SANTA CRUZ BIOTECHNOLOGY, INC.

Atg2A (G-1): sc-514207

BACKGROUND

Atg2A (TG2 autophagy related 2 homolog A) is a 1,938 amino acid protein that belongs to the ATG2 family and may play a role in vesicle assembly. Encoded by a gene that maps to human chromosome 11q13.1, Atg2A is conserved in chimpanzee, canine, bovine, mouse and rat, and exists as four alternatively spliced isoforms. Undetected in adult tissues, including heart, brain, placenta, lung, liver and skeletal muscle, Atg2A regulation may act as a distinct indicator of autophagic programmed cell death. Atg2A is upregulated in both etoposide- and doxorubicin-induced apoptosis of HeLa cells, suggesting that Atg2A functions as a novel biomarker of topoisomerase II inhibitor-mediated apoptosis. Atg2A associates with Atg2B, indicating that these two related proteins also functionally interact. Atg2A frameshift mutations are linked to gastric and colorectal carcinomas with high microsatellite instability and may contribute to cancer development by deregulating the autophagy process.

REFERENCES

1. Van't Hof, A.E., et al. 2007. Evolutionary dynamics of multilocus microsatellite arrangements in the genome of the butterfly *Bicyclus anynana,* with implications for other Lepidoptera. Heredity 98: 320-328.
2. Melendez, A. and Neufeld, T.P. 2008. The cell biology of autophagy in metazoans: a developing story. Development 135: 2347-2360.
3. Kusama, Y., et al. 2009. Comprehensive analysis of expression pattern and promoter regulation of human autophagy-related genes. Apoptosis 14: 1165-1175.

CHROMOSOMAL LOCATION

Genetic locus: ATG2A (human) mapping to 11q13.1; Atg2a (mouse) mapping to 19 A.

SOURCE

Atg2A (G-1) is a mouse monoclonal antibody specific for an epitope mapping between amino acids 26-43 at the N-terminus of Atg2A of human origin.

PRODUCT

Each vial contains 200 µg IgG_1 kappa light chain in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

Atg2A (G-1) is available conjugated to agarose (sc-514207 AC), 500 µg/ 0.25 ml agarose in 1 ml, for IP; to HRP (sc-514207 HRP), 200 µg/ml, for WB, IHC(P) and ELISA; to either phycoerythrin (sc-514207 PE), fluorescein (sc-514207 FITC), Alexa Fluor® 488 (sc-514207 AF488), Alexa Fluor® 546 (sc-514207 AF546), Alexa Fluor® 594 (sc-514207 AF594) or Alexa Fluor® 647 (sc-514207 AF647), 200 µg/ml, for WB (RGB), IF, IHC(P) and FCM; and to either Alexa Fluor® 680 (sc-514207 AF680) or Alexa Fluor® 790 (sc-514207 AF790), 200 µg/ml, for Near-Infrared (NIR) WB, IF and FCM.

Blocking peptide available for competition studies, sc-514207 P, (100 µg peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% stabilizer protein).

RESEARCH USE

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

APPLICATIONS

Atg2A (G-1) is recommended for detection of Atg2A 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 Atg2A siRNA (h): sc-96345, Atg2A siRNA (m): sc-141321, Atg2A shRNA Plasmid (h): sc-96345-SH, Atg2A shRNA Plasmid (m): sc-141321-SH, Atg2A shRNA (h) Lentiviral Particles: sc-96345-V and Atg2A shRNA (m) Lentiviral Particles: sc-141321-V.

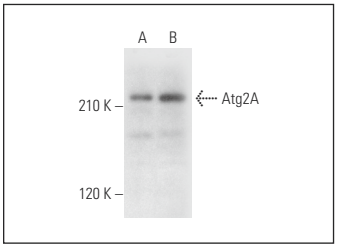
Molecular Weight of Atg2A isoforms 1/2/3/4: 213/213/35/14 kDa.

Positive Controls: K-562 whole cell lysate: sc-2203 or Jurkat whole cell lysate: sc-2204.

RECOMMENDED SUPPORT REAGENTS

To ensure optimal results, the following support reagents are recommended: 1) Western Blotting: use m-IgGκ BP-HRP: sc-516102 or m-IgGκ BP-HRP (Cruz Marker): sc-516102-CM (dilution range: 1:1000-1:10000), Cruz Marker™ Molecular Weight Standards: sc-2035, UltraCruz® Blocking Reagent: sc-516214 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 m-IgGκ BP-FITC: sc-516140 or m-IgGκ BP-PE: sc-516141 (dilution range: 1:50-1:200) with UltraCruz® Mounting Medium: sc-24941 or UltraCruz® Hard-set Mounting Medium: sc-359850.

DATA



Atg2A (G-1): sc-514207. Western blot analysis of Atg2A expression in K-562 (**A**) and Jurkat (**B**) whole cell lysates.

SELECT PRODUCT CITATIONS

1. Feng, L., et al. 2022. MicroRNA-378 contributes to osteoarthritis by regulating chondrocyte autophagy and bone marrow mesenchymal stem cell chondrogenesis. Mol. Ther. Nucleic Acids 28: 328-341.

STORAGE

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