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ATG3
Purified Mouse Monoclonal Antibody
Catalog # AO2529a

Specification

ATG3 - Product Information

Application	**E, WB, ICC, IHC**
Primary Accession	Q9NT62
Reactivity	**Human**
Host	**Mouse**
Clonality	**Monoclonal**
Isotype	**Mouse IgG1**
Calculated MW	**35.9kDa KDa**

Immunogen
Purified recombinant fragment of human ATG3 (AA: 1-100) expressed in E. Coli.

Formulation
Purified antibody in PBS with 0.05% sodium azide

ATG3 - Additional Information

Gene ID 64422

Other Names
APG3; APG3L; PC3-96; APG3-LIKE

Dilution
E~~ 1/10000
WB~~ 1/500 - 1/2000
ICC~~ 1/200 - 1/1000
IHC~~ 1/200 - 1/1000

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.

ATG3 - 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

ATG3 - Protocols

Provided below are standard protocols that you may find useful for product applications.

- Western Blot
- Blocking Peptides
- Dot Blot
- Immunohistochemistry
- Immunofluorescence
- Immunoprecipitation
- Flow Cytomety
- Cell Culture

ATG3 - Images

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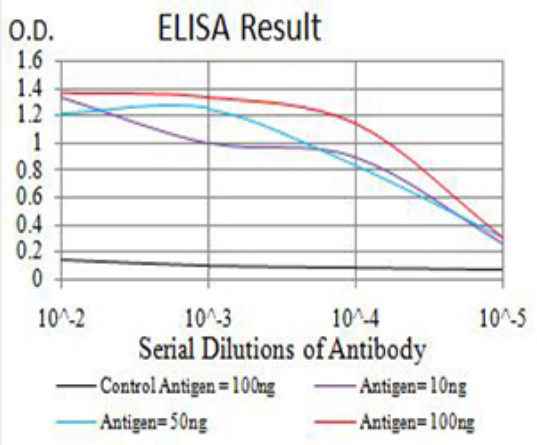

Figure 1:Black line: Control Antigen (100 ng);Purple line: Antigen (10ng); Blue line: Antigen (50 ng); Red line:Antigen (100 ng)

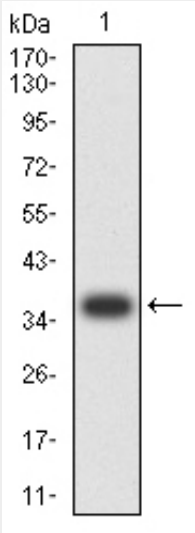

Figure 2:Western blot analysis using ATG3 mAb against human ATG3 (AA: 1-100) recombinant protein. (Expected MW is 37.3 kDa)

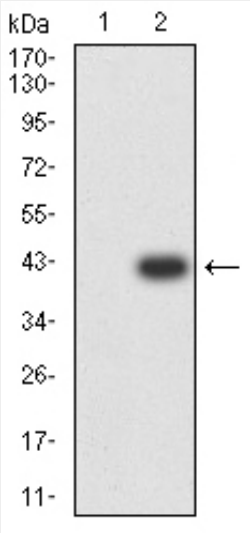

Figure 3:Western blot analysis using ATG3 mAb against HEK293 (1) and ATG3 (AA: 1-100)-hIgGFc transfected HEK293 (2) cell lysate.

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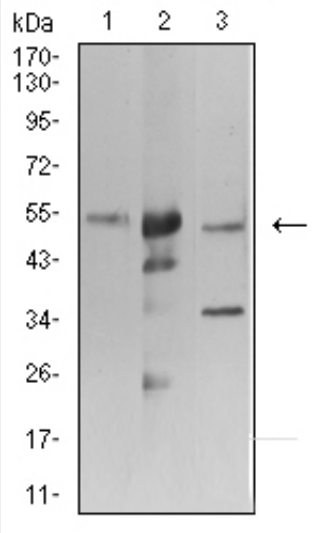

Figure 4:Western blot analysis using ATG3 mouse mAb against K562 (1), Hela (2), and THP-1 (3) cell lysate.

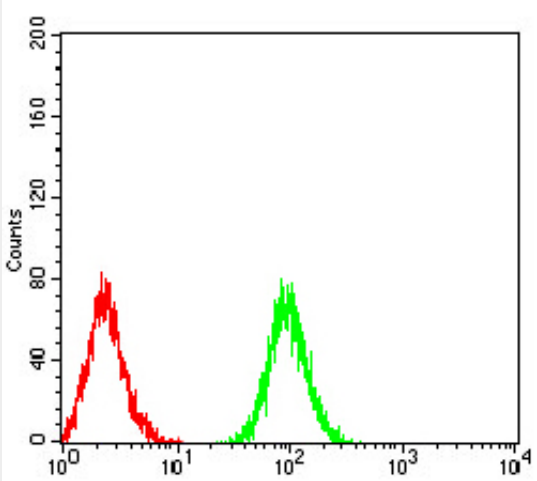

Figure 6:Flow cytometric analysis of Jurkat cells using ATG3 mouse mAb (green) and negative control (red).

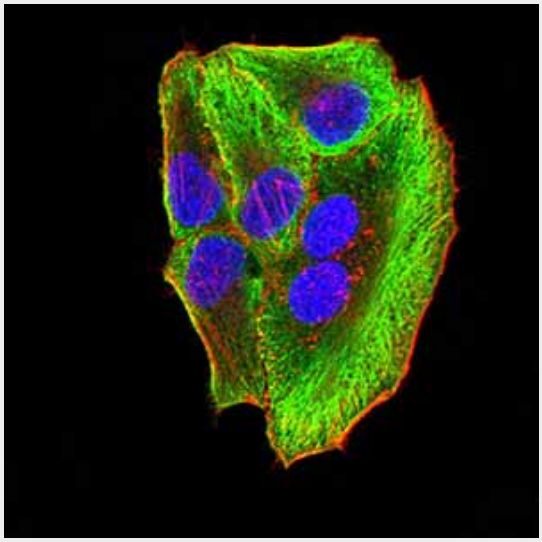

Figure 5:Immunofluorescence analysis of SMMC-7721 cells using ATG3 mouse mAb (green). Blue:

DRAQ5 fluorescent DNA dye. Red: Actin filaments have been labeled with Alexa Fluor- 555 phalloidin. Secondary antibody from Fisher (Cat#: 35503)

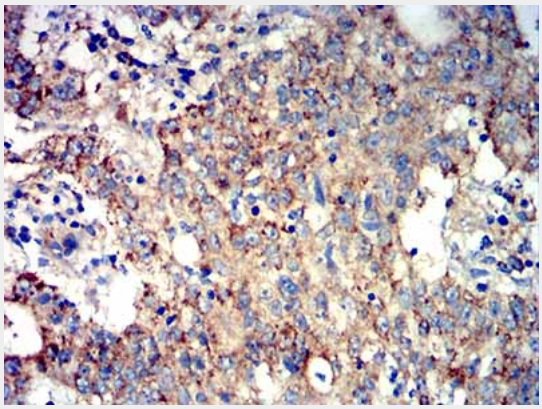

Figure 7:Immunohistochemical analysis of paraffin-embedded stomach cancer tissues using ATG3 mouse mAb with DAB staining.

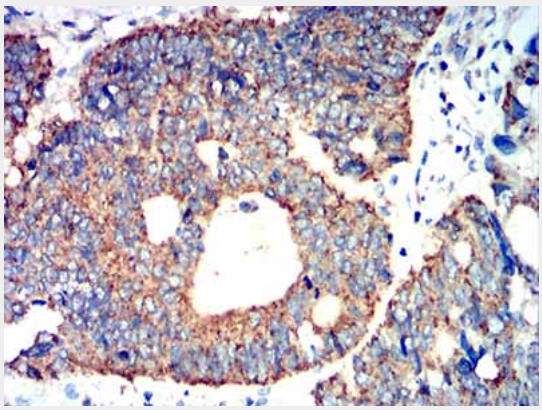

Figure 8:Immunohistochemical analysis of paraffin-embedded rectum cancer tissues using ATG3 mouse mAb with DAB staining.

ATG3 - References

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