



Datasheet for ABIN3080187
FLCN Protein (AA 1-579) (Strep Tag)



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1 Image

Overview

Quantity:	1 mg
Target:	FLCN
Protein Characteristics:	AA 1-579
Origin:	Human
Source:	Tobacco (Nicotiana tabacum)
Protein Type:	Recombinant
Purification tag / Conjugate:	This FLCN protein is labelled with Strep Tag.
Application:	Western Blotting (WB), ELISA, SDS-PAGE (SDS)

Product Details

Sequence: MNAIVALCHF CELHGPRTL F CTEVLHAPLP QGDGNEDSPG QGEQAE EEEEG GIQMNSRMRA
 HSPAEGASVE SSSPGPKKSD MCEGCRSLAA GHPGYISHDK ETSIKYVSHQ HPSHPQLFSI
 VRQACVRSLS CEVCPGREGP IFFGDEQHGF VFSHTFFIKD SLARGFQRWY SIITIMMDRI
 YLINSWPFLG KVRGIIDEL QGKALKVFEA EQFGCPQRAQ RMNTAFTPFL HQRNGNAARS
 LTSLTSDN L WACLHTSFAW LLKACGSRLT EKLLLEGAPTE DTLVQMEKLA DLEEESESWD
 NSEAE EEEKA PVLPESTEGR ELTQGPAESS SLSGCGSWQP RKLPVFKSLR HMRQVLGAPS
 FRMLAWHVLM GNQVIWKS RD VDLVQSAFEV LRTMLPVGCV RIIPYSSQYE EAYRCN FLGL
 SPHVQIPPHV LSSEFAVIVE VHAAARSTLH PVGCEDDQSL SKYEFVVTSG SPVAADRVGP
 TILNKIEAAL TNQNLSDVV DQCLVCLKEE WMNKVKVLFK FTKVDSRPKE DTQKLLSILG
 ASEEDNVKLL KFWMTGLSKT YKSHLMSTVR SPTASESRN

Sequence without tag. The proposed Strep-Tag is based on experience s with the expression system, a different complexity of the protein could make another tag necessary. In case you

have a special request, please contact us.

Characteristics:

Key Benefits:

- Made in Germany - from design to production - by highly experienced protein experts.
- Protein expressed with ALiCE® and purified by multi-step, protein-specific process to ensure correct folding and modification.
- These proteins are normally active (enzymatically functional) as our customers have reported (not tested by us and not guaranteed).
- State-of-the-art algorithm used for plasmid design (Gene synthesis).

This protein is a **made-to-order protein** and will be made for the first time for your order. Our experts in the lab will ensure that you receive a correctly folded protein.

The big advantage of ordering our **made-to-order proteins** in comparison to ordering custom made proteins from other companies is that there is no financial obligation in case the protein cannot be expressed or purified.

Expression System:

- ALiCE®, our Almost Living Cell-Free Expression System is based on a lysate obtained from *Nicotiana tabacum* c.v.. This contains all the protein expression machinery needed to produce even the most difficult-to-express proteins, including those that require post-translational modifications.
- During lysate production, the cell wall and other cellular components that are not required for protein production are removed, leaving only the protein production machinery and the mitochondria to drive the reaction. During our lysate completion steps, the additional components needed for protein production (amino acids, cofactors, etc.) are added to produce something that functions like a cell, but without the constraints of a living system - all that's needed is the DNA that codes for the desired protein!

Concentration:

- The concentration of our recombinant proteins is measured using the absorbance at 280nm.
- The protein's absorbance will be measured in several dilutions and is measured against its specific reference buffer.
- We use the Expasy's ProtParam tool to determine the absorption coefficient of each protein.

Purification:

Two step purification of proteins expressed in Almost Living Cell-Free Expression System (ALiCE®):

1. In a first purification step, the protein is purified from the cleared cell lysate using StrepTag capture material. Eluate fractions are analyzed by SDS-PAGE.

Product Details

2. Protein containing fractions of the best purification are subjected to second purification step through size exclusion chromatography. Eluate fractions are analyzed by SDS-PAGE and Western blot.

Purity: >80 % as determined by SDS PAGE, Size Exclusion Chromatography and Western Blot.

Endotoxin Level: Low Endotoxin less than 1 EU/mg (< 0.1 ng/mg)

Grade: Crystallography grade

Target Details

Target: FLCN

Alternative Name: FLCN ([FLCN Products](#))

Target Type: Amino Acid

Background: Folliculin (BHD skin lesion fibrofolliculoma protein) (Birt-Hogg-Dube syndrome protein),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:31704029, PubMed:31672913, PubMed:34381247, PubMed:32612235, 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:31704029, PubMed:31672913, 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:31704029, PubMed:31672913, 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

Target Details

(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). {ECO:0000250|UniProtKB:Q8QZS3, ECO:0000269|PubMed:17028174, ECO:0000269|PubMed:18663353, ECO:0000269|PubMed:21209915, ECO:0000269|PubMed:24081491, ECO:0000269|PubMed:24095279, ECO:0000269|PubMed:24448649, ECO:0000269|PubMed:25126726, ECO:0000269|PubMed:27072130, ECO:0000269|PubMed:27113757, ECO:0000269|PubMed:30733432, ECO:0000269|PubMed:31272105, ECO:0000269|PubMed:31672913, ECO:0000269|PubMed:31704029, ECO:0000269|PubMed:32612235, ECO:0000269|PubMed:34381247, ECO:0000269|PubMed:36103527, ECO:0000269|PubMed:37079666}.

Molecular Weight: 64.5 kDa

UniProt: [Q8NFG4](#)

Pathways: [Cell-Cell Junction Organization](#)

Application Details

Application Notes: In addition to the applications listed above we expect the protein to work for functional studies as well. As the protein has not been tested for functional studies yet we cannot offer a guarantee though.

Comment: ALiCE®, our Almost Living Cell-Free Expression System is based on a lysate obtained from *Nicotiana tabacum* c.v.. This contains all the protein expression machinery needed to produce even the most difficult-to-express proteins, including those that require post-translational modifications.

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Restrictions: For Research Use only

Handling

Format: Liquid

Buffer: The buffer composition is at the discretion of the manufacturer. If you have a special request, please contact us.

Handling Advice: Avoid repeated freeze-thaw cycles.

Storage: -80 °C

Storage Comment: Store at -80°C.

Expiry Date: Unlimited (if stored properly)



Image 1. „Crystallography Grade“ protein due to multi-step, protein-specific purification process