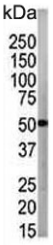
Autophagin-1 Antibody / ATG4B Polyclonal Antibody (F54714)

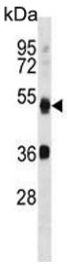
Catalog No.	Formulation	Size
F54714-0.4ML	In 1X PBS, pH 7.4, with 0.09% sodium azide	0.4 ml
F54714-0.08ML	In 1X PBS, pH 7.4, with 0.09% sodium azide	0.08 ml

Bulk quote request

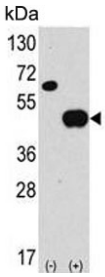
Species Reactivity	Human, Mouse
Format	Purified
Host	Rabbit
Clonality	Polyclonal (rabbit origin)
Isotype	Rabbit Ig
Purity	Purified
UniProt	Q9Y4P1
Localization	Cytoplasmic
Applications	Immunohistochemistry (FFPE): 1:25 Western blot: 1:500-1:2000
Limitations	This Autophagin-1 Antibody / ATG4B Polyclonal Antibody is available for research use only.



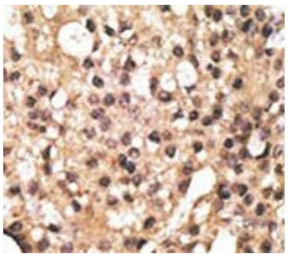
Autophagin-1 Antibody WB Analysis of Human CCRF-CEM Cell Lysate. Western blot analysis of human CCRF-CEM cell lysate using ATG4B Polyclonal Antibody. A single immunoreactive band is detected near 50 kDa, within the reported molecular weight range of 37-52 kDa for ATG4B.



Autophagin-1 Antibody WB Analysis of Mouse Cerebellum Tissue. Western blot analysis of mouse cerebellum tissue lysate using ATG4B Polyclonal Antibody. An immunoreactive band is visible near the 55 kDa marker, slightly above the expected 37-52 kDa range reported for ATG4B. The identity of the detected band has not been independently established.



Autophagin-1 Antibody WB Analysis of Non-Transfected and Transfected Human 293 Cells. Western blot analysis of non-transfected (lane 1) and transfected (lane 2) human 293 cell lysates using ATG4B Polyclonal Antibody. An immunoreactive band near 50 kDa is prominently detected in the transfected sample, while the corresponding signal is substantially weaker or undetectable in the non-transfected sample. This comparison supports recognition of the expressed protein under the tested conditions.



Autophagin-1 Antibody IHC Staining of Human Breast Cancer Tissue. Immunohistochemical analysis of FFPE human breast cancer tissue using ATG4B Polyclonal Antibody. Brown DAB immunoreactivity is observed in tumor-associated cells, with a predominantly cytoplasmic distribution and heterogeneous staining across the tissue section. Heat-induced epitope retrieval was performed by steaming sections in pH 6 citrate buffer for 20 minutes, followed by cooling before antibody incubation.

Description

Autophagin-1 Antibody / ATG4B Polyclonal Antibody targets autophagy-related cysteine peptidase 4B (ATG4B), a proteolytic enzyme that regulates the processing and membrane association of ATG8-family proteins during macroautophagy. Also known as autophagin-1, ATG4B belongs to a family of cysteine proteases involved in maintaining the balance between lipidated and nonlipidated forms of LC3 and related proteins. These reactions contribute to the formation, maturation, and turnover of autophagosomes, the double-membrane structures responsible for delivering intracellular material to lysosomes for degradation.

ATG4B participates in the initial maturation of newly synthesized ATG8-family proteins, including MAP1LC3B, GABARAP, and GABARAPL2. These proteins contain C-terminal extensions that must be removed to expose a conserved glycine residue. ATG4B-mediated cleavage generates substrates that can undergo a series of conjugation reactions, ultimately attaching them to phosphatidylethanolamine within autophagosomal membranes. Lipidated ATG8-family proteins contribute to membrane organization and interactions with autophagy receptors that recognize intracellular cargo.

In addition to its processing activity, ATG4B removes phosphatidylethanolamine from membrane-associated ATG8 proteins. This delipidation reaction helps recycle ATG8-family members and regulates their distribution between cytosolic and membrane-associated pools. Proper coordination of these opposing activities is important because premature delipidation can interfere with autophagosomal membrane development, while inadequate recycling may disrupt normal autophagic turnover.

ATG4B activity is influenced by cellular conditions and regulatory modifications. Oxidative signaling can alter the activity of ATG4-family proteases, providing a connection between reactive oxygen species and autophagy regulation. Protein phosphorylation and interactions with other regulatory factors may also influence ATG4B function. These mechanisms contribute to the coordination of autophagic membrane remodeling with nutrient availability, metabolic stress, and cellular damage.

Changes in ATG4B expression or activity have been investigated in cancer, neurodegenerative disorders, and conditions involving impaired intracellular clearance. However, the consequences of altered ATG4B function depend on the broader autophagy machinery and the physiological context. Measurements of LC3 lipidation alone do not necessarily establish changes in autophagic flux, since both autophagosome formation and degradation influence LC3 abundance. Autophagin-1 Antibody supports investigations into ATG8-family protein maturation, autophagosomal membrane dynamics, and the enzymatic regulation of intracellular recycling.

For an alternative reagent with knockout-supported Western blot validation and extensive human and rat sample testing,

explore our ATG4B Antibody (RQ6821).

Application Notes

The stated application concentrations are suggested starting points. Titration of the Autophagin-1 Antibody / ATG4B Polyclonal Antibody may be required due to differences in protocols and secondary/substrate sensitivity.

Immunogen

A portion of amino acids 16-45 from the human protein was used as the immunogen for the ATG4B / Autophagin-1 antibody.

Storage

Aliquot the ATG4B / Autophagin-1 antibody and store frozen at -20oC or colder. Avoid repeated freeze-thaw cycles.

Alternate Names

ATG4B antibody, Autophagy-related cysteine peptidase 4B antibody, Autophagy-related protein 4B antibody, Autophagy-related protease 4B antibody, ATG4 homolog B antibody, APG4B antibody, AUTL1 antibody, Autophagy-related cysteine endopeptidase 4B antibody, Cysteine protease ATG4B antibody, Autophagy-related 4B antibody

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