

ATG3 Antibody (N-term) Blocking peptide
Synthetic peptide
Catalog # BP1807a**Specification**

ATG3 Antibody (N-term) Blocking peptide - Product InformationPrimary Accession [Q9NT62](#)**ATG3 Antibody (N-term) Blocking peptide - Additional Information**

Gene ID 64422

Other Names

Ubiquitin-like-conjugating enzyme ATG3, 632-, Autophagy-related protein 3, APG3-like, hApg3, Protein PC3-96, ATG3, APG3, APG3L

Target/Specificity

The synthetic peptide sequence used to generate the antibody [AP1807a](/product/products/AP1807a) was selected from the N-term region of human Autophagy APG3L. A 10 to 100 fold molar excess to antibody is recommended. Precise conditions should be optimized for a particular assay.

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.

ATG3 Antibody (N-term) Blocking peptide - Protein InformationName ATG3 ([HGNC:20962](#))

Synonyms APG3, APG3L

Function

E2 conjugating enzyme that catalyzes the covalent conjugation of the C-terminal Gly of ATG8-like proteins (GABARAP, GABARAPL1, GABARAPL2 or MAP1LC3A) to the amino group of phosphatidylethanolamine (PE)-containing lipids in the membrane resulting in membrane-bound ATG8-like proteins which is one of the key steps in the development of autophagic isolation membranes during autophagosome formation (PubMed:[24191030](http://www.uniprot.org/citations/24191030), PubMed:[37252361](http://www.uniprot.org/citations/37252361), PubMed:[33446636](http://www.uniprot.org/citations/33446636)). Cycles back and forth between binding to ATG7 for loading with the ATG8-like proteins and binding to E3

enzyme, composed of ATG12, ATG5 and ATG16L1 to promote ATG8-like proteins lipidation (PubMed:12207896, PubMed:24186333, PubMed:11825910, PubMed:12890687, PubMed:16704426). Also plays a role as a membrane curvature sensor that facilitates LC3/GABARAP lipidation by sensing local membrane stress associated with lipid-packing defects as occurs with high molar proportions of conical lipids or strident membrane curvature (By similarity). Interacts with negatively-charged membranes promoting membrane tethering and enhancing LC3/GABARAP lipidation (PubMed:29142222). Also acts as an autocatalytic E2-like enzyme by catalyzing the conjugation of ATG12 to itself in an ATG7-dependent manner, this complex thus formed, plays a role in mitochondrial homeostasis but not in autophagy (By similarity). ATG12- ATG3 conjugation promotes late endosome to lysosome trafficking and basal autophagosome maturation via its interaction with PDCD6IP (By similarity). ATG12-ATG3 conjugate is also formed upon vaccinia virus infection, leading to the disruption of the cellular autophagy which is not necessary for vaccinia survival and proliferation (By similarity). Promotes primary ciliogenesis by removing OFD1 from centriolar satellites via the autophagic pathway (By similarity).

Cellular Location

Cytoplasm.

Tissue Location

Widely expressed, with a highest expression in heart, skeletal muscle, kidney, liver and placenta

ATG3 Antibody (N-term) Blocking peptide - Protocols

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

- [Blocking Peptides](#)

ATG3 Antibody (N-term) Blocking peptide - Images**ATG3 Antibody (N-term) Blocking peptide - Background**

Macroautophagy is the major inducible pathway for the general turnover of cytoplasmic constituents in eukaryotic cells, it is also responsible for the degradation of active cytoplasmic enzymes and organelles during nutrient starvation. Macroautophagy involves the formation of double-membrane bound autophagosomes which enclose the cytoplasmic constituent targeted for degradation in a membrane bound structure, which then fuse with the lysosome (or vacuole) releasing a single-membrane bound autophagic bodies which are then degraded within the lysosome (or vacuole). APG3L is an E2-like conjugating enzyme facilitating covalent binding of APG8 (MAP1LC3) to phosphatidylethanolamine (PE). APG7 (an E1-like enzyme) facilitates this reaction by forming an E1-E2 complex with APG3. Formation of the PE conjugate is essential for autophagy.

ATG3 Antibody (N-term) Blocking peptide - References

Baehrecke EH. Nat Rev Mol Cell Biol. 6(6):505-10. (2005) Lum JJ, et al. Nat Rev Mol Cell Biol. 6(6):439-48. (2005) Greenberg JT. Dev Cell. 8(6):799-801. (2005) Levine B. Cell. 120(2):159-62. (2005) Shintani T and Klionsky DJ. Science. 306(5698):990-5. (2004)