

Datasheet for ABIN7552485
ATG4D Protein (AA 1-474) (His tag)



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Overview

Quantity:	1 mg
Target:	ATG4D
Protein Characteristics:	AA 1-474
Origin:	Human
Source:	HEK-293 Cells
Protein Type:	Recombinant
Purification tag / Conjugate:	This ATG4D protein is labelled with His tag.

Product Details

Purpose:	Custom-made recombinant ATG4D Protein expressed in mammalian cells.
Sequence:	<p>MNSVSPAAAQ YRSSPEDAR RRPEARPRG PRGPDNGLG PSGASGPALG SPGAGPSEPD EVDKFKAKFL TAWNNVKYGW VVKSRTSFSK ISSIHLGRR YRFEGEDIQ RFQRDFVSRL WLTYRRDFPP LPGGCLTSDC GWGCMRSGQ MMLAQLLLLH FLPRDWTWAE GMGLGPPELS GSASPSRYHG PARWMPPRWA QGAPELEQER RHRQIVSWFA DHPRAPFGLH RLVELGQSSG KKAGDWYGPS LVAHILRKAV ESCSDVTRLV VYVSQDCTVY KADVARLVAR PDPTAEWKSV VILVPVRLGG ETLNPVYVPC VKELLRCELC LGIMGKPRH SLYFIGYQDD FLLYLDPHYC QPTVDVSQAD FPLESFHCTS PRKMAFAKMD PSCTVGFYAG DRKEFETLCS ELTRVLSSSS ATERYPMFTL AEGHAQDHSL DDLCSQLAQP TLRLPRTGRL LRAKRPSSD FVFL Sequence without tag. The proposed Purification-Tag is based on experiences 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.</p>
Specificity:	If you are looking for a specific domain and are interested in a partial protein or a different

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isoform, please contact us regarding an individual offer.

Characteristics:

Key Benefits:

- Made to order protein - from design to production - by highly experienced protein experts.
- Protein expressed in mammalian cells and purified in one-step affinity chromatography
- The optimized expression system ensures reliability for intracellular, secreted and transmembrane proteins.
- 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 try to ensure that you receive soluble protein.

If you are not interested in a full length protein, please contact us for individual protein fragments.

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.

Purity:

> 90 % as determined by Bis-Tris PAGE, anti-tag ELISA, Western Blot and analytical SEC (HPLC)

Grade:

custom-made

Target Details

Target:

ATG4D

Alternative Name:

ATG4D ([ATG4D Products](#))

Background:

Cysteine protease ATG4D (EC 3.4.22.-) (AUT-like 4 cysteine endopeptidase) (Autophagy-related cysteine endopeptidase 4) (Autophagin-4) (Autophagy-related protein 4 homolog D) (HsAPG4D) [Cleaved into: Cysteine protease ATG4D, mitochondrial],FUNCTION: [Cysteine protease ATG4D]: Cysteine protease that plays a key role in autophagy by mediating both proteolytic activation and delipidation of ATG8 family proteins (PubMed:21177865, PubMed:29458288, PubMed:30661429). The protease activity is required for proteolytic activation of ATG8 family proteins: cleaves the C-terminal amino acid of ATG8 proteins MAP1LC3 and GABARAPL2, to reveal a C-terminal glycine (PubMed:21177865). Exposure of the glycine at the C-terminus is essential for ATG8 proteins conjugation to phosphatidylethanolamine (PE) and insertion to membranes, which is necessary for autophagy (By similarity). In addition to the protease activity, also mediates delipidation of ATG8 family proteins (PubMed:29458288, PubMed:33909989). Catalyzes delipidation of PE-conjugated forms of ATG8 proteins during

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macroautophagy (PubMed:29458288, PubMed:33909989). Also involved in non-canonical autophagy, a parallel pathway involving conjugation of ATG8 proteins to single membranes at endolysosomal compartments, by catalyzing delipidation of ATG8 proteins conjugated to phosphatidylserine (PS) (PubMed:33909989). ATG4D plays a role in the autophagy-mediated neuronal homeostasis in the central nervous system (By similarity). Compared to other members of the family (ATG4A, ATG4B or ATG4C), constitutes the major protein for the delipidation activity, while it promotes weak proteolytic activation of ATG8 proteins (By similarity). Involved in phagophore growth during mitophagy independently of its protease activity and of ATG8 proteins: acts by regulating ATG9A trafficking to mitochondria and promoting phagophore-endoplasmic reticulum contacts during the lipid transfer phase of mitophagy (PubMed:33773106). {ECO:0000250|UniProtKB:Q8BGV9, ECO:0000250|UniProtKB:Q9Y4P1, ECO:0000269|PubMed:21177865, ECO:0000269|PubMed:29458288, ECO:0000269|PubMed:30661429, ECO:0000269|PubMed:33773106, ECO:0000269|PubMed:33909989}., FUNCTION: [Cysteine protease ATG4D, mitochondrial]: Plays a role as an autophagy regulator that links mitochondrial dysfunction with apoptosis. The mitochondrial import of ATG4D during cellular stress and differentiation may play important roles in the regulation of mitochondrial physiology, ROS, mitophagy and cell viability. {ECO:0000269|PubMed:19549685, ECO:0000269|PubMed:22441018}.

Molecular Weight:	52.9 kDa
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UniProt:	Q86TLO
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Pathways:	Autophagy
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Application Details

Application Notes:	We expect the protein to work for functional studies. As the protein has not been tested for functional studies yet we cannot offer a guarantee though.
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Restrictions:	For Research Use only
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Handling

Format:	Liquid
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Buffer:	The buffer composition is at the discretion of the manufacturer.
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Handling Advice:	Avoid repeated freeze-thaw cycles.
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Handling

Storage: -80 °C

Storage Comment: Store at -80°C.

Expiry Date: 12 months