abcam

ab114071

Anti-Beclin 1 antibody [2A4]

Key facts

Isotype	IgG1
Host species	Mouse
Storage buffer	Preservative: 0.05% Sodium azide Constituents: PBS
Form	Liquid
Clonality	Monoclonal
Immunogen	Recombinant Fragment Protein within Human BECN1 aa 50-250. The exact immunogen used to generate this antibody is proprietary information. Database link Q14457
Clone number	2A4
Purification technique	Affinity purification Protein G
Concentration	1 mg/mL The concentration of this product may be batch-dependent Batch concentration finder →
Purification notes	Purified from tissue culture supernatant.

Reactivity data

Flow Cyt

Tested

Species	Human
Dilution info	1/200 - 1/400

Notes	ab170190 - Mouse monoclonal IgG1, is suitable for use as an isotype control with this antibody.

WB

Tested

Species	Human
Dilution info	1/500 - 1/2000
Notes	-

IHC-P

Tested

Species	Human
Dilution info	1/200 - 1/1000
Notes	-

Target data

See full target information BECN1

Function

Plays a central role in autophagy (PubMed:18570871, PubMed:21358617, PubMed:23184933, PubMed:23974797, PubMed:25484083, PubMed:28445460, PubMed:37776275). Acts as a core subunit of the PI3K complex that mediates formation of phosphatidylinositol 3-phosphate; different complex forms are believed to play a role in multiple membrane trafficking pathways: PI3KC3-C1 is involved in initiation of autophagosomes and PI3KC3-C2 in maturation of autophagosomes and endocytosis. Involved in regulation of degradative endocytic trafficking and required for the abscission step in cytokinesis, probably in the context of PI3KC3-C2 (PubMed:20208530, PubMed:20643123, PubMed:23974797, PubMed:26783301). Essential for the formation of PI3KC3-C2 but not PI3KC3-C1 PI3K complex forms. Involved in endocytosis (PubMed:25275521). May play a role in antiviral host defense. Beclin-1-C 35 kDa localized to mitochondria can promote apoptosis; it induces the mitochondrial translocation of BAX and the release of proapoptotic factors. (Microbial infection) Protects against infection by a neurovirulent strain of Sindbis virus.

Storage

Shipped at conditions	Blue Ice

Appropriate short-term storage conditions	+4°C
Appropriate long-term storage conditions	-20°C
Aliquoting information	Upon delivery aliquot
Storage information	Avoid freeze / thaw cycle

Supplementary info

This supplementary information is collated from multiple sources and compiled automatically.

Activity summary	Beclin 1 sometimes referred to as beclin-1 or becn1 is a protein that plays a mechanical role in autophagy. This process involves the recycling of cellular components and is essential for maintaining cellular health. Beclin 1 is approximately 60 kDa in molecular weight and is expressed in a variety of tissues throughout the body. It acts at the molecular level engaging in the initial stages of autophagosome formation which are critical for cell survival during nutrient deprivation.
Biological function summary	The protein functions as an important component of the Beclin 1 autophagy complex which orchestrates the autophagic process. This complex is essential for promoting autophagosome nucleation by interacting with multiple partners that regulate the autophagy pathway. In addition to its role in autophagy Beclin 1 protein stabilizes interactions with other autophagic proteins ensuring the correct assembly and activity of this cellular mechanism. The regulation of Beclin 1's activity and expression influences the efficiency and specificity of autophagy in cells.
Pathways	Beclin 1 integrates into critical cellular pathways like the PI3K/Akt pathway and the mTOR pathway which are pivotal in cell growth and survival. Within these pathways beclin cooperates closely with proteins such as ATG14 and VPS34. These interactions facilitate the recruitment and activation of additional factors that promote the elongation of phagophores which eventually become complete autophagosomes. The coordination of these pathways ensures the proper balance between cell survival and death adapting to cellular conditions.
Associated diseases and disorders	Beclin 1 shows significant relevance in cancer and neurodegenerative diseases. Abnormal Beclin 1 expression and function are linked to a range of cancers as its dysregulation affects apoptosis and autophagic turnover. Furthermore in neurodegenerative disorders like Alzheimer's disease altered Beclin 1 activity can disrupt normal protein degradation exacerbating protein aggregation a hallmark of these conditions. Interactions with proteins like Bcl-2 are essential in the context of these diseases as Bcl-2 modulates the autophagic and apoptotic balance directly impacting disease progression.

Product promise

Tested

We have tested this species and application combination and it works. It is covered by our product promise.

Expected

We have not tested this specific species and application combination in-house, but expect it will work. It is covered by our product promise.

Predicted

This species and application combination has not been tested, but we predict it will work based on strong homology. However, this combination is not covered by our product promise.

Not recommended

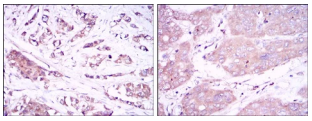
We do not recommend this combination. It is not covered by our product promise.

We are dedicated to supporting your work with high quality reagents and we are here for you every step of the way should you need us.

In the unlikely event of one of our products not working as expected, you are covered by our product promise.

Full details and terms and conditions can be found here:
Terms & Conditions.

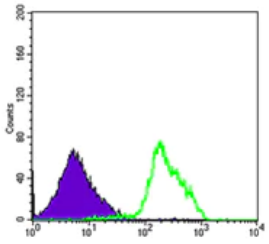
4 product images



Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) - Anti-Beclin 1 antibody [2A4] (ab114071)

Beclin 1 Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) staining using mouse Anti-Beclin 1 antibody

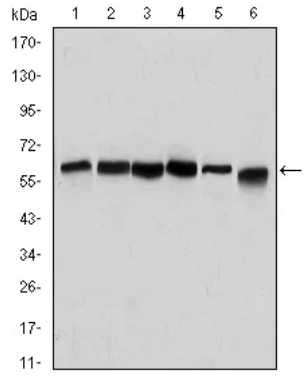
Immunohistochemical analysis of Beclin 1 expression in paraffin embedded breast cancer tissues (left) and liver cancer tissues (right) using ab114071 at 1/200 dilution with DAB staining



Flow Cytometry - Anti-Beclin 1 antibody [2A4] (ab114071)

Beclin 1 Flow Cytometry staining using mouse Anti-Beclin 1 antibody

Flow cytometric analysis of RAJI cells using Beclin 1 mouse mAb (green) and negative control (purple).



Western blot - Anti-Beclin 1 antibody [2A4] (ab114071)

All lanes:
Western blot - Anti-Beclin 1 antibody [2A4] (ab114071) at 1/500 dilution

Lane 1:
Hela cell lysate

Lane 2:
A431 cell lysate

Lane 3:
MCF7 cell lysate

Lane 4:
Raji cell lysate

Lane 5:
Jurkat cell lysate

Lane 6:
SKBR3 cell lysate

Predicted band size: 52 kDa

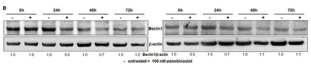


Image collected and cropped by CiteAb under a CC-BY license from the publication

Western blot - Anti-Beclin 1 antibody [2A4] (ab114071)

Beclin 1 western blot using anti-Beclin 1 antibody [2A4] ab114071. Publication image and figure legend from Di Fazio, P., Waldegger, P., et al., 2016, Oncotarget, PubMed 27058414.

ab114071 was used in this publication in western blot. This may not be the same as the application(s) guaranteed by Abcam. For a full list of applications guaranteed by Abcam for ab114071 please see the product overview.

Beclin1 involvement(A) Beclin1 protein distribution was determined by immunofluorescence in HepG2 and Hep3B cells. After treatment with 100 nM panobinostat, Beclin1 aggregates are clearly visible. Immunofluorescence analysis has been performed under identical settings. Nuclei were stained with Hoechst 33342. Magnification is 630× and scale bar represents 10 μm. (B) Western blot of Beclin1. Densitometry results were normalized to β-actin content and are expressed relative to untreated controls set at 1.0.

Please note: All products are 'FOR RESEARCH USE ONLY. NOT FOR USE IN DIAGNOSTIC OR THERAPEUTIC PROCEDURES'.