

Recombinant Mouse Flcn Protein, Myc/DDK-tagged

Cat. No. Flcn-3036M **Lot. No.** (See product label)

SPECIFICATION

Product Overview	Purified recombinant protein of mouse full-length folliculin (Flcn), with C-terminal MYC/DDK tag, expressed in HEK293T cells.
Species	Mouse
Source	HEK293
Description	GTPase-activating protein that plays a key role in the cellular response to amino acid availability through regulation of the mTORC1 signaling cascade controlling the MiT/TFE factors TFEB and TFE3. Activates mTORC1 by acting as a GTPase-activating protein: specifically stimulates GTP hydrolysis by RRAGC/RagC or RRAGD/RagD, promoting the conversion to the GDP-bound state of RRAGC/RagC or RRAGD/RagD, and thereby activating the kinase activity of mTORC1. The GTPase-activating activity is inhibited during starvation and activated in presence of nutrients. Acts as a key component for 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. 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. Upon amino acid restimulation, RRAGA/RagA (or RRAGB/RagB) 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. Indirectly acts as a positive regulator of Wnt signaling by promoting mTOR-dependent

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cytoplasmic retention of Mit/TFE factor TFE3 Required for the exit of hematopoietic stem cell from pluripotency by promoting mTOR-dependent cytoplasmic retention of TFE3, thereby increasing Wnt signaling. Acts as an inhibitor of browning of adipose tissue by regulating mTOR-dependent cytoplasmic retention of TFE3 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. Together with FNIP1 and/or FNIP2, regulates autophagy: following phosphorylation by ULK1, interacts with GABARAP and promotes autophagy. Required for starvation-induced perinuclear clustering of lysosomes by promoting association of RILP with its effector RAB34.

Molecular Mass	64.3 kDa
Purity	> 80% as determined by SDS-PAGE and Coomassie blue staining
Stability	Stable for 12 months from the date of receipt of the product under proper storage and handling conditions. Avoid repeated freeze-thaw cycles.
Storage	Store at -80 centigrade after receiving vials.
Concentration	>50 µg/mL as determined by microplate BCA method
Storage Buffer	25 mM Tris.HCl, pH 7.3, 100 mM glycine, 10% glycerol.

GENE INFORMATION

Gene Name	Flcn folliculin [<i>Mus musculus</i> (house mouse)]
Official Symbol	Flcn

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Synonyms	FLCN; folliculin; Bhd; FLCL; AU014660; B430214A04Rik; MGC37841
Gene ID	216805
mRNA Refseq	NM_146018
Protein Refseq	NP_666130
UniProt ID	Q8QZS3

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