S1	eukaryotic translation initiation factor 2, subunit 1 alpha, 35kDa
ITGA5	integrin, alpha 5 (fibronectin receptor, alpha polypeptide)
AKT1	v-akt murine thymoma viral oncogene homolog 1
EIF4EBP1	eukaryotic translation initiation factor 4E binding protein 1
EIF4G3	eukaryotic translation initiation factor 4 gamma, 3
EIF4EBP2	eukaryotic translation initiation factor 4E binding protein 2
EIF3H	eukaryotic translation initiation factor 3, subunit H
RPS2	ribosomal protein S2
EIF3I	eukaryotic translation initiation factor 3, subunit I
EIF4A2	eukaryotic translation initiation factor 4A2
RPS20	ribosomal protein S20
MAPK1	mitogen-activated protein kinase 1
PABPC1	poly(A) binding protein, cytoplasmic 1
PPP2R5D	protein phosphatase 2, regulatory subunit B', delta
EIF1AX	eukaryotic translation initiation factor 1A, X-linked
EIF3G	eukaryotic translation initiation factor 3, subunit G
RPS18	ribosomal protein S18
MAPK14	mitogen-activated protein kinase 14
EIF3F	eukaryotic translation initiation factor 3, subunit F
SOS1	son of sevenless homolog 1 (Drosophila)
RPS26	ribosomal protein S26
RPS10	ribosomal protein S10
PAIP2	poly(A) binding protein interacting protein 2
HRAS	v-Ha-ras Harvey rat sarcoma viral oncogene homolog
RPS23	ribosomal protein S23
RPS19	ribosomal protein S19

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Gene Symbol	Gene Name
RPS12	ribosomal protein S12
EIF2B2	eukaryotic translation initiation factor 2B, subunit 2 beta, 39kDa
EIF2S3	eukaryotic translation initiation factor 2, subunit 3 gamma, 52kDa
RPSA	ribosomal protein SA
PAIP1	poly(A) binding protein interacting protein 1
PPP2R4	protein phosphatase 2A activator, regulatory subunit 4
PIK3C3	phosphatidylinositol 3-kinase, catalytic subunit type 3
EIF3A	eukaryotic translation initiation factor 3, subunit A
EIF3L	eukaryotic translation initiation factor 3, subunit L
ITGA2	integrin, alpha 2 (CD49B, alpha 2 subunit of VLA-2 receptor)
AKT2	v-akt murine thymoma viral oncogene homolog 2
EIF3J	eukaryotic translation initiation factor 3, subunit J
PPP2R2A	protein phosphatase 2, regulatory subunit B, alpha
PPP2R5A	protein phosphatase 2, regulatory subunit B', alpha
RPS4X	ribosomal protein S4, X-linked
RPS8	ribosomal protein S8
EIF3M	eukaryotic translation initiation factor 3, subunit M
IRS1	insulin receptor substrate 1
PRKCZ	protein kinase C, zeta
EIF2B4	eukaryotic translation initiation factor 2B, subunit 4 delta, 67kDa
RPS27A	ribosomal protein S27a
RPS3	ribosomal protein S3
EIF4A1	eukaryotic translation initiation factor 4A1
EIF4A3	eukaryotic translation initiation factor 4A3
RPS14	ribosomal protein S14
PIK3R2	phosphoinositide-3-kinase, regulatory subunit 2 (beta)
RPS21	ribosomal protein S21
RPS5	ribosomal protein S5
PIK3CA	phosphatidylinositol-4,5-bisphosphate 3-kinase, catalytic subunit alpha
EIF3D	eukaryotic translation initiation factor 3, subunit D
PIK3C2B	phosphatidylinositol-4-phosphate 3-kinase, catalytic subunit type 2 beta
EIF2B1	eukaryotic translation initiation factor 2B, subunit 1 alpha, 26kDa
PIK3R3	phosphoinositide-3-kinase, regulatory subunit 3 (gamma)
RPS7	ribosomal protein S7
RPS6KB1	ribosomal protein S6 kinase, 70kDa, polypeptide 1
RRAS	related RAS viral (r-ras) oncogene homolog
EIF3E	eukaryotic translation initiation factor 3, subunit E

(Continued)

Gene Symbol	Gene Name
MAPK11	mitogen-activated protein kinase 11
RPS27	ribosomal protein S27
RPS24	ribosomal protein S24
RPS15	ribosomal protein S15
GRB2	growth factor receptor-bound protein 2

Supplementary Table S3: List of antibodies used in RPPA

Official Antibody Name	Gene Name
14-3-3-beta-R-V	YWHAB
14-3-3-epsilon-M-C	YWHAE
14-3-3-zeta-R-V	YWHAZ
4E-BP1-R-V	EIF4EBP1
4E-BP1_pS65-R-V	EIF4EBP1
4E-BP1_pT37_T46-R-V	EIF4EBP1
53BP1-R-V	TP53BP1
A-Raf-R-V	ARAF
ACC_pS79-R-V	ACACA ACACB
ACC1-R-E	ACACA
ACVRL1-R-C	ACVRL1
ADAR1-M-V	ADAR
Akt-R-V	AKT1 AKT2 AKT3
Akt_pS473-R-V	AKT1 AKT2 AKT3
Akt_pT308-R-V	AKT1 AKT2 AKT3
AMPK-alpha-R-C	PRKAA1
AMPK-alpha_pT172-R-V	PRKAA1
Annexin-I-M-V	ANXA1
Annexin-VII-M-V	ANXA7
AR-R-V	AR
ARHI-M-C	DIRAS3
ATM-R-V	ATM
ATM_pS1981-R-V	ATM
ATP5H-M-C	ATP5H
ATR-R-C	ATR
b-Catenin-R-V	CTNNB1
b-Catenin_pT41_S45-R-V	CTNNB1
B-Raf-M-C	BRAF
B-Raf_pS445-R-V	BRAF
Bad_pS112-R-V	BAD
Bak-R-C	BAK1
BAP1-M-V	BAP1
Bax-R-V	BAX
Bcl-xL-R-V	BCL2L1
Bcl2-M-V	BCL2
Beclin-G-C	BECN1

(Continued)

Official Antibody Name	Gene Name
Bid-R-C	BID
Bim-R-V	BCL2L11
BRCA2-R-C	BRCA2
c-Jun_pS73-R-V	JUN
c-Kit-R-V	KIT
c-Met-M-QC	MET
c-Met_pY1234_Y1235-R-V	MET
c-Myc-R-C	MYC
C-Raf-R-V	RAF1
C-Raf_pS338-R-V	RAF1
Caspase-7-cleaved-R-C	CASP7
Caspase-8-M-QC	CASP8
Caveolin-1-R-V	CAV1
CD29-M-V	ITGB1
CD31-M-V	PECAM1
CD49b-M-V	ITGA2
CDK1-R-V	CDC2-CDK1
Chk1-M-C	CHEK1
Chk1_pS345-R-C	CHEK1
Chk2-M-V	CHEK2
Chk2_pT68-R-C	CHEK2
Claudin-7-R-V	CLDN7
Collagen-VI-R-V	COL6A1
Complex-II-Subunit-M-V	SDHA
Cox-IV-M-C	COX4I1
Cox2-R-C	PTGS2
Cyclin-B1-R-V	CCNB1
Cyclin-D1-R-V	CCND1
Cyclin-E1-M-V	CCNE1
Cyclophilin-F-M-V	PPIF
DJ1-R-V	PARK7
Dvl3-R-V	DVL3
E-Cadherin-R-V	CDH1
E2F1-M-V	E2F1
eEF2-R-C	EEF2
eEF2K-R-V	EEF2K
EGFR-R-V	EGFR

(Continued)

Official Antibody Name	Gene Name
EGFR_pY1068-R-C	EGFR
EGFR_pY1173-R-V	EGFR
eIF4E-R-V	EIF4E
eIF4G-R-C	EIF4G1
ER-alpha-R-V	ESR1
ER-alpha_pS118-R-V	ESR1
ERCC1-M-V	ERCC1
Ets-1-R-V	ETS1
FAK-R-E	PTK2
FAK_pY397-R-V	PTK2
FASN-R-V	FASN
Fibronectin-R-V	FN1
FoxM1-R-V	FOXO1
FoxO3a-R-C	FOXO3
FoxO3a_pS318_S321-R-C	FOXO3
G6PD-M-V	G6PD
Gab2-R-V	GAB2
GAPDH-M-C	GAPDH
GATA3-M-V	GATA3
GCN5L2-R-V	KAT2A
GPBB-R-V	PYGB
GSK-3ab-M-V	GSK3A GSK3B
GSK-3ab_pS21_S9-R-V	GSK3A GSK3B
GSK-3b_pS9-R-V	GSK3B
Gys-R-V	GYS1
Gys_pS641-R-V	GYS1
HER2-M-V	ERBB2
HER2_pY1248-R-C	ERBB2
HER3-R-V	ERBB3
HER3_pY1289-R-C	ERBB3
Heregulin-R-V	NRG1
HIAP-R-C	BIRC2
Histone-H3-R-V	H3F3A H3F3B
IGF1R-beta-R-V	IGF1R
IGFBP2-R-V	IGFBP2
INPP4b-R-V	INPP4B
IRS1-R-V	IRS1

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Official Antibody Name	Gene Name
JAB1-M-C	COP5
JNK_pT183_Y185-R-V	MAPK8
JNK2-R-C	MAPK9
Lck-R-V	LCK
MAPK_pT202_Y204-R-V	MAPK1 MAPK3
Mcl-1-R-V	MCL1
MDM2_pS166-R-V	MDM2
MEK1-R-V	MAP2K1
MEK1_pS217_S221-R-V	MAP2K1 MAP2K2
MEK2-R-V	MAP2K2
Merlin-R-C	NF2
MIG6-M-V	ERRFI1
MSH2-M-V	MSH2
MSH6-R-C	MSH6
mTOR-R-V	MTOR
mTOR_pS2448-R-C	MTOR
Myosin-11-R-V	MYH11
Myosin-IIa_pS1943-R-V	MYH9
N-Cadherin-R-V	CDH2
N-Ras-M-V	NRAS
NAPSIN-A-R-C	NAPSA
NDRG1_pT346-R-V	NDRG1
NF-kB-p65_pS536-R-C	RELA
Notch1-R-V	NOTCH1
p16INK4a-R-V	CDKN2A
p21-R-V	CDKN1A
p27-Kip-1-R-V	CDKN1B
p27_pT157-R-C	CDKN1B
p27_pT198-R-V	CDKN1B
p38-alpha-M-V	MAPK14
p38-R-V	MAPK14
p38_pT180_Y182-R-V	MAPK14
p53-R-C	TP53
p70-S6K_pT389-R-V	RPS6KB1
p70-S6K1-R-V	RPS6KB1
PAI-1-M-V	SERPINE1
PARP-cleaved-M-QC	PARP1

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Official Antibody Name	Gene Name
PARP1-R-V	PARP1
Paxillin-R-C	PXN
PCNA-M-C	PCNA
Pdcd1L1-G-C	CD274
Pdcd4-R-C	PDCD4
PDGFR-beta-R-V	PDGFRB
PDK1-R-V	PDPK1
PDK1_pS241-R-V	PDPK1
PEA-15-R-V	PEA15
PEA-15_pS116-R-V	PEA15
PI3K-p110-alpha-R-C	PIK3CA
PI3K-p85-R-V	PIK3R1
PKC-alpha-M-V	PRKCA
PKC-alpha_pS657-R-C	PRKCA
PKC-beta-II_pS660-R-V	PRKCA PRKCB PRKCD PRKCE PRKCH PRKCQ
PKC-delta_pS664-R-V	PRKCD
PMS2-R-V	PMS2
Porin-M-V	VDAC1
PR-R-V	PGR
PRAS40_pT246-R-V	AKT1S1
PREX1-R-V	PREX1
PTEN-R-V	PTEN
Rab11-R-E	RAB11A RAB11B
Rab25-R-V	RAB25
Rad50-M-V	RAD50
Rad51-R-V	RAD51
Raptor-R-V	RPTOR
Rb-M-QC	RB1
Rb_pS807_S811-R-V	RB1
RBM15-R-V	RBM15
Rictor-R-C	RICTOR
Rictor_pT1135-R-V	RICTOR
RSK-R-C	RPS6KA1 RPS6KA2 RPS6KA3
S6_pS235_S236-R-V	RPS6
S6_pS240_S244-R-V	RPS6
SCD-M-V	SCD
SETD2-R-QC	SETD2

(Continued)

Official Antibody Name	Gene Name
SF2-M-V	SRSF1
Shc_pY317-R-V	SHC1
Smac-M-QC	DIABLO
Smad1-R-V	SMAD1
Smad3-R-V	SMAD3
Smad4-M-V	SMAD4
Snail-M-QC	SNAI1
Src-M-V	SRC
Src_pY416-R-C	SRC LYN FYN LCK YES1 HCK
Src_pY527-R-V	SRC YES1 FYN FGR
Stat3_pY705-R-V	STAT3
Stat5a-R-V	STAT5A
Stathmin-1-R-V	STMN1
Syk-M-V	SYK
TAZ-R-V	WWTR1
TFRC-R-V	TFRC
TIGAR-R-V	C12ORF5
Transglutaminase-M-V	TGM2
TSC1-R-C	TSC1
TTF1-R-V	NKX2-1
Tuberin-R-V	TSC2
Tuberin_pT1462-R-V	TSC2
TWIST-M-C	TWIST2
Tyro3-R-V	TYRO3
UBAC1-R-V	UBAC1
UGT1A-M-V	UGT1A1
UQCRC2-M-C	UQCRC2
VEGFR-2-R-V	KDR
XRCC1-R-C	XRCC1
YAP-R-E	YAP1
YAP_pS127-R-E	YAP1
YB1-R-V	YBX1
YB1_pS102-R-V	YBX1