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FLCN Antibody (C-term)

Affinity Purified Rabbit Polyclonal Antibody (Pab)

Catalog # AP8658b

Specification

FLCN Antibody (C-term) - Product Information

Application	**IHC-P, FC, WB,E**
Primary Accession	Q8NFG4
Other Accession	Q76JQ2, Q8QZS3, Q3B7L5
Reactivity	**Human**
Predicted	**Bovine, Mouse, Rat**
Host	**Rabbit**
Clonality	**Polyclonal**
Isotype	**Rabbit IgG**
Calculated MW	**64473**
Antigen Region	**505-534**

FLCN Antibody (C-term) - Additional Information

Gene ID 201163

Other Names
Folliculin, BHD skin lesion fibrofolliculoma protein, Birt-Hogg-Dube syndrome protein, FLCN, BHD

Target/Specificity
This FLCN antibody is generated from rabbits immunized with a KLH conjugated synthetic peptide between 505-534 amino acids from the C-terminal region of human FLCN.

Dilution
IHC-P~~1:50~100
FC~~1:10~50
WB~~1:1000
E~~Use at an assay dependent concentration.

Format
Purified polyclonal antibody supplied in PBS with 0.09% (W/V) sodium azide. This antibody is purified through a protein A column, followed by peptide affinity purification.

Storage
Maintain refrigerated at 2-8°C for up to 2 weeks. For long term storage store at -20°C in small aliquots to prevent freeze-thaw cycles.

Precautions
FLCN Antibody (C-term) is for research use only and not for use in diagnostic or therapeutic procedures.

FLCN Antibody (C-term) - Protein Information

Name FLCN {ECO:0000303|PubMed:15657874, ECO:0000312|HGNC:HGNC:27310}

Function Multi-functional protein, involved in both the cellular response to amino acid availability and in the regulation of glycolysis (PubMed:17028174, PubMed:18663353, PubMed:21209915, PubMed:24081491, PubMed:24095279, PubMed:31672913, PubMed:31704029, PubMed:32612235, PubMed:34381247, PubMed:36103527, PubMed:37079666). GTPase-activating protein that plays a key role in the cellular response to amino acid availability through regulation of the non-canonical mTORC1 signaling cascade controlling the MiT/TFE factors TFEB and TFE3 (PubMed:17028174, PubMed:18663353, PubMed:21209915, PubMed:24081491, PubMed:24095279, PubMed:24448649, PubMed:31672913, PubMed:31704029, PubMed:32612235, PubMed:36103527, PubMed:37079666). Activates mTORC1 by acting as a GTPase-activating protein: specifically stimulates GTP hydrolysis by RagC/RRAGC or RagD/RRAGD, promoting the conversion to the GDP-bound state of RagC/RRAGC or RagD/RRAGD, and thereby activating the kinase activity of mTORC1 (PubMed:24095279, PubMed:31672913, PubMed:31704029, PubMed:32612235, PubMed:37079666). The GTPase-activating activity is inhibited during starvation and activated in presence of nutrients (PubMed:31672913, PubMed:32612235). Acts as a key component for non- canonical mTORC1-dependent control of the MiT/TFE factors TFEB and TFE3, while it is not involved in mTORC1-dependent phosphorylation of canonical RPS6KB1/S6K1 and EIF4EBP1/4E-BP1 (PubMed:21209915, PubMed:24081491, PubMed:31672913, PubMed:32612235). In low-amino acid conditions, the lysosomal folliculin complex (LFC) is formed on the membrane of lysosomes, which inhibits the GTPase-activating activity of FLCN, inactivates mTORC1 and maximizes nuclear translocation of TFEB and TFE3 (PubMed:31672913). Upon amino acid restimulation, RagA/RRAGA (or RagB/RRAGB) nucleotide exchange promotes disassembly of the LFC complex and liberates the GTPase-activating activity of FLCN, leading to activation of mTORC1 and subsequent cytoplasmic retention of TFEB and TFE3 (PubMed:31672913). Indirectly acts as a positive regulator of Wnt signaling by promoting mTOR-dependent cytoplasmic retention of MiT/TFE factor TFE3 (PubMed:31272105). Required for the exit of hematopoietic stem cell from pluripotency by promoting mTOR-dependent cytoplasmic retention of TFE3, thereby increasing Wnt signaling (PubMed:30733432). Acts as an inhibitor of browning of adipose tissue by regulating mTOR-dependent cytoplasmic retention of TFE3 (By similarity). Involved in the control of embryonic stem cells differentiation; together with LAMTOR1 it is necessary to recruit and activate RagC/RRAGC and RagD/RRAGD at the lysosomes, and to induce exit of embryonic stem cells from pluripotency via non-canonical, mTOR- independent TFE3 inactivation (By similarity). In response to flow stress, regulates STK11/LKB1 accumulation and mTORC1 activation through primary cilia: may act by recruiting STK11/LKB1 to primary cilia for activation of AMPK resided at basal bodies, causing mTORC1 down- regulation (PubMed:27072130). Together with FNIP1 and/or FNIP2, regulates autophagy: following phosphorylation by ULK1, interacts with GABARAP and promotes autophagy (PubMed:25126726). Required for starvation-induced perinuclear clustering of lysosomes by promoting association of RILP with its effector RAB34 (PubMed:27113757). Regulates glycolysis by binding to lactate dehydrogenase LDHA, acting as an uncompetitive inhibitor (PubMed:34381247).

Cellular Location
Lysosome membrane. Cytoplasm, cytosol. Cell projection, cilium. Cytoplasm, cytoskeleton, microtubule organizing center, centrosome. Cytoplasm, cytoskeleton, spindle. Nucleus
Note=Localizes to lysosome membrane in amino acid-depleted conditions and relocalizes to the cytosol upon refeeding (PubMed:24095279, PubMed:29848618, PubMed:31672913). Colocalizes with FNIP1 and FNIP2 in the cytoplasm (PubMed:17028174, PubMed:18663353). Also localizes to motile and non-motile cilia, centrosomes and the mitotic spindle (PubMed:23784378).

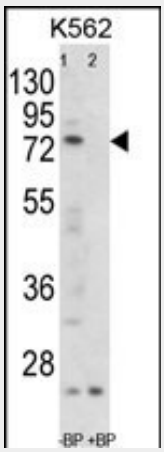
Tissue Location
Expressed in most tissues tested, including skin, lung, kidney, heart, testis and stomach.

FLCN Antibody (C-term) - Protocols

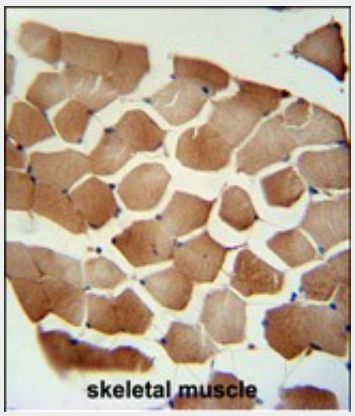
Provided below are standard protocols that you may find useful for product applications.

- Western Blot
- Blocking Peptides
- Dot Blot
- Immunohistochemistry
- Immunofluorescence
- Immunoprecipitation
- Flow Cytomety
- Cell Culture

FLCN Antibody (C-term) - Images



Western blot analysis of FLCN Antibody (C-term) Pab (Cat. #AP8658b) pre-incubated without(lane 1) and with(lane 2) blocking peptide in K562 cell line lysate. FLCN (arrow) was detected using the purified Pab.



FLCN Antibody (C-term) (Cat. #AP8658b) immunohistochemistry analysis in formalin fixed and paraffin embedded human skeletal muscle followed by peroxidase conjugation of the secondary antibody and DAB staining. This data demonstrates the use of the FLCN Antibody (C-term) for immunohistochemistry. Clinical relevance has not been evaluated.

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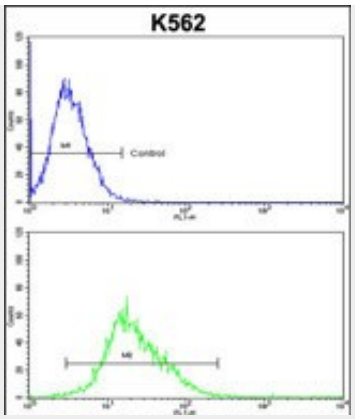

FLCN Antibody (C-term)(Cat. #AP8658b) flow cytometric analysis of k562 cells (bottom histogram) compared to a negative control cell (top histogram).FITC-conjugated goat-anti-rabbit secondary antibodies were used for the analysis.

FLCN Antibody (C-term) - Background

FLCN may play a role in the pathogenesis of an uncommon form of kidney cancer through its association with an inherited disorder of the hair follicle (fibrofolliculomas). FLCN may be a tumor suppressor. May be involved in colorectal tumorigenesis. It may be involved in energy and/or nutrient sensing through the AMPK and mTOR signaling pathways.

FLCN Antibody (C-term) - References

Khoo,S.K., et.al., J. Med. Genet. 39 (12), 906-912 (2002)
Shin,J.H., et.al., J. Med. Genet. 40 (5), 364-367 (2003)