10320 Camino Santa Fe, Suite G
San Diego, CA 92121
Tel: 858.875.1900 Fax: 858.875.1999

ATG7 Antibody (N-term)

Purified Rabbit Polyclonal Antibody (Pab)
Catalog # AP1813a

Specification

ATG7 Antibody (N-term) - Product Information

Application	**WB, IHC-P,E**
Primary Accession	O95352
Other Accession	Q641Y5, Q9D906
Reactivity	**Human, Mouse**
Predicted	**Rat**
Host	**Rabbit**
Clonality	**Polyclonal**
Isotype	**Rabbit IgG**
Antigen Region	**22-51**

ATG7 Antibody (N-term) - Additional Information

Gene ID 10533

Other Names
Ubiquitin-like modifier-activating enzyme ATG7, ATG12-activating enzyme E1 ATG7, Autophagy-related protein 7, APG7-like, hAGP7, Ubiquitin-activating enzyme E1-like protein, ATG7, APG7L

Target/Specificity
This ATG7 antibody is generated from rabbits immunized with a KLH conjugated synthetic peptide between 22-51 amino acids from the N-terminal region of human ATG7.

Dilution
WB~~1:1000
IHC-P~~1:50~100

Format
Purified polyclonal antibody supplied in PBS with 0.09% (W/V) sodium azide. This antibody is purified through a protein A column, followed by peptide affinity purification.

Storage
Maintain refrigerated at 2-8°C for up to 2 weeks. For long term storage store at -20°C in small aliquots to prevent freeze-thaw cycles.

Precautions
ATG7 Antibody (N-term) is for research use only and not for use in diagnostic or therapeutic procedures.

ATG7 Antibody (N-term) - Protein Information

Name ATG7

Synonyms APG7L

Function E1-like activating enzyme involved in the 2 ubiquitin-like systems required for cytoplasm to vacuole transport (Cvt) and autophagy. Activates ATG12 for its conjugation with ATG5 as well as the ATG8 family proteins for their conjugation with phosphatidylethanolamine. Both systems are needed for the ATG8 association to Cvt vesicles and autophagosomes membranes. Required for autophagic death induced by caspase-8 inhibition. Facilitates LC3-I lipidation with phosphatidylethanolamine to form LC3-II which is found on autophagosomal membranes (PubMed:34161705). Required for mitophagy which contributes to regulate mitochondrial quantity and quality by eliminating the mitochondria to a basal level to fulfill cellular energy requirements and preventing excess ROS production. Modulates p53/TP53 activity to regulate cell cycle and survival during metabolic stress. Also plays a key role in the maintenance of axonal homeostasis, the prevention of axonal degeneration, the maintenance of hematopoietic stem cells, the formation of Paneth cell granules, as well as in adipose differentiation. Plays a role in regulating the liver clock and glucose metabolism by mediating the autophagic degradation of CRY1 (clock repressor) in a time-dependent manner (By similarity).

Cellular Location
Cytoplasm. Preautophagosomal structure. Note=Localizes also to discrete punctae along the ciliary axoneme and to the base of the ciliary axoneme

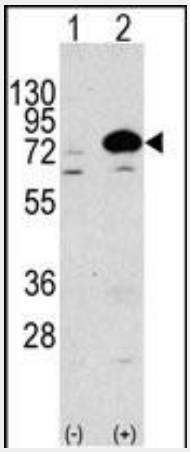
Tissue Location
Widely expressed, especially in kidney, liver, lymph nodes and bone marrow.

ATG7 Antibody (N-term) - Protocols

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

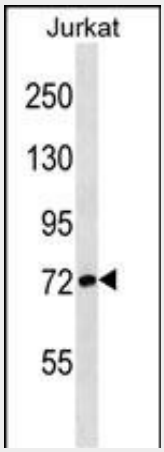
- Western Blot
- Blocking Peptides
- Dot Blot
- Immunohistochemistry
- Immunofluorescence
- Immunoprecipitation
- Flow Cytomety
- Cell Culture

ATG7 Antibody (N-term) - Images

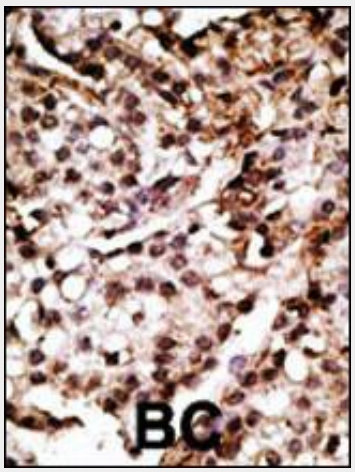


Western blot analysis of anti-Autophagy APG7L Antibody (N-term) (Cat. #AP1813a) in 293 cell

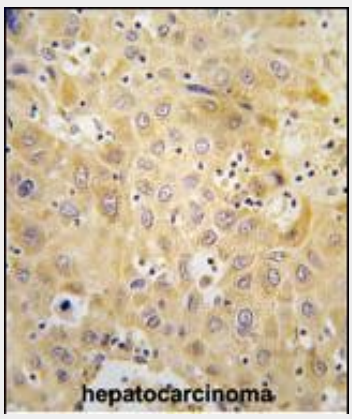
line lysates transiently transfected with the ATG7 gene (3ug/lane). APG7L (arrow) was detected using the purified Pab.



APG7L Antibody (E37) (Cat. #AP1813a) western blot analysis in Jurkat cell line lysates (35ug/lane).This demonstrates the APG7L antibody detected the APG7L protein (arrow).



Formalin-fixed and paraffin-embedded human cancer tissue reacted with the primary antibody, which was peroxidase-conjugated to the secondary antibody, followed by AEC staining. This data demonstrates the use of this antibody for immunohistochemistry; clinical relevance has not been evaluated. BC = breast carcinoma; HC = hepatocarcinoma.



Formalin-fixed and paraffin-embedded human hepatocarcinoma tissue reacted with Autophagy APG7L Antibody (N-term) (Cat.#AP1813a), which was peroxidase-conjugated to the secondary antibody, followed by DAB staining. This data demonstrates the use of this antibody for

immunohistochemistry; clinical relevance has not been evaluated.

ATG7 Antibody (N-term) - 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). APG7 functions as an E1 enzyme essential for multisubstrates such as GABARAPL1 and ATG12. 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.

ATG7 Antibody (N-term) - 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) Tanida I., et al. Biochem. Biophys. Res. Commun. 292:256-262(2002) Tanida I., et al. J. Biol. Chem. 277:13739-13744(2002)

ATG7 Antibody (N-term) - Citations

- The effect of fluoxetine on astrocyte autophagy flux and injured mitochondria clearance in a mouse model of depression.
- Plin4-Dependent Lipid Droplets Hamper Neuronal Mitophagy in the MPTP/p-Induced Mouse Model of Parkinson's Disease.
- HMGA2 plays an important role in Cr (VI)-induced autophagy.
- Down-regulation of Risa improves insulin sensitivity by enhancing autophagy.
- Eradication of intracellular Salmonella enterica serovar Typhimurium with a small-molecule, host cell-directed agent.