SANTA CRUZ BIOTECHNOLOGY, INC.

# ATG5 (C-1): sc-133158

SANTA CRUZ BIOTECHNOLOGY

*The Power to Question*

## BACKGROUND

In yeast, autophagy is an essential process for survival during nutrient starvation and cell differentiation. The process of autophagy is characterized as a non-selective degradation of cytoplasmic proteins into membrane stuctures called autophagosomes, and it is dependent on several proteins, including the autophagy proteins ATG5 (APG5) and APG7. Yeast Apg7 and the human homolog, APG7, share similarities with the ubiquitin-activating enzyme E1 in *Saccharomyces cerevisiae* and are likewise responsible for enzymatically activating the autophagy conjugation system. Apg5 and the human homolog, ATG5, also designated APG5, apoptosis-specific protein or APS, function as substrates for the autophagy protein Apg12. These proteins are covalently bonded together to form Apg12/ATG5 conjugates, which are required for the progression of autophagy.

## CHROMOSOMAL LOCATION

Genetic locus: ATG5 (human) mapping to 6q21; Atg5 (mouse) mapping to 10 B2.

## SOURCE

ATG5 (C-1) is a mouse monoclonal antibody raised against amino acids 1-275 representing full length ATG5 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.

ATG5 (C-1) is available conjugated to agarose (sc-133158 AC), 500 µg/0.25 ml agarose in 1 ml, for IP; to HRP (sc-133158 HRP), 200 µg/ml, for WB, IHC(P) and ELISA; to either phycoerythrin (sc-133158 PE), fluorescein (sc-133158 FITC), Alexa Fluor® 488 (sc-133158 AF488), Alexa Fluor® 546 (sc-133158 AF546), Alexa Fluor® 594 (sc-133158 AF594) or Alexa Fluor® 647 (sc-133158 AF647), 200 µg/ml, for WB (RGB), IF, IHC(P) and FCM; and to either Alexa Fluor® 680 (sc-133158 AF680) or Alexa Fluor® 790 (sc-133158 AF790), 200 µg/ml, for Near-Infrared (NIR) WB, IF and FCM.

## APPLICATIONS

ATG5 (C-1) is recommended for detection of ATG5 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), immunohistochemistry (including paraffin-embedded sections) (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 ATG5 siRNA (h): sc-41445, ATG5 siRNA (m): sc-41446, ATG5 shRNA Plasmid (h): sc-41445-SH, ATG5 shRNA Plasmid (m): sc-41446-SH, ATG5 shRNA (h) Lentiviral Particles: sc-41445-V and ATG5 shRNA (m) Lentiviral Particles: sc-41446-V.

Molecular Weight of human ATG5 long/short isoforms: 32/23 kDa.

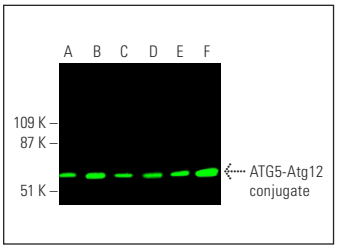
Molecular Weight of mouse/rat ATG5: 32 kDa.

Molecular Weight of ATG5-Atg12 conjugate: 50 kDa.

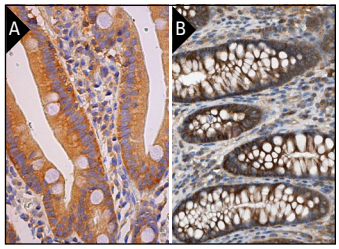
## STORAGE

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

## DATA




ATG5 (C-1): sc-133158. Near-infrared western blot analysis of ATG5-Atg12 conjugate expression in SH-SY5Y (**A**), HEL 92.1.7 (**B**), Raji (**C**), THP-1 (**D**), HeLa (**E**) and PANC-1 (**F**) whole cell lysates. Blocked with UltraCruz® Blocking Reagent: sc-516214. Detection reagent used: m-IgGκ BP-CFL 680: sc-516180.




ATG5 (C-1): sc-133158. Immunoperoxidase staining of formalin fixed, paraffin-embedded human duodenum tissue showing cytoplasmic staining of glandular cells (**A**) and human colon showing cytoplasmic staining of glandular cells. Kindly provided by The Swedish Human Protein Atlas (HPA) program (**B**).

## SELECT PRODUCT CITATIONS


1. Zhang, Q., et al. 2009. Autophagy-mediated chemosensitization in cancer cells by fullerene C60 nanocrystal. Autophagy 5: 1107-1117.
2. Sin, J., et al. 2016. Mitophagy is required for mitochondrial biogenesis and myogenic differentiation of C2C12 myoblasts. Autophagy 12: 369-380.
3. Ma, B., et al. 2017. Long non-coding RNA AC023115.3 suppresses chemoresistance of glioblastoma by reducing autophagy. Biochim. Biophys. Acta 1864: 1393-1404.
4. Zhang, D., et al. 2018. Autophagy maintains the integrity of endothelial barrier in LPS-induced lung injury. J. Cell. Physiol. 233: 688-698.
5. Marek-Iannucci, S., et al. 2019. Myocardial hypothermia increases autophagic flux, mitochondrial mass and myocardial function after ischemia-reperfusion injury. Sci. Rep. 9: 10001.
6. Yang, Z., et al. 2020. Upregulated NTF4 in colorectal cancer promotes tumor development via regulating autophagy. Int. J. Oncol. 56: 1442-1454.
7. Zhang, L., et al. 2021. Graphene oxide induces dose-dependent lung injury in rats by regulating autophagy. Exp. Ther. Med. 21: 462.
8. Ren, S., et al. 2022. Mechanistic analysis of resveratrol in cardiac hypertrophy by network pharmacology and animal experiments. Mol. Med. Rep. 26: 324.
9. Lu, Y., et al. 2023. Dexmedetomidine improves acute lung injury by activating autophagy in a rat hemorrhagic shock and resuscitation model. Sci. Rep. 13: 4374.


## RESEARCH USE

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