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Anti-Beta Tubulin/TUBB Antibody Picoband®

Catalog Number: A01857-1

About TUBB

Tubulin beta chain is a protein that in humans is encoded by the TUBB gene. This gene encodes a beta tubulin protein. This protein forms a dimer with alpha tubulin and acts as a structural component of microtubules. Mutations in this gene cause cortical dysplasia, complex, with other brain malformations 6. Alternative splicing results in multiple splice variants. There are multiple pseudogenes for this gene on chromosomes 1, 6, 7, 8, 9, and 13.

Overview

Product Name	Anti-Beta Tubulin/TUBB Antibody Picoband®
Reactive Species	Chicken, Human, Monkey, Mouse, Rat
Description	Boster Bio Anti-Beta Tubulin/TUBB Antibody Picoband® catalog # A01857-1. Tested in Flow Cytometry, IF, IHC, ICC, WB applications. This antibody reacts with Human, Monkey, Mouse, Rat, Chicken. 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, IF, IHC, 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	P07437

Technical Details

Immunogen	A synthetic peptide corresponding to a sequence at the C-terminus of human Beta Tubulin, identical to the related mouse and rat sequences.
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 IHC(P) and 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.

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Purification	Immunogen affinity purified.
Suggested Dilutions	Western blot, 0.1-0.5ug/ml, Human, Monkey, Mouse, Rat, Chicken Immunohistochemistry (Paraffin-embedded Section), 2-5ug/ml, Human Immunocytochemistry/Immunofluorescence, 5ug/ml, Human Flow Cytometry(Fixed), 1-3ug/1x10^6 cells, Human

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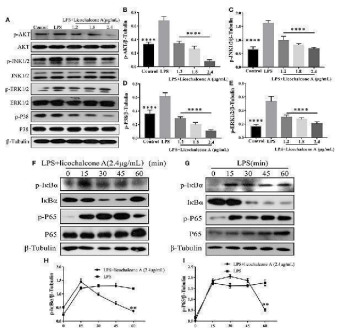
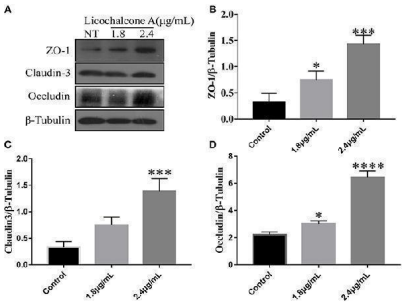
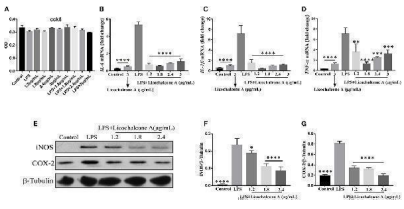
Anti-Beta Tubulin/TUBB Antibody Picoband® (A01857-1) Images



Effects of licochalcone A on LPS-induced activation of AKT/NF-kappaB and MAPK signaling pathways in mMECs. (A–E) Total protein in mMECs was collected after 4 h of LPS stimulation. Licochalcone A was added 1 h before LPS stimulation. Protein levels of p-AKT, p-JNK1/2, p-ERK1/2, and p-P38 were detected via western blot and quantitatively assessed via densitometry using beta-tubulin as an internal control. Protein levels were measured using ImageJ software ( ) and normalized to that of beta-tubulin. (F–I) MMECs were divided into LPS (1 ug/mL) or LPS + licochalcone A (2.4 ug/mL) groups. After adding LPS to serum-free medium for 1 h, licochalcone A was added. Protein was collected after 0, 15, 30, 45, and 60 min. (F) Western blot analysis of p-IkappaBalpha, IkappaBalpha, p-P65, and P65 in mMECs were treated with LPS + licochalcone A. (G) Western blot analysis of p-IkappaBalpha, IkappaBalpha, p-P65, and P65 in mMECs were treated with LPS only. (H–I) The phosphorylation of P65 and IkappaBalpha at different time-points under LPS and LPS + licochalcone A treatment were detected via western blot. Values are presented as means ± SD (n = 3) (** p < 0.01 vs. LPS, **** p < 0.0001 vs. LPS).Index in PubMed under a CC BY license. PMID: 30858849



Effects of licochalcone A on the protein levels of ZO-1, Occludin, and claudin3 in mMECs. mMECs were serum-starved for 3 h before treatment with Licochalcone A (1.8, 2.4 ug/mL) for 24 h (A) . The protein levels of ZO-1 (B) , claudin3 (C) , and Occludin (D) were determined by western blot, and the relative protein levels were quantified by scanning densitometry and normalized to beta-tubulin. Values are presented as means ± SD (n = 3) (** p < 0.01, *** p < 0.001 and **** p < 0.0001 vs. Control group).Index in PubMed under a CC BY license. PMID: 30858849



Effects of Licochalcone A on LPS-induced inflammatory response in mouse mammary epithelial cells (mMECs). Cells were cultured with different concentrations of licochalcone A (1.2, 1.8, 2.4, and 3 ug/mL) for 4 h and viability determined with the CCK8 assay. (A) The effect of licochalcone A and licochalcone A + LPS were determined by CCK8 assay. mMECs were pretreated with Licochalcone A (1.2, 1.8, 2.4, and 3 ug/mL) for 1 h and then stimulated with LPS for 4 h, protein and mRNA levels were determined by qRT-PCR and western blot. The mRNA levels of IL-6 (B) , IL-1 beta (C) , and TNF- alpha (D) , and the relative mRNA level was normalized to beta -actin mRNA. The protein levels of COX-2 (E,G) and iNOS (E,F) , and the relative protein levels were quantified by scanning densitometry and normalized to beta-tubulin. Values are presented as means ± SD (n = 3) (* p < 0.05, ** p < 0.01, *** p < 0.001, and **** p < 0.0001 vs. LPS group).Index in PubMed under a CC BY license. PMID: 30858849

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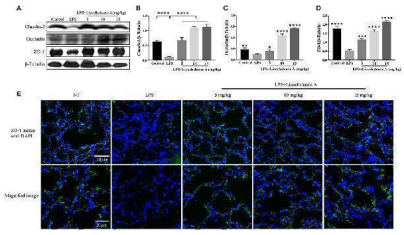
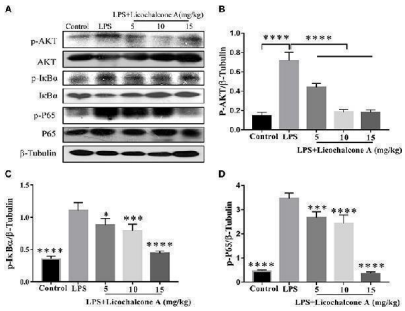
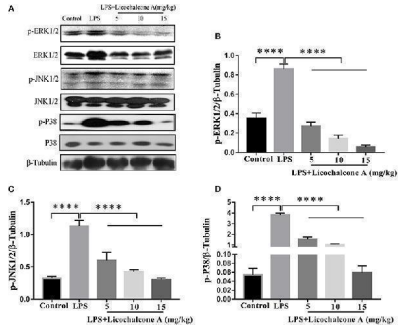


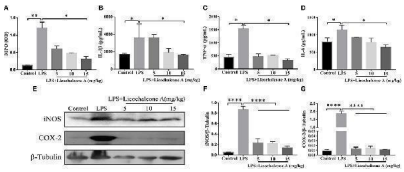
Protein levels change in claudin-3, occluding, and ZO-1 after LPS or LPS + licochalcone A injection. Protein levels was measured using ImageJ software ( ) and normalized to that of beta-tubulin. (A–D) Results of western blot analysis of claudin-3, occludin, ZO-1, and beta-tubulin in mammary glands after LPS and LPS + licochalcone A injection. (B–D) Protein levels of claudin-3, occludin and ZO-1 normalized to that of beta-tubulin. (E) Immunostaining images of ZO-1 (green) and nuclear staining with DAPI (blue) in mammary glands treated with LPS and licochalcone A. Values are presented as means ± SD (n = 10 in each group) (* p < 0.05, ** p < 0.01, *** p < 0.001, and **** p < 0.0001 vs. LPS group).Index in PubMed under a CC BY license. PMID: 30858849



Effects of licochalcone A on AKT/NF-kappaB signaling pathway in LPS-induced mice mastitis. Mammary gland tissues from different experimental groups were obtained 24 h after LPS administration and total protein. The tissue lysates were prepared and subjected to western blot by using p-AKT (A,B) , p-IkappaBalpha (A,C) , and p-P65 (A,D) antibodies, respectively. Each immunoreactive band was digitized and expressed as a ratio of the beta-tubulin level. Values are presented as means ± SD (* p < 0.05, *** p < 0.001, and **** p < 0.0001 vs. LPS group).Index in PubMed under a CC BY license. PMID: 30858849



Effects of licochalcone A on mitogen-activated protein kinase (MAPK) signaling pathway in LPS-induced mice mastitis. Mammary gland tissues from different experimental groups were obtained 24 h after LPS administration. The tissue lysates were prepared and subjected to western blot by using p-ERK1/2 (A,B) , p-JNK1/2 (A,C) , p-P38 (A,D) antibodies, respectively. Each immunoreactive band was digitized and expressed as a ratio of the beta-tubulin level. Values are presented as means ± SD (**** p < 0.0001 vs. LPS group).Index in PubMed under a CC BY license. PMID: 30858849



Effects of Licochalcone A on inflammatory response in LPS-induced mice mastitis. Mammary gland tissues from each experimental group (n = 10) were obtained at 24 h after LPS administration. (A) Myeloperoxidase (MPO) activity assay. The protein levels of IL-1beta (B) , TNF-alpha (C) , and IL-6 (D) were detected using ELISA. Western blot assay of inducible nitric oxide synthase (iNOS) (E,F) and cyclooxygenase-2 (COX-2) (E,G) , and the relative protein levels were quantified by scanning densitometry and normalized to beta-tubulin. Values are presented as means ± SD (* p < 0.05, ** p < 0.01, and **** p < 0.0001 vs. LPS group).Index in PubMed under a CC BY license. PMID: 30858849

Western blot analysis of Beta Tubulin using anti-Beta Tubulin

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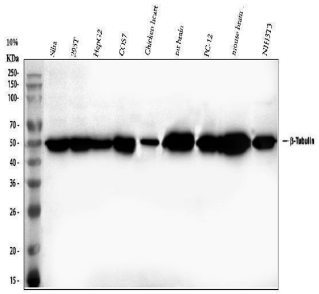
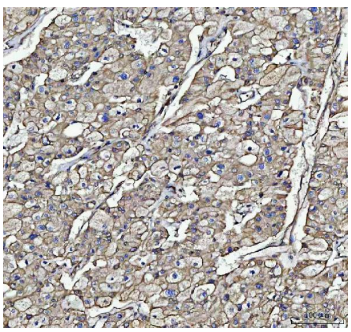


antibody (A01857-1). Electrophoresis was performed on a 5-20% SDS-PAGE gel at 70V (Stacking gel) / 90V (Resolving gel) for 2-3 hours. The sample well of each lane was loaded with 30 ug of sample under reducing conditions. Lane 1: human SiHa whole cell lysates, Lane 2: human 293T whole cell lysates, Lane 3: human HepG2 whole cell lysates, Lane 4: monkey COS-7 whole cell lysates, Lane 5: chicken heart tissue lysates, Lane 6: rat brain tissue lysates, Lane 7: rat PC-12 whole cell lysates, Lane 8: mouse brain tissue lysates, Lane 9: mouse NIH/3T3 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-Beta Tubulin antigen affinity purified polyclonal antibody (Catalog # A01857-1) 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 Beta Tubulin at approximately 50 kDa. The expected band size for Beta Tubulin is at 50 kDa.

Western blot analysis of TUBB using anti-TUBB antibody (A01857-1). Electrophoresis was performed on a 5-20% 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 2-3: human OCI-LY1-SRPK1 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-TUBB antigen affinity purified polyclonal antibody (A04887-1) at 1:3000 overnight at 4°C, then washed with TBS-0.1%Tween 3 times with 5 minutes each and probed with a HRP-conjugated Anti-Rabbit IgG Secondary Antibodyat for 1 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 TUBB at approximately 55 kDa. The expected band size for TUBB is at 50 kDa.



IHC analysis of Beta Tubulin using anti-Beta Tubulin antibody (A01857-1). Beta Tubulin was detected in a paraffin-embedded section of human liver cancer tissue. Heat mediated antigen retrieval was performed in EDTA buffer (pH 8.0, epitope retrieval solution). The tissue section was blocked with 10% goat serum. The tissue section was then incubated with 2 ug/ml rabbit anti-Beta Tubulin Antibody (A01857-1) overnight at 4°C. Peroxidase Conjugated Goat Anti-rabbit IgG was used as secondary antibody and incubated for 30 minutes at 37°C. The tissue section was developed using HRP Conjugated Rabbit IgG Super Vision Assay Kit (Catalog # SV0002) with DAB as the chromogen.

IHC analysis of Beta Tubulin using anti-Beta Tubulin antibody

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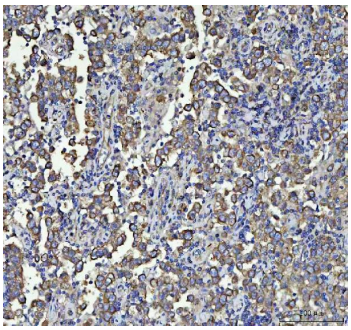
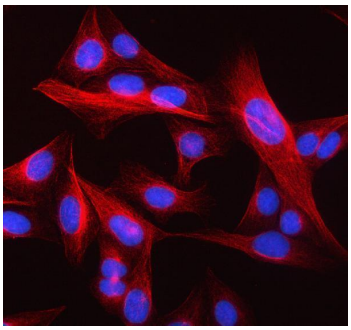
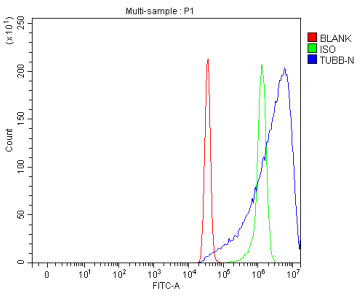


(A01857-1). Beta Tubulin was detected in a paraffin-embedded section of human testicular germ cell tumor tissue. Heat mediated antigen retrieval was performed in EDTA buffer (pH 8.0, epitope retrieval solution). The tissue section was blocked with 10% goat serum. The tissue section was then incubated with 2 ug/ml rabbit anti-Beta Tubulin Antibody (A01857-1) overnight at 4°C. Peroxidase Conjugated Goat Anti-rabbit IgG was used as secondary antibody and incubated for 30 minutes at 37°C. The tissue section was developed using HRP Conjugated Rabbit IgG Super Vision Assay Kit (Catalog # SV0002) with DAB as the chromogen.



IF analysis of Beta Tubulin using anti-Beta Tubulin antibody (A01857-1). Beta Tubulin was detected in an immunocytochemical section of U2OS 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-Beta Tubulin Antibody (A01857-1) overnight at 4°C. Cy3 Conjugated Goat Anti-Rabbit IgG (BA1032) 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.



Flow Cytometry analysis of SiHa cells using anti-Beta Tubulin antibody (A01857-1). Overlay histogram showing SiHa cells stained with A01857-1 (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-Beta Tubulin Antibody (A01857-1, 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.

7 Publications Citing This Product

1. PubMed ID: 10.1016/j.acthis.2017.10.008, Stemness distinctions between the ectomesenchymal stem cells from neonatal and adult mice

2. PubMed ID: 31933182, Shan W,Han F,Xu Y,Shi Y.Stathmin Regulates Spatiotemporal Variation in the Memory Loop in Single-Prolonged Stress Rats. J Mol Neurosci. 2020 Apr;70(4):576-589.doi: 10.1007/s12031-019-01459-w.Epub 2020 Jan 13.PMID: 31933182.

3. PubMed ID: 32201510, Hu X,Lu E,Pan C,Xu Y,Zhu X.Overexpression and biological function of PRDX6 in human cervical cancer.J Cancer.2020 Feb 10;11(9):2390-2400.doi:10.7150/jca.39892.PMID:32201510;PMCID:PMC7066013.

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