

Atg3 (Y-20): sc-70139

BACKGROUND

Atg3 (autophagy-related protein 3), also known as APG3-like, hAPG3 or PC3-96, is an E2-like enzyme that localizes to the cytoplasm and is expressed in a variety of tissues with predominant levels found in kidney, placenta, liver, heart and skeletal muscle. Atg3 catalyzes the formation of the Atg8-phosphatidylethanolamine (Atg8-PE) conjugate, a reaction that is essential for autophagy (a cellular process that allows for the degradation of organelles and bulk cellular proteins). The process of forming the Atg8-PE conjugate begins with the removal of the C-terminal arginine residue of Atg8 by Atg4, a cysteine protease. The, now exposed, glycine residue is then activated by Atg7 and is then transferred to Atg3 for the final conjugation to PE. This last step can be accelerated by the presence of the Atg12-Atg5 conjugate which functions similarly to an E3 enzyme.

REFERENCES

1. Tanida, I., Tanida-Miyake, E., Komatsu, M., Ueno, T. and Kominami, E. 2002. Human Apg3p/Aut1p homologue is an authentic E2 enzyme for multiple substrates, GATE-16, GABARAP, and MAP-LC3, and facilitates the conjugation of hApg12p to hApg5p. *J. Biol. Chem.* 277: 13739-13744.
2. Wu, B.X., Darden, A.G., Laser, M., Li, Y., Crosson, C.E., Hazard, E.S. and Ma, J.X. 2006. The rat Apg3p/Aut1p homolog is upregulated by ischemic preconditioning in the retina. *Mol. Vis.* 12: 1292-1302.
3. Yamada, Y., Suzuki, N.N., Fujioka, Y., Ichimura, Y., Ohsumi, Y. and Inagaki, F. 2006. Crystallization and preliminary X-ray analysis of Atg3. *Acta Crystallogr. Sect. F Struct. Biol. Cryst. Commun.* 62: 1016-1017.

CHROMOSOMAL LOCATION

Genetic locus: ATG3 (human) mapping to 3q13.2; Atg3 (mouse) mapping to 16 B5.

SOURCE

Atg3 (Y-20) is an affinity purified goat polyclonal antibody raised against a peptide mapping within an internal region of Atg3 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-70136 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.

PROTOCOLS

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

APPLICATIONS

Atg3 (Y-20) is recommended for detection of Atg3 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).

Atg3 (Y-20) is also recommended for detection of Atg3 in additional species, including equine, canine, bovine, porcine and avian.

Suitable for use as control antibody for Atg3 siRNA (h): sc-72582, Atg3 siRNA (m): sc-72583, Atg3 shRNA Plasmid (h): sc-72582-SH, Atg3 shRNA Plasmid (m): sc-72583-SH, Atg3 shRNA (h) Lentiviral Particles: sc-72582-V and Atg3 shRNA (m) Lentiviral Particles: sc-72583-V.

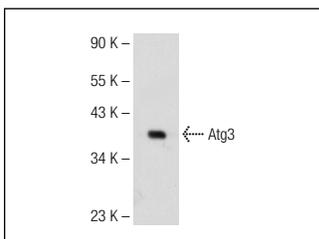
Molecular Weight of Atg3: 42 kDa.

Positive Controls: Jurkat whole cell lysate: sc-2204.

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



Atg3 (Y-20): sc-70139. Western blot analysis of Atg3 expression in Jurkat whole cell lysate.

RESEARCH USE

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


 MONOS
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Try **Atg3 (A-3): sc-393660** or **Atg3 (D-9): sc-393623**, our highly recommended monoclonal alternatives to Atg3 (Y-20).