

Atg12 (C-6): sc-271688

BACKGROUND

Atg12 (autophagy-related protein 12), also known as APG12, APG12L, FBR93 or HAPG12, is a 140 amino acid protein that is ubiquitously expressed and belongs to the Atg12 family of proteins. Atg12 is a homolog of the yeast protein Apg12 that participates in autophagy. Autophagy is a membrane trafficking mechanism that delivers cytoplasmic cargo to the vacuole/lysosome for degradation and recycling. In yeast, autophagy requires a protein conjugation system consisting of Apg12 covalently bound at the carboxy terminal glycine to lysine 149 of APG5. Similarly in humans, Atg12 is essential for autophagy and localizes to the cytoplasm where it is covalently bound to APG5, a conjugation reaction that requires APG7, Atg10 and ATP. The Atg12-APG5 conjugate functions as an important regulator of the autophagic process and is required for the change in membrane morphology and development of autophagosomes. Due to alternative splicing events, two Atg12 isoforms exist.

CHROMOSOMAL LOCATION

Genetic locus: ATG12 (human) mapping to 5q22.3; Atg12 (mouse) mapping to 18 C.

SOURCE

Atg12 (C-6) is a mouse monoclonal antibody raised against amino acids 1-140 representing full length Atg12 of human origin.

PRODUCT

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

Atg12 (C-6) is available conjugated to agarose (sc-271688 AC), 500 µg/0.25 ml agarose in 1 ml, for IP; to HRP (sc-271688 HRP), 200 µg/ml, for WB, IHC(P) and ELISA; to either phycoerythrin (sc-271688 PE), fluorescein (sc-271688 FITC), Alexa Fluor[®] 488 (sc-271688 AF488), Alexa Fluor[®] 546 (sc-271688 AF546), Alexa Fluor[®] 594 (sc-271688 AF594) or Alexa Fluor[®] 647 (sc-271688 AF647), 200 µg/ml, for WB (RGB), IF, IHC(P) and FCM; and to either Alexa Fluor[®] 680 (sc-271688 AF680) or Alexa Fluor[®] 790 (sc-271688 AF790), 200 µg/ml, for Near-Infrared (NIR) WB, IF and FCM.

APPLICATIONS

Atg12 (C-6) is recommended for detection of Atg12 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 Atg12 siRNA (h): sc-72578, Atg12 siRNA (m): sc-72579, Atg12 shRNA Plasmid (h): sc-72578-SH, Atg12 shRNA Plasmid (m): sc-72579-SH, Atg12 shRNA (h) Lentiviral Particles: sc-72578-V and Atg12 shRNA (m) Lentiviral Particles: sc-72579-V.

Molecular Weight of Atg12 monomer: 21 kDa.

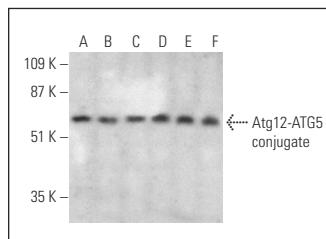
Molecular Weight of Atg12-ATG5 conjugate: 60 kDa.

Positive Controls: HCT-116 whole cell lysate: sc-364175, IMR-32 cell lysate: sc-2409 or Hep G2 cell lysate: sc-2227.

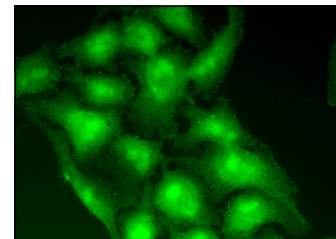
STORAGE

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

DATA



Atg12 (C-6) HRP: sc-271688 HRP. Direct western blot analysis of Atg12-ATG5 conjugate expression in IMR-32 (A), T98G (B), c4 (C), Neuro-2A (D), HCT-116 (E) and Hep G2 (F) whole cell lysates.



Atg12 (C-6): sc-271688. Immunofluorescence staining of formalin-fixed HeLa cells showing cytoplasmic and nuclear localization.

SELECT PRODUCT CITATIONS

- Jung, R., et al. 2013. Effect of immortalization-upregulated protein-2 (IMUP-2) on cell death of trophoblast. *Dev. Reprod.* 17: 99-109.
- Chen, K.D., et al. 2014. Interconnections between autophagy and the coagulation cascade in hepatocellular carcinoma. *Cell Death Dis.* 5: e1244.
- Ortiz, F., et al. 2015. Melatonin blunts the mitochondrial/NLRP3 connection and protects against radiation-induced oral mucositis. *J. Pineal Res.* 58: 34-49.
- Guo, W., et al. 2017. Down-regulated miR-23a contributes to the metastasis of cutaneous melanoma by promoting autophagy. *Theranostics* 7: 2231-2249.
- Xu, X., et al. 2018. Methamphetamine exposure triggers apoptosis and autophagy in neuronal cells by activating the C/EBPβ-related signaling pathway. *FASEB J.* 25: fj201701460RRR.
- Di Domenico, F., et al. 2019. Restoration of aberrant mTOR signaling by intranasal rapamycin reduces oxidative damage: focus on HNE-modified proteins in a mouse model of down syndrome. *Redox Biol.* 23: 101162.
- Fernandez-Gil, B.I., et al. 2019. Melatonin enhances cisplatin and radiation cytotoxicity in head and neck squamous cell carcinoma by stimulating mitochondrial ROS generation, apoptosis, and autophagy. *Oxid. Med. Cell. Longev.* 2019: 7187128.
- Stanga, D., et al. 2019. TRAPPC11 functions in autophagy by recruiting Atg2B-WIP14/WDR45 to preautophagosomal membranes. *Traffic* 20: 325-345.
- Jia, Z., et al. 2019. Fluorene-9-bisphenol exposure induces cytotoxicity in mouse oocytes and causes ovarian damage. *Ecotoxicol. Environ. Saf.* 180: 168-178.

RESEARCH USE

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

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