SANTA CRUZ BIOTECHNOLOGY, INC.

Atg3 (A-3): sc-393660

SANTA CRUZ BIOTECHNOLOGY

The Power to Question

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.

CHROMOSOMAL LOCATION

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

SOURCE

Atg3 (A-3) is a mouse monoclonal antibody raised against amino acids 1-300 mapping at the N-terminus of Atg3 of human origin.

PRODUCT

Each vial contains 200 µg IgG_{2b} kappa light chain in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

Atg3 (A-3) is available conjugated to agarose (sc-393660 AC), 500 µg/0.25 ml agarose in 1 ml, for IP; to HRP (sc-393660 HRP), 200 µg/ml, for WB, IHC(P) and ELISA; to either phycoerythrin (sc-393660 PE), fluorescein (sc-393660 FITC), Alexa Fluor® 488 (sc-393660 AF488), Alexa Fluor® 546 (sc-393660 AF546), Alexa Fluor® 594 (sc-393660 AF594) or Alexa Fluor® 647 (sc-393660 AF647), 200 µg/ml, for WB (RGB), IF, IHC(P) and FCM; and to either Alexa Fluor® 680 (sc-393660 AF680) or Alexa Fluor® 790 (sc-393660 AF790), 200 µg/ml, for Near-Infrared (NIR) WB, IF and FCM.

APPLICATIONS

Atg3 (A-3) is recommended for detection of Atg3 of mouse, rat and human origin by Western Blotting (starting dilution 1:100, 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).

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.

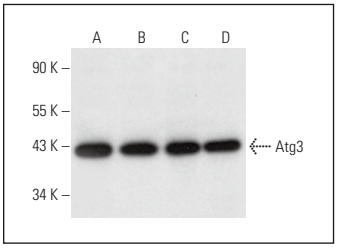
Molecular Weight of Atg3: 42 kDa.

Positive Controls: Atg3 (m): 293T Lysate: sc-118608, Jurkat whole cell lysate: sc-2204 or HeLa whole cell lysate: sc-2200.

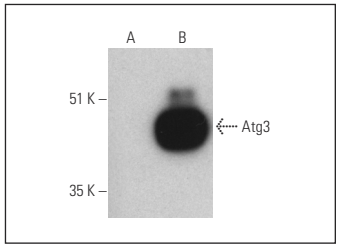
STORAGE

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

DATA



Atg3 (A-3): sc-393660. Western blot analysis of Atg3 expression in Jurkat (**A**), K-562 (**B**), HeLa (**C**) and HL-60 (**D**) whole cell lysates.



Atg3 (A-3) HRP: sc-393660 HRP. Western blot analysis of Atg3 expression in non-transfected: sc-117752 (**A**) and mouse Atg3 transfected: sc-118608 (**B**) 293T whole cell lysates.

SELECT PRODUCT CITATIONS

1. Huang, M., et al. 2018. Brd4 regulates the expression of essential autophagy genes and Keap1 in AML cells. Oncotarget 9: 11665-11676.
2. Gu, Y., et al. 2019. Mammalian Atg8 proteins regulate lysosome and autolysosome biogenesis through SNAREs. EMBO J. 38: e101994.
3. Zheng, Y., et al. 2019. Autophagy and apoptosis of porcine ovarian granulosa cells during follicular development. Animals 9: 1111.
4. Silva, B.J.A., et al. 2021. Autophagy-associated IL-15 production is involved in the pathogenesis of leprosy type 1 reaction. Cells 10: 2215.
5. Zhou, X., et al. 2021. Impaired placental mitophagy and oxidative stress are associated with dysregulated BNIP3 in preeclampsia. Sci. Rep. 11: 20469.
6. Liu, J., et al. 2022. Increased alveolar epithelial TRAF6 via autophagy-dependent TRIM37 degradation mediates particulate matter-induced lung metastasis. Autophagy 18: 971-989.
7. Ramalingam, M., et al. 2022. Autophagy signaling by neural-induced human adipose tissue-derived stem cell-conditioned medium during rotenone-induced toxicity in SH-SY5Y cells. Int. J. Mol. Sci. 23: 4193.
8. Zhou, L., et al. 2022. Farrerol alleviates myocardial ischemia/reperfusion injury by targeting macrophages and NLRP3. Front. Pharmacol. 13: 879232.
9. Musarra-Pizzo, M., et al. 2022. Direct cleavage of caspase-8 by herpes simplex virus 1 tegument protein US11. Sci. Rep. 12: 12317.
10. Cai, Y., et al. 2022. NBR1 mediates autophagic degradation of IRF3 to negatively regulate type I interferon production. Biochem. Biophys. Res. Commun. 623: 140-147.
11. Liu, G., et al. 2023. PHB2 binds to ERβ to induce the autophagy of bovine ovarian granulosa cells through mTOR phosphorylation. Theriogenology 198: 114-122.

RESEARCH USE

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