

Atg4b (I-13): sc-83371

BACKGROUND

Autophagy, a process that results in the lysosomal-dependent degradation of cytosolic compartments, is carried out by the autophagosome, which is a double-membrane vesicle whose formation is catalyzed by several autophagy-related gene (Atg) proteins. Atg4b (ATG4 autophagy related 4 homolog B), also known as APG4B, AUTL1 or KIAA0943, is a 393 amino acid protein that localizes to the cytoplasm and belongs to the peptidase C54 family. Expressed in heart, pancreas, brain, liver and skeletal muscle, Atg4b functions as a cysteine protease that cleaves the C-terminal part of target proteins, such as GABARAP and MAP1LC3, and plays an essential role in autophagy. Atg4b exists as multiple alternatively spliced isoforms and is functionally inhibited by N-ethylmaleimide.

REFERENCES

- Mariño, G., et al. 2003. Human autophagins, a family of cysteine proteases potentially implicated in cell degradation by autophagy. *J. Biol. Chem.* 278: 3671-3678.
- Hemelaar, J., et al. 2003. A single protease, Apg4B, is specific for the autophagy-related ubiquitin-like proteins GATE16, MAP1LC3, GABARAP, and Apg8L. *J. Biol. Chem.* 278: 51841-51850.
- Tanida, I., et al. 2004. HsAtg4B/HsApg4B/autophagin-1 cleaves the carboxyl-termini of three human Atg8 homologues and delipidates microtubule-associated protein light chain 3- and GABAA receptor-associated protein-phospholipid conjugates. *J. Biol. Chem.* 279: 36268-36276.
- Tanida, I., et al. 2004. Human light chain 3/MAP1LC3B is cleaved at its carboxyl-terminal MET121 to expose GLY120 for lipidation and targeting to autophagosomal membranes. *J. Biol. Chem.* 279: 47704-47710.
- Kabeya, Y., et al. 2004. LC3, GABARAP and GATE16 localize to autophagosomal membrane depending on form-II formation. *J. Cell Sci.* 117: 2805-2812.

CHROMOSOMAL LOCATION

Genetic locus: ATG4B (human) mapping to 2q37.3; Atg4b (mouse) mapping to 1 D.

SOURCE

Atg4b (I-13) is an affinity purified goat polyclonal antibody raised against a peptide mapping within an internal region of Atg4b of human origin.

PRODUCT

Each vial contains 200 µg IgG in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

Blocking peptide available for competition studies, sc-83371 P, (100 µg peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% BSA).

STORAGE

Store at 4° C, ****DO NOT FREEZE****. Stable for one year from the date of shipment. Non-hazardous. No MSDS required.

APPLICATIONS

Atg4b (I-13) is recommended for detection of Atg4b of mouse, rat and human origin by Western Blotting (starting dilution 1:200, dilution range 1:100-1:1000), immunoprecipitation [1-2 µg per 100-500 µg of total protein (1 ml of cell lysate)], immunofluorescence (starting dilution 1:50, dilution range 1:50-1:500) and solid phase ELISA (starting dilution 1:30, dilution range 1:30-1:3000); non cross-reactive with other Atg family members.

Atg4b (I-13) is also recommended for detection of Atg4b in additional species, including equine and canine.

Suitable for use as control antibody for Atg4b siRNA (h): sc-72584, Atg4b siRNA (m): sc-72585, Atg4b shRNA Plasmid (h): sc-72584-SH, Atg4b shRNA Plasmid (m): sc-72585-SH, Atg4b shRNA (h) Lentiviral Particles: sc-72584-V and Atg4b shRNA (m) Lentiviral Particles: sc-72585-V.

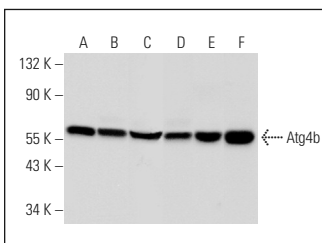
Molecular Weight of Atg4b isoforms 1/2/3/4/5: 44/53/31/37/43 kDa.

Positive Controls: Jurkat whole cell lysate: sc-2204, HeLa whole cell lysate: sc-2200 or mouse brain extract: sc-2253.

RECOMMENDED SECONDARY REAGENTS

To ensure optimal results, the following support (secondary) reagents are recommended: 1) Western Blotting: use donkey anti-goat IgG-HRP: sc-2020 (dilution range: 1:2000-1:100,000) or Cruz Marker™ compatible donkey anti-goat IgG-HRP: sc-2033 (dilution range: 1:2000-1:5000), Cruz Marker™ Molecular Weight Standards: sc-2035, TBS Blotto A Blocking Reagent: sc-2333 and Western Blotting Luminol Reagent: sc-2048. 2) Immunoprecipitation: use Protein A/G PLUS-Agarose: sc-2003 (0.5 ml agarose/2.0 ml). 3) Immunofluorescence: use donkey anti-goat IgG-FITC: sc-2024 (dilution range: 1:100-1:400) or donkey anti-goat IgG-TR: sc-2783 (dilution range: 1:100-1:400) with UltraCruz™ Mounting Medium: sc-24941.

DATA



Atg4b (I-13): sc-83371. Western blot analysis of Atg4b expression in Jurkat (A), HeLa (B), HEK293 (C) and MCF7 (D) whole cell lysates and human brain (E) and mouse brain (F) tissue extracts.

RESEARCH USE

For research use only, not for use in diagnostic procedures.

PROTOCOLS

See our web site at www.scbt.com or our catalog for detailed protocols and support products.