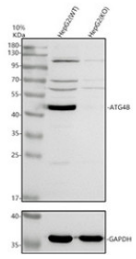
ATG4B Antibody / Autophagin-1 Polyclonal Antibody (RQ6821)

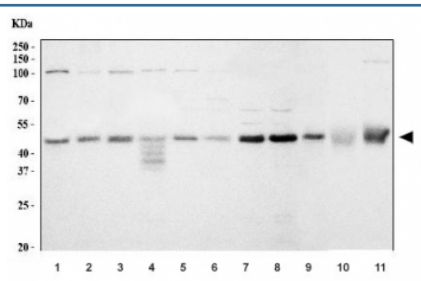
Catalog No.	Formulation	Size
RQ6821	0.5mg/ml if reconstituted with 0.2ml sterile DI water	100 ug

Bulk quote request

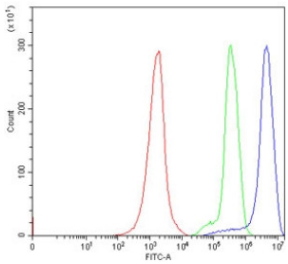
Species Reactivity	Human, Rat
Format	Antigen affinity purified
Host	Rabbit
Clonality	Polyclonal (rabbit origin)
Isotype	Rabbit IgG
Purity	Antigen affinity purified
Buffer	Lyophilized from 1X PBS with 2% Trehalose
UniProt	Q9Y4P1
Applications	Western blot: 1-2ug/ml Flow cytometry: 1-3ug/million cells Direct ELISA: 0.1-0.5ug/ml
Limitations	This ATG4B Antibody / Autophagin-1 Polyclonal Antibody is available for research use only.



ATG4B Antibody WB Analysis of Wild-Type and ATG4B Knockout Human HepG2 Cells. Western blot analysis of human HepG2 wild-type (WT, lane 1) and ATG4B knockout (KO, lane 2) whole-cell lysates using Autophagin-1 Polyclonal Antibody at 0.5 ug/ml. Each lane contained 30 ug of total protein separated by 10% SDS-PAGE under reducing conditions. A prominent immunoreactive band near 48 kDa is detected in WT lysate and is absent in the KO sample, supporting target-specific recognition of ATG4B, which has a predicted molecular weight of approximately 44 kDa. GAPDH serves as the loading control.



ATG4B Antibody WB Analysis of Human HeLa, 293T, HepG2, Jurkat, RT4, MCF7, MOLT4 and HEL Cells, Rat Brain and Liver, and Rat RH35 Cells. Western blot analysis of human HeLa (lane 1), 293T (lane 2), HepG2 (lane 3), Jurkat (lane 4), RT4 (lane 5), MCF7 (lane 6), MOLT4 (lane 7), and HEL (lane 8) cell lysates; rat brain (lane 9) and liver (lane 10) tissue lysates; and rat RH35 cell lysate (lane 11) using Autophagin-1 Polyclonal Antibody. Immunoreactive bands are detected within the approximately 37-52 kDa molecular weight range reported for ATG4B and its alternative isoforms. The identities of individual bands have not been established as specific isoforms.



ATG4B Antibody FACS Analysis of Human Jurkat Cells. Flow cytometry analysis of human Jurkat cells using Autophagin-1 Polyclonal Antibody at 1 ug per million cells following blocking with goat serum. The blue histogram represents antibody-stained cells, the green histogram represents the isotype control, and the red histogram represents unstained cells. The antibody-stained population exhibits a rightward fluorescence shift relative to both controls, supporting detection of ATG4B under the tested conditions.

Description

ATG4B Antibody / Autophagin-1 Polyclonal Antibody targets autophagy-related cysteine peptidase 4B (ATG4B), also known as autophagin-1, a cysteine protease involved in the regulation of macroautophagy. ATG4B belongs to the ATG4 family of proteases, which process members of the ATG8 protein family and regulate their association with autophagosomal membranes. Autophagy is a conserved cellular degradation pathway responsible for recycling cytoplasmic components, removing damaged organelles, and maintaining metabolic homeostasis during nutrient limitation and other forms of cellular stress.

ATG4B performs two distinct enzymatic functions during autophagy. Its first role is the proteolytic processing of newly synthesized ATG8-family proteins, including MAP1LC3B (LC3B). ATG4B cleaves these proteins near their C-termini to expose a conserved glycine residue required for subsequent conjugation to phosphatidylethanolamine. This lipidation reaction enables processed LC3 and related proteins to associate with developing autophagosomal membranes, where they participate in membrane expansion and cargo recruitment.

The second major function of ATG4B is the removal of phosphatidylethanolamine from lipidated ATG8-family proteins. This delipidation activity contributes to the recycling of LC3 and related proteins from autophagosomal membranes and helps regulate their membrane-associated abundance. The balance between initial proteolytic processing and subsequent delipidation is important for maintaining appropriate autophagic activity. Excessive or insufficient ATG4B activity can alter ATG8 lipidation dynamics and interfere with normal autophagosome development.

ATG4B activity is regulated through several mechanisms, including post-translational modifications, redox-sensitive processes, and interactions with other autophagy-associated proteins. Reactive oxygen species can influence ATG4 protease activity, linking autophagy regulation to cellular oxidative conditions. These regulatory mechanisms help coordinate membrane remodeling with the metabolic and environmental signals that influence autophagic activity.

Altered ATG4B expression or activity has been investigated in cancer biology, neurodegeneration, and disorders involving impaired cellular protein clearance. Its contribution to these processes depends on cellular context and the broader regulation of autophagic flux. Because LC3 processing and delipidation affect the interpretation of autophagy-associated molecular changes, understanding ATG4B function is important when investigating autophagosome formation and turnover. ATG4B Antibody supports research into autophagic membrane dynamics, ATG8-family protein processing, and the proteolytic mechanisms governing cellular recycling.

Explore additional antibodies targeting autophagy-related proteins, intracellular degradation pathways, and regulators of cellular homeostasis in our Cell Biology Antibodies collection.

Application Notes

Optimal dilution of the ATG4B Antibody / Autophagin-1 Polyclonal Antibody should be determined by the researcher.

Immunogen

Recombinant human protein (amino acids M1-L392) was used as the immunogen for the ATG4B antibody.

Storage

After reconstitution, the ATG4B antibody can be stored for up to one month at 4oC. For long-term, aliquot and store at -20oC. Avoid repeated freezing and thawing.

Alternate Names

Autophagin-1 antibody, Autophagy-related cysteine peptidase 4B antibody, Autophagy-related protein 4B antibody, Autophagy-related cysteine endopeptidase 4B antibody, ATG4 homolog B antibody, ATG4B cysteine protease antibody, Autophagy-related protease ATG4B antibody, ATG4B protein antibody, ATG4B autophagy regulator antibody, Cysteine protease ATG4B antibody

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