

AFG3L2 Polyclonal Antibody
Catalog # AP74280**Specification**

AFG3L2 Polyclonal Antibody - Product Information

Application	WB
Primary Accession	Q9Y4W6
Reactivity	Human
Host	Rabbit
Clonality	Polyclonal

AFG3L2 Polyclonal Antibody - Additional Information**Gene ID** 10939**Other Names**

AFG3-like protein 2 (EC 3.4.24.-) (Paraplegin-like protein)

Dilution

WB~~WB 1:500-2000, ELISA 1:10000-20000

Format

Liquid in PBS containing 50% glycerol, 0.5% BSA and 0.09% (W/V) sodium azide.

Storage Conditions

-20°C

AFG3L2 Polyclonal Antibody - Protein Information**Name** AFG3L2 {ECO:0000303|PubMed:10395799, ECO:0000312|HGNC:HGNC:315}**Function**

Catalytic component of the m-AAA protease, a protease that plays a key role in proteostasis of inner mitochondrial membrane proteins, and which is essential for axonal and neuron development (PubMed:19748354, PubMed:28396416, PubMed:29932645, PubMed:30683687, PubMed:31327635, PubMed:37917749, PubMed:38157846). AFG3L2 possesses both ATPase and protease activities: the ATPase activity is required to unfold substrates, threading them into the internal proteolytic cavity for hydrolysis into small peptide fragments (PubMed:19748354, PubMed:31327635). The m-AAA protease carries out quality control in the inner membrane of the mitochondria by mediating degradation of mistranslated or misfolded polypeptides (PubMed:<a

[26504172](http://www.uniprot.org/citations/26504172), PubMed: [30683687](http://www.uniprot.org/citations/30683687), PubMed: [34718584](http://www.uniprot.org/citations/34718584)). The m-AAA protease complex also promotes the processing and maturation of mitochondrial proteins, such as MRPL32/bL32m, PINK1 and SP7 (PubMed: [22354088](http://www.uniprot.org/citations/22354088), PubMed: [29932645](http://www.uniprot.org/citations/29932645), PubMed: [30252181](http://www.uniprot.org/citations/30252181)). Mediates protein maturation of the mitochondrial ribosomal subunit MRPL32/bL32m by catalyzing the cleavage of the presequence of MRPL32/bL32m prior to assembly into the mitochondrial ribosome (PubMed: [29932645](http://www.uniprot.org/citations/29932645)). Required for SPG7 maturation into its active mature form after SPG7 cleavage by mitochondrial-processing peptidase (MPP) (PubMed: [30252181](http://www.uniprot.org/citations/30252181)). Required for the maturation of PINK1 into its 52kDa mature form after its cleavage by mitochondrial- processing peptidase (MPP) (PubMed: [22354088](http://www.uniprot.org/citations/22354088)). Acts as a regulator of calcium in neurons by mediating degradation of SMDT1/EMRE before its assembly with the uniporter complex, limiting the availability of SMDT1/EMRE for MCU assembly and promoting efficient assembly of gatekeeper subunits with MCU (PubMed: [27642048](http://www.uniprot.org/citations/27642048), PubMed: [28396416](http://www.uniprot.org/citations/28396416)). Promotes the proteolytic degradation of GHITM upon hyperpolarization of mitochondria: progressive GHITM degradation leads to respiratory complex I degradation and broad reshaping of the mitochondrial proteome by AFG3L2 (PubMed: [35912435](http://www.uniprot.org/citations/35912435)). Also acts as a regulator of mitochondrial glutathione homeostasis by mediating cleavage and degradation of SLC25A39 (PubMed: [37917749](http://www.uniprot.org/citations/37917749), PubMed: [38157846](http://www.uniprot.org/citations/38157846)). SLC25A39 cleavage is prevented when SLC25A39 binds iron-sulfur (PubMed: [37917749](http://www.uniprot.org/citations/37917749), PubMed: [38157846](http://www.uniprot.org/citations/38157846)). Involved in the regulation of OMA1-dependent processing of OPA1 (PubMed: [17615298](http://www.uniprot.org/citations/17615298), PubMed: [29545505](http://www.uniprot.org/citations/29545505), PubMed: [30252181](http://www.uniprot.org/citations/30252181), PubMed: [30683687](http://www.uniprot.org/citations/30683687), PubMed: [32600459](http://www.uniprot.org/citations/32600459)). May act by mediating processing of OMA1 precursor, participating in OMA1 maturation (PubMed: [29545505](http://www.uniprot.org/citations/29545505)).

Cellular Location

Mitochondrion inner membrane; Multi-pass membrane protein

Tissue Location

Ubiquitous. Highly expressed in the cerebellar Purkinje cells.

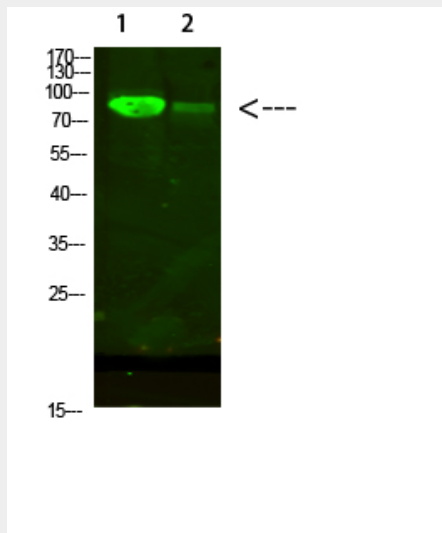
AFG3L2 Polyclonal Antibody - Protocols

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

- [Western Blot](#)
- [Blocking Peptides](#)
- [Dot Blot](#)
- [Immunohistochemistry](#)
- [Immunofluorescence](#)

- [Immunoprecipitation](#)
- [Flow Cytometry](#)
- [Cell Culture](#)

AFG3L2 Polyclonal Antibody - Images



Western Blot analysis of 1,mouse-heart 2,293T cells using primary antibody diluted at 1:500(4°C overnight). Secondary antibody □Goat Anti-rabbit IgG IRDye 800(diluted at 1:5000, 25°C, 1 hour)

AFG3L2 Polyclonal Antibody - Background

ATP-dependent protease which is essential for axonal and neuron development. In neurons, mediates degradation of SMDT1/EMRE before its assembly with the uniporter complex, limiting the availability of SMDT1/EMRE for MCU assembly and promoting efficient assembly of gatekeeper subunits with MCU (PubMed:27642048). Required for the maturation of paraplegin (SPG7) after its cleavage by mitochondrial-processing peptidase (MPP), converting it into a proteolytically active mature form (By similarity).