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Anti-Beclin 1/BECN1 Antibody Picoband®

Catalog Number: PB9076

About BECN1

Beclin-1, also known as also known as ATG6 or VPS30 is a protein that in humans is encoded by the BECN1 gene. Beclin-1 and its binding partner class III phosphoinositide 3-kinase (PI3K), also named Vps34, are required for the initiation of the formation of the autophagosome in autophagy. This gene participates in the regulation of autophagy and has an important role in development, tumorigenesis, and neurodegeneration. Schizophrenia is associated with low levels of Beclin-1 in the hippocampus of the affected which causes diminished autophagywhich in turn results in increased neuronal cell death. It has been found that beclin-1 can promote autophagy in autophagy-defective yeast with a targeted disruption of apg6/vps30, and in human MCF7 breast carcinoma cells.

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Overview

Product Name	Anti-Beclin 1/BECN1 Antibody Picoband®
Reactive Species	Human, Mouse, Rat
Description	Boster Bio Anti-Beclin 1/BECN1 Antibody Picoband® catalog # PB9076. Tested in Flow Cytometry, IP, IF, ICC, WB applications. This antibody reacts with Human, Mouse, Rat. The brand Picoband indicates this is a premium antibody that guarantees superior quality, high affinity, and strong signals with minimal background in Western blot applications. Only our best-performing antibodies are designated as Picoband, ensuring unmatched performance.
Application	Flow Cytometry, IP, IF, ICC, WB
Clonality	Polyclonal
Formulation	Each vial contains 4 mg Trehalose, 0.9 mg NaCl and 0.2 mg Na2HPO4.
Storage Instructions	Store at -20˚C for one year from date of receipt. After reconstitution, at 4˚C for one month. It can also be aliquotted and stored frozen at -20˚C for six months. Avoid repeated freeze-thaw cycles.
Host	Rabbit
Uniprot ID	Q14457

Technical Details

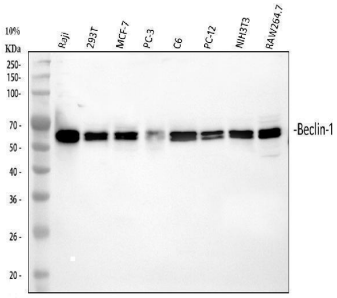
Immunogen	E.coli-derived human Beclin 1 recombinant protein (Position: M1-S354). Human Beclin 1 shares 97% amino acid (aa) sequence identity with both mouse and rat Beclin 1.

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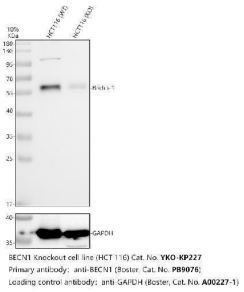
Recommended Detection Systems	Boster recommends Enhanced Chemiluminescent Kit with anti-Rabbit IgG (EK1002) for Western blot, and HRP Conjugated anti-Rabbit IgG Super Vision Assay Kit (SV0002-1) for ICC.
Cross Reactivity	No cross-reactivity with other proteins
Isotype	Rabbit IgG
Form	Lyophilized
Concentration	Adding 0.2 ml of distilled water will yield a concentration of 500 ug/ml.
Purification	Immunogen affinity purified.
Suggested Dilutions	Western blot, 0.1-0.5ug/ml, Human, Mouse, Rat Immunocytochemistry/Immunofluorescence, 5ug/ml, Human Immunoprecipitation, 0.5-2 ug/ml, Human Flow Cytometry (Fixed), 1-3ug/1x10^6 cells, Human Note: For flow cytometry (FCM), suitable for fixed cells only. Not suitable for FACS or surface flow cytometry using live cells.

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Anti-Beclin 1/BECN1 Antibody Picoband® (PB9076) Images



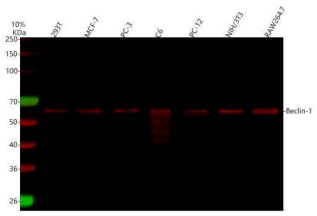
Western blot analysis of Beclin 1 using anti-Beclin 1 antibody (PB9076). Electrophoresis was performed on a 5-20% SDS-PAGE gel at 70V (Stacking gel) / 90V (Resolving gel) for 2-3 hours. The sample well of each lane was loaded with 30 ug of sample under reducing conditions. Lane 1: human Raji whole cell lysates, Lane 2: human 293T whole cell lysates, Lane 3: human MCF-7 whole cell lysates, Lane 4: human PC-3 whole cell lysates, Lane 5: rat C6 whole cell lysates, Lane 6: rat PC-12 whole cell lysates, Lane 7: mouse NIH/3T3 whole cell lysates, Lane 8: mouse RAW264.7 whole cell lysates. After electrophoresis, proteins were transferred to a nitrocellulose membrane at 150 mA for 50-90 minutes. Blocked the membrane with 5% non-fat milk/TBS for 1.5 hour at RT. The membrane was incubated with rabbit anti-Beclin 1 antigen affinity purified polyclonal antibody (Catalog # PB9076) at 0.5 ug/mL overnight at 4°C, then washed with TBS-0.1%Tween 3 times with 5 minutes each and probed with a goat anti-rabbit IgG-HRP secondary antibody at a dilution of 1:5000 for 1.5 hour at RT. The signal is developed using an Enhanced Chemiluminescent detection (ECL) kit (Catalog # EK1002) with Tanon 5200 system. A specific band was detected for Beclin 1 at approximately 60 kDa. The expected band size for Beclin 1 is at 52 kDa.



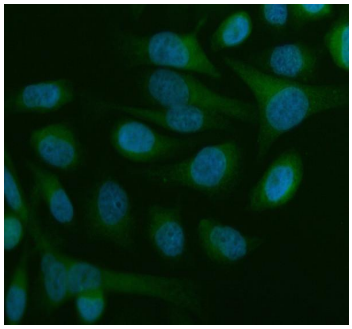
Western blot analysis of Beclin 1/BECN1 using anti-Beclin 1/BECN1 antibody (PB9076). Electrophoresis was performed on a 10% SDS-PAGE gel at 80V (Stacking gel) / 120V (Resolving gel) for 2 hours. The sample well of each lane was loaded with 30 ug of sample under reducing conditions. Lane 1: human HCT116- WT whole cell lysates, Lane 2: human HCT116-BECN1 KO whole cell lysates.After electrophoresis, proteins were transferred to a nitrocellulose membrane at 150 mA for 50-90 minutes. Blocked the membrane with 5% non-fat milk/TBS for 1.5 hour at RT. The membrane was incubated with rabbit anti-Beclin 1/BECN1 antigen affinity purified polyclonal antibody (PB9076) at 0.5 ug/mL overnight at 4°C, then washed with TBS-0.1%Tween 3 times with 5 minutes each and probed with a goat anti-rabbit IgG-HRP secondary antibody at a dilution of 1:5000 for 1.5 hour at RT. The signal is developed using an ECL Plus Western Blotting Substrate (Catalog # AR1196-200) with Tanon 5200 system. A specific band was detected for Beclin 1/BECN1 at approximately 60 kDa. The expected band size for Beclin 1/BECN1 is at 52 kDa.

Western blot analysis of Beclin 1 using anti-Beclin 1 antibody (PB9076). Electrophoresis was performed on a 5-20% SDS-PAGE gel at 70V (Stacking gel) / 90V (Resolving gel) for 2-3 hours. The sample well of each lane was loaded with 30 ug of sample under reducing conditions. Lane 1: human 293T whole cell lysates, Lane 2: human MCF-7 whole cell lysates, Lane 3: human PC-3 whole cell lysates, Lane 4: rat C6 whole cell lysates, Lane 5: rat PC-12 whole cell lysates, Lane 6:

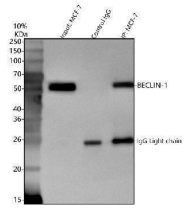
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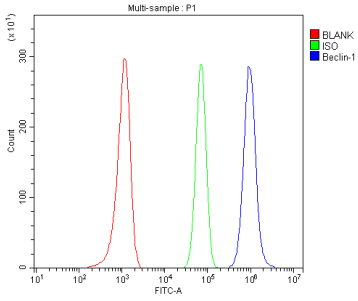
mouse NIH/3T3 whole cell lysates, Lane 7: mouse Raw264.7 whole cell lysates. After electrophoresis, proteins were transferred to a nitrocellulose membrane at 150 mA for 50-90 minutes. Blocked the membrane with 5% non-fat milk/TBS for 1.5 hour at RT. The membrane was incubated with rabbit anti-Beclin 1 antigen affinity purified polyclonal antibody (PB9076) at 0.5 ug/mL overnight at 4°C, then washed with TBS-0.1%Tween 3 times with 5 minutes each and probed with a goat anti-rabbit IgG-DyLight 647 Conjugated secondary antibody at a dilution of 1:2000 for 1.5 hour at RT. A specific band was detected for Beclin 1 at approximately 60 kDa. The expected band size for Beclin 1 is at 52 kDa.



IF analysis of Beclin 1 using anti-Beclin 1 antibody (PB9076). Beclin 1 was detected in an immunocytochemical section of Hela cells. Enzyme antigen retrieval was performed using IHC enzyme antigen retrieval reagent (AR0022) for 15 mins. The cells were blocked with 10% goat serum. And then incubated with 5 ug/mL rabbit anti-Beclin 1 Antibody (PB9076) overnight at 4°C. DyLight®488 Conjugated Goat Anti-Rabbit IgG (BA1127) was used as secondary antibody at 1:500 dilution and incubated for 30 minutes at 37°C. The section was counterstained with DAPI. Visualize using a fluorescence microscope and filter sets appropriate for the label used.

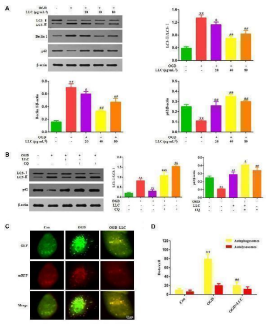


Immunoprecipitating Beclin 1/BECN1 in MCF-7 whole cell lysate. Western blot analysis of Beclin 1/BECN1 using anti-Beclin 1/BECN1 antibody (PB9076); Lane 1: MCF-7 whole cell lysates (30ug); Lane 2: Rabbit control IgG instead of anti-Beclin 1/BECN1 antibody in MCF-7 whole cell lysate; Lane 3: anti-Beclin 1/BECN1 antibody (2ug) + MCF-7 whole cell lysate (500ug). After electrophoresis, proteins were transferred to a membrane. Then the membrane was incubated with rabbit anti-Beclin 1/BECN1 antigen affinity purified polyclonal antibody (PB9076) at a dilution of 0.5 ug/mL and probed with a goat anti-rabbit IgG-HRP secondary antibody. The signal is developed using ECL Plus Western Blotting Substrate (Catalog # AR1196-200). A specific band was detected for Beclin 1/BECN1 at approximately 60 kDa. The expected band size for Beclin 1/BECN1 is at 52 kDa.

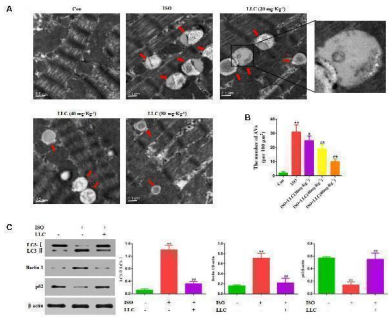


Flow Cytometry analysis of Raji cells using anti-Beclin 1 antibody (PB9076). Overlay histogram showing Raji cells stained with PB9076 (Blue line). To facilitate intracellular staining, cells were fixed with 4% paraformaldehyde and permeabilized with permeabilization buffer. The cells were blocked with 10% normal goat serum. And then incubated with rabbit anti-Beclin 1 Antibody (PB9076, 1 ug/1x106 cells) for 30 min at 20°C. DyLight®488 conjugated goat anti-rabbit IgG (BA1127, 5-10 ug/1x106 cells) was used as secondary antibody for 30 minutes at 20°C. Isotype control antibody (Green line) was rabbit IgG (1 ug/1x106) used under the same conditions. Unlabelled sample without incubation with primary antibody and secondary antibody (Red line) was used as a blank control.

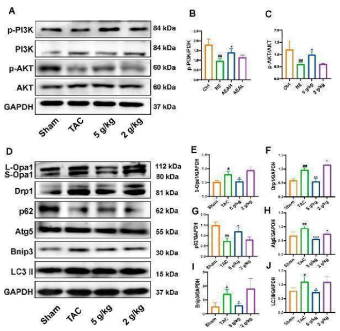
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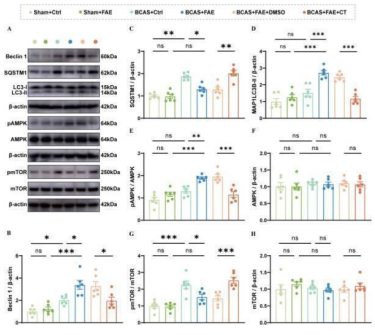
Effects of LLC on autophagy in H9c2 cardiomyocytes under OGD. (A) Expression levels of LC3, Beclin 1 and p62 changes with LLC pretreatment. (B) Expression levels of LC3 and p62 changes in the presence or absence of 5 umol·L -1 chloroquine and 40 ug·mL -1 LLC. (C) H9c2 cardiomyocytes were transfected with mRFP-GFP-LC3 and observed by fluorescent microscope (scale bar = 10 um). (D) Mean number of autophagosomes represented by yellow dots in merged images and autolysosomes represented by red dots in merged images per cell. All experiments were repeated at least three times. Data were presented as means ± SD. ∗∗ P < 0.01 vs. Con group, ## P < 0.01 vs. OGD group, & P < 0.05, && P < 0.01 vs. OGD+LLC group, $ P < 0.05 vs. OGD+CQ group. CQ, chloroquine.Index in PubMed under a CC BY license. PMID: 29651246



Effects of LLC on autophagy in the hearts from rats subjected to myocardial ischemia injury. (A) Representative transmission electron ultra-images showing autophagic vacuoles (marked with red arrows in the images, scale bar = 0.5 um). (B) Quantitative analysis of the number of autophagic vacuoles in (A) . (C) Expression levels of LC3, Beclin 1 and p62 changes with LLC (80 mg·Kg -1) pretreatment. Data were presented as means ± SD. ∗∗ P < 0.01 vs. Con group, # P < 0.05, ## P < 0.01 vs. ISO group.Index in PubMed under a CC BY license. PMID: 29651246



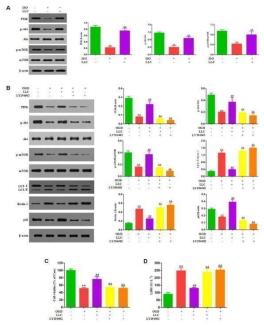
AEA improved CHF via PI3K/AKT/Bnip3 axis. (A) Representative images of PI3K/AKT axis. (B, C) The phosphorylation level of PI3K and AKT. (D) Representative images of Opa1, Drp1, Bnip3, p62, Atg5 and LC3II. (E–J) The expression level of Opa1, Drp1, Bnip3, p62, Atg5 and LC3II. (n = 3).Index in PubMed under a CC BY license. PMID: 40206063



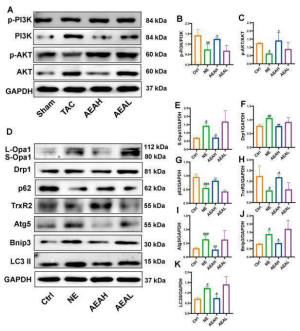
Effects of increasing endogenous irisin by FAE on autophagy and AMPK/mTOR pathway post CCH. A-D Western blot analysis for autophagy protein levels, including Beclin 1, SQSTM1, MAP1LC3B-I and MAP1LC3B-II in brain, with quantification (band intensity normalized to beta-actin) (n = 6/group). A , E-H Western blot analysis for phosphorylation levels of AMPK and mTOR in brain, with quantification (band intensity normalized to beta-actin) (n = 6/group). One-way ANOVA, Tukey post hoc test (B–H). The data represent the mean ± SD, p < 0.05 was set as the threshold for significance. * p < 0.05, ** p < 0.01, *** p < 0.001, ns, no significance, as indicated Full size imageIndex in PubMed under a CC BY license. PMID: 40581647

PI3K/Akt/mTOR pathway is involved in the cardioprotective

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effects of LLC. (A) Expression levels of PI3K, p-Akt, Akt, p-mTOR and mTOR in hearts were analyzed. (B) Representative western blots of PI3K (p110alpha), p-Akt (Ser473), Akt, p-mTOR (Ser2448), mTOR, LC3, Beclin 1 and p62 in the presence or absence of 20 umol·L -1 LY294002 and 40 ug·mL -1 LLC. (C) The cell viability was analyzed by MTT assay. (D) The cell injury was detected by LDH measurements. All experiments were repeated at least three times. Data were presented as means ± SD. ∗∗ P < 0.01 vs. Con group, ## P < 0.01 vs. OGD group, & P < 0.05, && P < 0.01 vs. OGD+LLC group.Index in PubMed under a CC BY license. PMID: 29651246



AEA improved NE-induced injuries via PI3K/AKT/Bnip3 axis. (A) Representative images of PI3K/AKT axis in H9c2 cells. (B, C) The phosphorylation level of PI3K and AKT. (D) Representative images of Opa1, Drp1, TrxR2, Bnip3, p62, Atg5 and LC3II in cells. (E–K) The expression level of Opa1, Drp1, TrxR2, Bnip3, p62, Atg5 and LC3II in H9c2 cells. (n = 3).Index in PubMed under a CC BY license. PMID: 40206063

15 Publications Citing This Product

1. PubMed ID: 10.3390/toxins13070503, The Protein-Independent Role of Phosphate in the Progression of Chronic Kidney Disease

2. PubMed ID: 10.1007/s12288-019-01241-3, MicroRNA 30a Mediated Autophagy and Imatinib Response in Egyptian Chronic Myeloid Leukemia Patients

3. PubMed ID: 10.1155/2021/5584447, Autophagic Degradation of Gasdermin D Protects against Nucleus Pulposus Cell Pyroptosis and Retards Intervertebral Disc Degeneration In Vivo

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Anti-Beclin 1/BECN1 Antibody

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