
Supplementary information

The tumor suppressor folliculin inhibits lactate dehydrogenase A and regulates the Warburg effect

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Supplementary Table 2. Limited Proteolytic analysis of LDHA.

Limited Proteolysis peptides		
Protein (position)	Sequence	Condition
LDHA (91-99)	LVIITAGAR	FLCN-10 peptide only
LDHA (213-228)	TLHPDLGTDKDKEQWK	Untreated only
LDHA (306-315)	VTLTSEEEAR	Both conditions
LDHA (318-328)	KSADTLWGICK	Both conditions

Supplementary Table 3. KEY RESOURCES TABLE

REAGENT or RESOURCE	SOURCE	IDENTIFIER
Antibodies		
Rabbit anti-FLAG tag	Thermo Scientific	Cat# PA1-984B; RRID:AB_347227
Mouse anti-GAPDH (1D4)	Enzo Life Sciences	Cat# ADI-CSA-335; RRID:AB_10617247
Rabbit anti-FLCN (D14G9)	Cell Signaling Technology	Cat# 3697; RRID:AB_2231646
Rabbit anti-FLCN	Novus Bio	Cat# NBP1-44995; RRID:AB_10008586
Rabbit anti-HA tag (C29F4)	Cell Signaling Technology	Cat# 3724; RRID:AB_1549585
Rabbit anti-LDHA	Abcam	Cat# ab47010; RRID:AB_1952042
Mouse anti-LDHA (E-9)	Santa Cruz Biotechnology	Cat# sc-137243; RRID:AB_2137192
Rabbit anti-LDHB (431.1)	Santa Cruz Biotechnology	Cat# sc-100775; RRID:AB_1124720
Rabbit anti-phosphoTyr10-LDHA	Cell Signaling Technology	Cat# 8176; RRID:AB_11220238
Rabbit anti-cleaved Caspase-3	Cell Signaling Technology	Cat# 9664;RRID:AB_2070042
Rabbit anti-cleaved PARP	Cell Signaling Technology	Cat# 5625; RRID:AB_10699459
Anti-mouse secondary	Cell Signaling Technology	Cat# 7076; RRID:AB_330924
Anti-rabbit secondary	Cell Signaling Technology	Cat# 7074; RRID:AB_2099233

Anti-mouse Alexa Fluor 647 secondary	ThermoFisher Scientific	Cat# A-21236, RRID:AB_2535805
Anti-rabbit Alexa Fluor 488 secondary	ThermoFisher Scientific	Cat# A-11034; RRID:AB_2576217
Bacterial and Virus Strains		
BL21(DE3)	New England BioLabs	Cat# C25271
Biological Samples		
Chemicals, Peptides, and Recombinant Proteins		
Sodium Pyruvate	Millipore-Sigma	
Sodium lactate	Millipore-Sigma	
Critical Commercial Assay Reagents		
Mirus TransIT-2020	MirusBio	Cat# MIR5405
Anti-FLAG M2 affinity gel	Sigma-Aldrich	Cat# A2220; RRID:AB_10063035
Anti-HA agarose	ThermoFisher Scientific	Cat# 26182; RRID:AB_2532162
Protein G agarose	ThermoFisher Scientific	Cat# 15-920-010
Ni-NTA Agarose	ThermoFisher Scientific	Cat# 88221
ProLong Gold antifade reagent with DAPI	ThermoFisher Scientific	Cat# P36935
Experimental Models: Cell Lines		
HEK293	ATCC	Cat# CRL-1573; RRID:CVCL_0045
HAP1 Parental	Horizon Discovery	Cat# C631; RRID:CVCL_Y019
HAP1 <i>LDHA</i> -	Horizon Discovery	Cat# HZGHC004917c002; RRID:CVCL_SV40

HAP1 <i>LDHB</i> -	Horizon Discovery	Cat# HZGHC005907c010; RRID:CVCL_SV42
UOK257	Laura S. Schmidt and W. Marston Linehan	RRID:CVCL_S717
UOK257-2	Laura S. Schmidt and W. Marston Linehan	RRID:CVCL_1D69
PC3	ATCC	Cat# CRL-1435; RRID:CVCL_0035
786-O	ATCC	Cat# CRL-1932; RRID:CVCL_1051
A498	ATCC	Cat# HTB-44; RRID:CVCL_1056
Caki-1	ATCC	Cat# HTB-46; RRID:CVCL_0234
Caki-2	ATCC	Cat# HTB-47; RRID:CVCL_0235
LNCaP	ATCC	Cat# CRL-1740; RRID:CVCL_1379
Du145	ATCC	Cat# HTB-81; RRID:CVCL_0105
RT4	ATCC	Cat# HTB-2;RRID:CVCL_0036
J82	ATCC	Cat# HTB-1;RRID:CVCL_0359
T24	ATCC	Cat# HTB-4;RRID:CVCL_0554
UM-UC-3	ATCC	Cat# CRL-1749; RRID:CVCL_1783
SW780	ATCC	Cat# CRL-2169; RRID:CVCL_1728
MDA-MB-231	ATCC	Cat# CRL-12532; RRID:CVCL_0062

H1299	ATCC	Cat# CRL-5803; RRID:CVCL_0060
A-549	ATCC	Cat# CRL-7909; RRID:CVCL_0023
HT29	ATCC	Cat# HTB-38; RRID:CVCL_0320
Oligonucleotides		
DNA primers	Eurofins Genomics	
FLCN FLAG BamHI F 174-344	TATGCG GGATCC ATG gattacaaggatgacgacgataag GGA ACCATCATGATGGACCGGATCT	
FLCN FLAG BamHI F 100-300	TATGCG GGATCC ATG gattacaaggatgacgacgataag GGA AAAGAGACCTCCATTAATAACG	
FLCN XhoI R 100-300	TATGCG CTCGAG TTA GACCCAGCTTTCTGATTC	
FLCN XhoI R 100-210	TATGCG CTCGAG TTA tgcctcaaacaccttgag	
FLCN XhoI R 100-260	TATGCG CTCGAG TTA ccaggcaaaggaggtg	
FLCN-XhoI-R-1-100	TATGCG CTCGAG TTA TTTATCATGGCTGATATATCCCGG	
FLCN XhoI R 100-220	TATGCG CTCGAG TTA CTGAGCACGCTGTGGGCA	
FLCN XhoI R 100-230	TATGCG CTCGAG TTA TAGGAATGGCGTGAAGGC	
FLCN XhoI R 100-241	TATGCG CTCGAG TTA CAGCGAGCGGGCGGCGTT	
FLCN XhoI R 100-250	TATGCG CTCGAG TTA CAGGTTGTCATCACTTGT	
FLCN-N-BamHI-F	TATGCG GGATCC ATG gattacaaggatgacgacgataag gga AATGCCATCGTGGCTCTC	
FLCN-N-XhoI-R	CTCGGT CTCGAG TTA TGGCAGCTTCCGGGGCTGCCAGCT	
FLCN-C-BamHI-F	TATGCG GGATCC ATG gattacaaggatgacgacgataag GGA GTCTTCAAGTCCCTCCGGCACATGA	
FLCN-A219N-F	TGCCACAGCGTAACCAGAGGATGAAC	
FLCN-A219N-R	GTTTCATCCTCTGGTTACGCTGTGGGCA	
FLCN-Q220A-F	CCACAGCGTGCTGCTAGGATGAACACA	
FLCN-Q220A-R	TGTGTTTCATCCTAGCAGCACGCTGTGG	
FLCN-R221A-F	CAGCGTGCTCAGGCTATGAACACAGCC	

FLCN-R221A-R	GGCTGTGTTTCATAGCCTGAGCACGCTG
FLCN-M222A-F	CGTGCTCAGAGGGCTAACACAGCCTTC
FLCN-M222A-R	GAAGGCTGTGTTAGCCCTCTGAGCACG
FLCN-N223A-F	GCTCAGAGGATGGCTACAGCCTTCACG
FLCN-N223A-R	CGTGAAGGCTGTAGCCATCCTCTGAGC
FLCN-T224A-F	CAGAGGATGAACGCAGCCTTCACGCCA
FLCN-T224A-R	TGGCGTGAAGGCTGCGTTCATCCTCTG
FLCN-A225N-F	AGGATGAACACAACTTCACGCCATTC
FLCN-A225N-R	GAATGGCGTGAAGTTTGTGTTTCATCCT
FLCN-F226A-F	ATGAACACAGCCGCTACGCCATTCCTA
FLCN-F226A-R	TAGGAATGGCGTAGCGGCTGTGTTTCAT
FLCN-T227A-F	AACACAGCCTTCGCTCCATTCCTACAC
FLCN-T227A-R	GTGTAGGAATGGAGCGAAGGCTGTGTT
FLCN-P228A-F	ACAGCCTTCACGGCTTTCCTACACCAG
FLCN-P228A-R	CTGGTGTAGGAAAGCCGTGAAGGCTGT
LDHA-FLAG-Kpnl-F	TATGCG GGTACC ATG gattacaaggatgacgacgataag GGA gcaac tctaaaggat cagct
LDHA-Xhol-R	CTCGGT CTCGAG TCA aaactgcagttctttctgaatg
LDHA-R106A-F	cagcaagagggagaaagcgctcttaatttggtccag
LDHA-R106A-R	ctggaccaaattaagagcgctttctccctcttgctg
LDHA-R106K-F	cagcaagagggagaaagcaagcttaatttggtccag
LDHA-R106K-R	ctggaccaaattaagcttgctttctccctcttgctg
LDHA-R106Q-F	cagcaagagggagaaagccagcttaatttggtccag
LDHA-R106Q-R	Ctggaccaaattaagctggctttctccctcttgctg
LDHB-FLAG-Kpn1-F	TATGCG GGTACC ATG gattacaaggatgacgacgataag GGA gcaactcttaaggaa
LDHB-Xhol-R	CTCGGT CTCGAG TCA caggtcttttaggtcctctg
siRNA Oligonucleotides	Horizon Discovery/Dharmacon

Non-Targeting Pool	UGGUUUACAUGUUCGACUAA, UGGUUUACAUGUUGUGUGA, UGGUUUACAUGUUUCUGA, UGGUUUACAUGUUUCCUA
FLCN SMARTPool	AAAGAGACCUCCAUUAAAU, CGGGAUUAUCAGCCAUGA, ACACAGCCUUCACGCCAUU, GAGGAUACCUUGGUCCAGA