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# ATG4D Antibody (N-term) Blocking peptide
**Synthetic peptide**
**Catalog # BP11448a**

## Specification

### ATG4D Antibody (N-term) Blocking peptide - Product Information

Primary Accession Q86TL0

### ATG4D Antibody (N-term) Blocking peptide - Additional Information

**Gene ID** 84971

**Other Names**
Cysteine protease ATG4D, 3422-, AUT-like 4 cysteine endopeptidase, Autophagin-4, Autophagy-related cysteine endopeptidase 4, Autophagy-related protein 4 homolog D, Cysteine protease ATG4D, mitochondrial, ATG4D, APG4D, AUTL4

**Format**
Peptides are lyophilized in a solid powder format. Peptides can be reconstituted in solution using the appropriate buffer as needed.

**Storage**
Maintain refrigerated at 2-8°C for up to 6 months. For long term storage store at -20°C.

**Precautions**
This product is for research use only. Not for use in diagnostic or therapeutic procedures.

### ATG4D Antibody (N-term) Blocking peptide - Protein Information

**Name** ATG4D {ECO:0000303|PubMed:19549685, ECO:0000312|HGNC:HGNC:20789}

**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:<a href="http://www.uniprot.org/citations/21177865" target="_blank">21177865</a>, PubMed:<a href="http://www.uniprot.org/citations/29458288" target="_blank">29458288</a>, PubMed:<a href="http://www.uniprot.org/citations/30661429" target="_blank">30661429</a>). 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:<a href="http://www.uniprot.org/citations/21177865" target="_blank">21177865</a>). 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:<a href="http://www.uniprot.org/citations/29458288" target="_blank">29458288</a>, PubMed:<a href="http://www.uniprot.org/citations/33909989" target="_blank">33909989</a>). Catalyzes delipidation of PE-conjugated forms of ATG8 proteins during macroautophagy (PubMed:<a href="http://www.uniprot.org/citations/29458288" target="_blank">29458288</a>, PubMed:<a href="http://www.uniprot.org/citations/33909989" target="_blank">33909989</a>).

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:<a href="http://www.uniprot.org/citations/33909989" target="_blank">33909989</a>). 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:<a href="http://www.uniprot.org/citations/33773106" target="_blank">33773106</a>).

**Cellular Location**
[Cysteine protease ATG4D]: Cytoplasm

**Tissue Location**
Widely expressed in testis.

## ATG4D Antibody (N-term) Blocking peptide - Protocols

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

- Blocking Peptides

## ATG4D Antibody (N-term) Blocking peptide - Images

## ATG4D Antibody (N-term) Blocking peptide - Background

Autophagy is the process by which endogenous proteins anddamaged organelles are destroyed intracellularly. Autophagy ispostulated to be essential for cell homeostasis and cell remodelingduring differentiation, metamorphosis, non-apoptotic cell death,and aging. Reduced levels of autophagy have been described in somemalignant tumors, and a role for autophagy in controlling theunregulated cell growth linked to cancer has been proposed. Thisgene encodes a member of the autophagin protein family. The encodedprotein is also designated as a member of the C-54 family ofcysteine proteases.

## ATG4D Antibody (N-term) Blocking peptide - References

Betin, V.M., et al. J. Cell. Sci. 122 (PT 14), 2554-2566 (2009) :Lamesch, P., et al. Genomics 89(3):307-315(2007)Marino, G., et al. J. Biol. Chem. 278(6):3671-3678(2003)