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ATG3

Purified Mouse Monoclonal Antibody
Catalog # AO2528a

Product Information

Application	WB, IHC, ICC, E
Primary Accession	Q9NT62
Reactivity	Human, Monkey
Host	Mouse
Clonality	Monoclonal
Clone Names	7A1D1
Isotype	Mouse IgG1
Calculated MW	35864
Immunogen	Purified recombinant fragment of human ATG3 (AA: 1-100) expressed in E. Coli.
Formulation	Purified antibody in PBS with 0.05% sodium azide

Additional Information

Gene ID	64422
Other Names	APG3; APG3L; PC3-96; APG3-LIKE
Dilution	WB~~ 1/500 - 1/2000 IHC~~1:100~500 ICC~~ 1/200 - 1/1000 E~~ 1/10000
Storage	Maintain refrigerated at 2-8°C for up to 6 months. For long term storage store at -20°C in small aliquots to prevent freeze-thaw cycles.
Precautions	ATG3 is for research use only and not for use in diagnostic or therapeutic procedures.

Protein Information

Name	ATG3 (HGNC:20962)
Synonyms	APG3, APG3L
Function	E2 conjugating enzyme that catalyzes the covalent conjugation of the C-terminal Gly of ATG8-like proteins (GABARAP, GABARAPL1, GABARAPL2 or MAP1LC3A) to the amino group of phosphatidylethanolamine (PE)-containing lipids in the membrane resulting in membrane-bound ATG8-like proteins which is one of the key steps in the development of autophagic isolation membranes during autophagosome formation (PubMed:24191030, PubMed:33446636, PubMed:37252361). Cycles back and forth between

binding to ATG7 for loading with the ATG8-like proteins and binding to E3 enzyme, composed of ATG12, ATG5 and ATG16L1 to promote ATG8-like proteins lipidation (PubMed:11825910, PubMed:12207896, PubMed:12890687, PubMed:16704426, PubMed:24186333). Also plays a role as a membrane curvature sensor that facilitates LC3/GABARAP lipidation by sensing local membrane stress associated with lipid-packing defects as occurs with high molar proportions of conical lipids or strident membrane curvature (By similarity). Interacts with negatively-charged membranes promoting membrane tethering and enhancing LC3/GABARAP lipidation (PubMed:29142222). Also acts as an autocatalytic E2-like enzyme by catalyzing the conjugation of ATG12 to itself in an ATG7-dependent manner, this complex thus formed, plays a role in mitochondrial homeostasis but not in autophagy (By similarity). ATG12- ATG3 conjugation promotes late endosome to lysosome trafficking and basal autophagosome maturation via its interaction with PDCD6IP (By similarity). ATG12-ATG3 conjugate is also formed upon viccina virus infection, leading to the disruption the cellular autophagy which is not necessary for vaccinia survival and proliferation (By similarity). Promotes primary ciliogenesis by removing OFD1 from centriolar satellites via the autophagic pathway (By similarity).

Cellular Location Cytoplasm.

Tissue Location Widely expressed, with a highest expression in heart, skeletal muscle, kidney, liver and placenta

References

1.Mol Biol Rep. 2014;41(4):2093-9. 2.Apoptosis. 2012 Aug;17(8):810-20.

Images

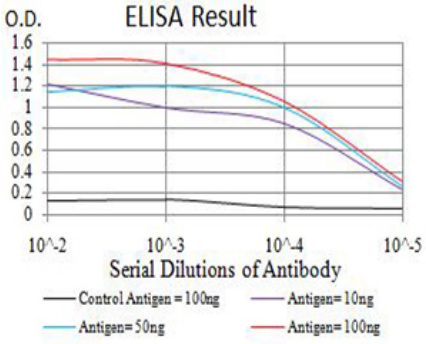


Figure 1:Black line: Control Antigen (100 ng);Purple line: Antigen (10ng); Blue line: Antigen (50 ng); Red line:Antigen (100 ng)

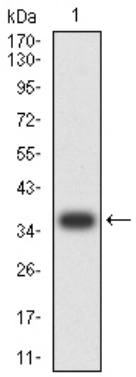


Figure 2:Western blot analysis using ATG3 mAb against human ATG3 (AA: 1-100) recombinant protein. (Expected MW is 37.3 kDa)

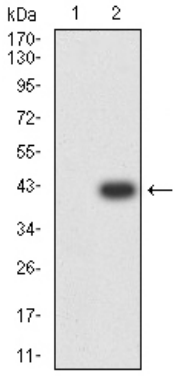


Figure 3:Western blot analysis using ATG3 mAb against HEK293 (1) and ATG3 (AA: 1-100)-hIgGFc transfected HEK293 (2) cell lysate.

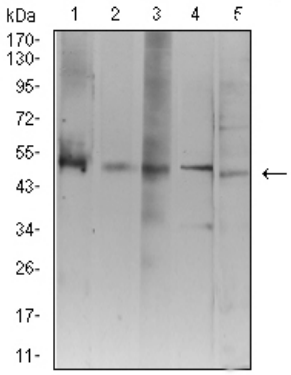


Figure 4:Western blot analysis using ATG3 mouse mAb against Jurkat (1), K562 (2), Hela (3), THP-1 (4), and COS7 (5) cell lysate.

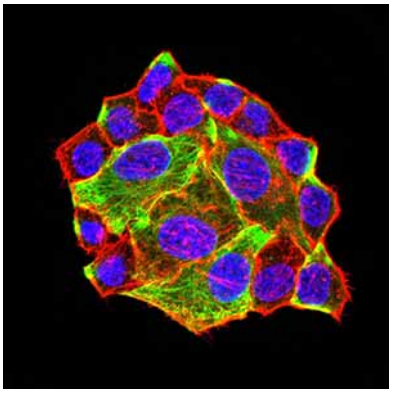


Figure 5:Immunofluorescence analysis of Hela cells using ATG3 mouse mAb (green). Blue: DRAQ5 fluorescent DNA dye. Red: Actin filaments have been labeled with Alexa Fluor- 555 phalloidin. Secondary antibody from Fisher (Cat#: 35503)

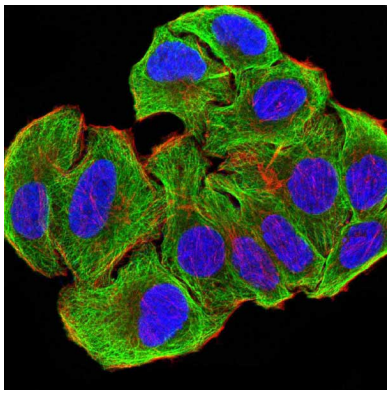
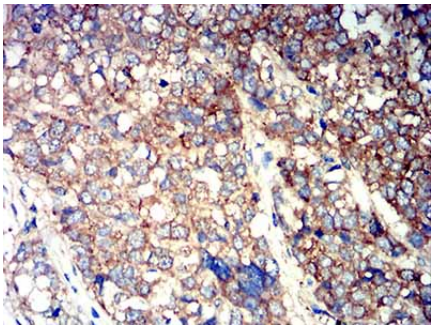


Figure 6:Immunofluorescence analysis of SMMC-7721 cells using ATG3 mouse mAb (green). Blue: DRAQ5 fluorescent DNA dye. Red: Actin filaments have been labeled with Alexa Fluor- 555 phalloidin. Secondary antibody from Fisher (Cat#: 35503)

Figure 7:Immunohistochemical analysis of paraffin-embedded breast cancer tissues using ATG3 mouse mAb with DAB staining.



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