BOSTER
antibody and ELISA experts

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Anti-Superoxide Dismutase 1/SOD1 Antibody Picoband®

Catalog Number: PA1345

About SOD1

Superoxide dismutases (SOD) are a class of enzymes that catalyze the dismutation of superoxide into oxygen and hydrogen peroxide. As such, they are an important antioxidant defense in nearly all cells exposed to oxygen. One of the exceedingly rare exceptions is Lactobacillus plantarum and related lactobacilli, which use a different mechanism.Cu,Zn-SOD was found widely distributed in the cell cytosol and in the cell nucleus, consistent with it being a soluble cytosolic protein. Mitochondria and secretory compartments did not label for this protein. In human cells, peroxisomes showed a labeling density slightly less than that of cytoplasm.

Overview

Product Name	Anti-Superoxide Dismutase 1/SOD1 Antibody Picoband®
Reactive Species	Human, Mouse, Rat
Description	Boster Bio Anti-Superoxide Dismutase 1/SOD1 Antibody catalog # PA1345. Tested in IHC, 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	IHC, ICC, WB
Clonality	Polyclonal
Formulation	Each vial contains antibody formulated with stabilizing components, 0.9mg NaCl, 0.2mg Na2HPO4, 0.05mg Thimerosal, 0.05mg NaN3. *This antibody is supplied in a stabilized formulation. Compatibility with conjugation reactions depends on the chemistry of the conjugation method used. For conjugation methods that are not compatible with the stabilizing components present in this formulation, a carrier-free antibody format is required.
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	P00441

Technical Details

Immunogen	A synthetic peptide corresponding to a sequence at the C-terminus of Human SOD1, different from the mouse sequence by two amino acids.
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), IHC(F) and ICC.

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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	Immunohistochemistry (Paraffin-embedded Section), 0.5-1ug/ml, Human, Mouse, Rat Immunocytochemistry , 0.5-1ug/ml, Human, Mouse, Rat Immunohistochemistry (Frozen Section), 0.5-1ug/ml, Mouse, Rat, Human Western blot, 0.1-0.5ug/ml, Human, Mouse, Rat

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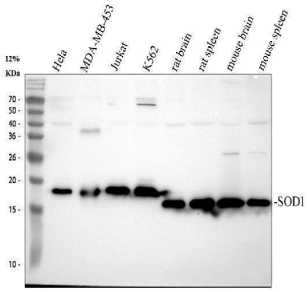
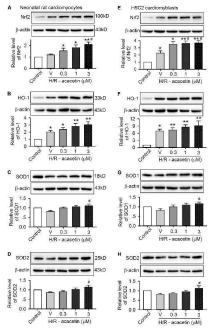
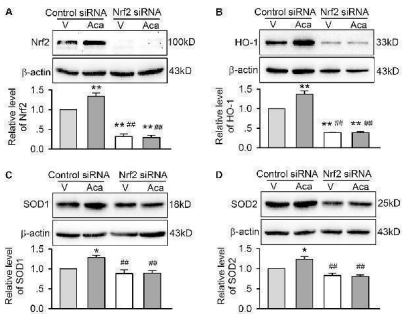
Anti-Superoxide Dismutase 1/SOD1 Antibody Picoband® (PA1345) Images



Western blot analysis of SOD1 using anti-SOD1 antibody (PA1345). Electrophoresis was performed on a 13% 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 Hela whole cell lysates, Lane 2: human MDA-MB-453 whole cell lysates, Lane 3: human Jurkat whole cell lysates, Lane 4: human K562 whole cell lysates, Lane 5: rat brain tissue lysates, Lane 6: rat spleen tissue lysates, Lane 7: mouse brain tissue lysates, Lane 8: mouse spleen tissue lysates. After Electrophoresis, proteins were transferred to a Nitrocellulose membrane at 150mA 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-SOD1 antigen affinity purified polyclonal antibody (Catalog # PA1345) 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 SOD1 at approximately 16-18 kDa. The expected band size for SOD1 is at 16 kDa.



Effects of acacetin on antioxidant-related proteins in cells with hypoxia/reoxygenation (H/R) exposure. Western blots and mean relative levels of Nrf2 (A) , HO-1 (B) , SOD1 (C) , SOD2 (D) in neonatal rat cardiomyocytes without (control) or with hypoxia/reoxygenation exposure in the absence (V, vehicle) or presence of 0.3, 1, or 3 uM acacetin. Western blots and mean relative levels of Nrf2 (E) , HO-1 (F) , SOD1 (G) , SOD2 (H) in H9C2 cardiomyoblasts without (control) or with hypoxia/reoxygenation exposure in the absence or presence of 0.3, 1, or 3 uM acacetin. Data were expressed as mean ± SEM and analyzed by one-way ANOVA followed by Bonferroni-test (n = 5 individual experiments, ∗ P < 0.05, ∗∗ P < 0.01 vs. control; # P < 0.05 vs. hypoxia/reoxygenation alone).Index in PubMed under a CC BY license. PMID: 29867499



Effects of silencing Nrf2 on antioxidant proteins in cells with hypoxia/reoxygenation insult. (A) Western blots and relative levels of Nrf2 in H9C2 cardiomyoblasts transfected with control siRNA or Nrf2 siRNA and subjected to hypoxia/reoxygenation insult in the absence (V, vehicle) or presence of 3 uM acacetin (Aca). (B) Western blots and relative levels of HO-1 in H9C2 cardiomyoblasts with the treatment used in (A) . (C) Western blots and relative levels of SOD1 in H9C2 cardiomyoblasts with the treatment used in (A) . (D) Western blots and relative levels of SOD2 in H9C2 cardiomyoblasts with the treatment used in (A) . Data were expressed as mean ± SEM and analyzed by one-way ANOVA followed by Bonferroni-test (n = 5 individual experiments, ∗

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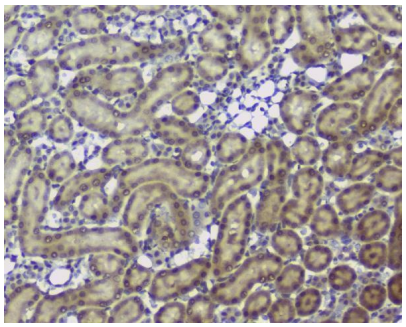
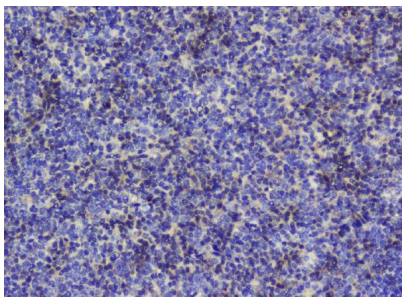
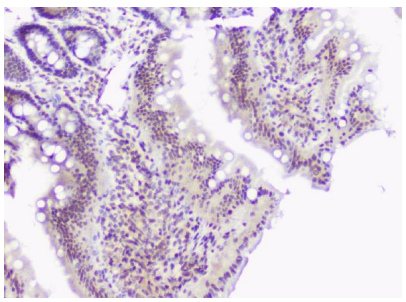
P < 0.05, ∗∗ P < 0.01 vs. vehicle of control siRNA; ## P < 0.01 vs. control siRNA with acacetin).Index in PubMed under a CC BY license. PMID: 29867499



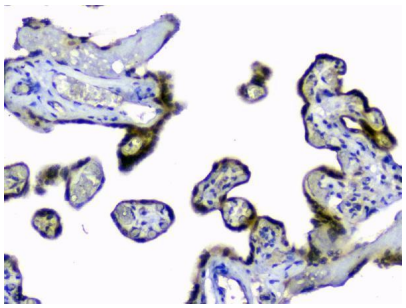
IHC analysis of SOD1 using anti-SOD1 antibody (PA1345). SOD1 was detected in paraffin-embedded section of rat kidney tissue. Heat mediated antigen retrieval was performed in EDTA buffer (pH8.0, epitope retrieval solution). The tissue section was blocked with 10% goat serum. The tissue section was then incubated with 1ug/ml rabbit anti-SOD1 Antibody (PA1345) overnight at 4°C. Biotinylated goat anti-rabbit IgG was used as secondary antibody and incubated for 30 minutes at 37°C. The tissue section was developed using Strepavidin-Biotin-Complex (SABC) (Catalog # SA1022) with DAB as the chromogen.



IHC analysis of SOD1 using anti-SOD1 antibody (PA1345). SOD1 was detected in paraffin-embedded section of human tonsil tissue. Heat mediated antigen retrieval was performed in EDTA buffer (pH8.0, epitope retrieval solution). The tissue section was blocked with 10% goat serum. The tissue section was then incubated with 1ug/ml rabbit anti-SOD1 Antibody (PA1345) overnight at 4°C. Biotinylated goat anti-rabbit IgG was used as secondary antibody and incubated for 30 minutes at 37°C. The tissue section was developed using Strepavidin-Biotin-Complex (SABC) (Catalog # SA1022) with DAB as the chromogen.



IHC analysis of SOD1 using anti-SOD1 antibody (PA1345). SOD1 was detected in paraffin-embedded section of rat small intestine tissue. Heat mediated antigen retrieval was performed in EDTA buffer (pH8.0, epitope retrieval solution). The tissue section was blocked with 10% goat serum. The tissue section was then incubated with 1ug/ml rabbit anti-SOD1 Antibody (PA1345) overnight at 4°C. Biotinylated goat anti-rabbit IgG was used as secondary antibody and incubated for 30 minutes at 37°C. The tissue section was developed using Strepavidin-Biotin-Complex (SABC) (Catalog # SA1022) with DAB as the chromogen.



IHC analysis of SOD1 using anti-SOD1 antibody (PA1345). SOD1 was detected in paraffin-embedded section of human placenta tissue. Heat mediated antigen retrieval was performed in EDTA buffer (pH8.0, epitope retrieval solution). The tissue section was blocked with 10% goat serum. The tissue section was then incubated with 1ug/ml rabbit anti-SOD1 Antibody (PA1345) overnight at 4°C. Biotinylated goat anti-rabbit IgG was used as secondary antibody and incubated for 30 minutes at 37°C. The tissue section was developed using Strepavidin-Biotin-Complex (SABC) (Catalog # SA1022) with DAB as the chromogen.

IHC analysis of SOD1 using anti-SOD1 antibody (PA1345). SOD1 was detected in paraffin-embedded section of mouse

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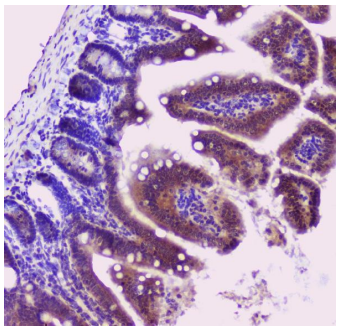
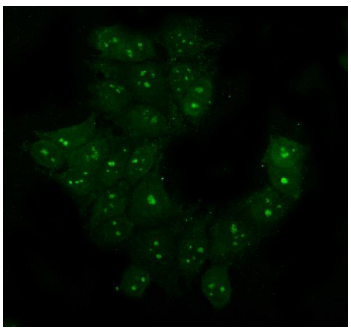


small intestine tissue. Heat mediated antigen retrieval was performed in EDTA buffer (pH8.0, epitope retrieval solution). The tissue section was blocked with 10% goat serum. The tissue section was then incubated with 1ug/ml rabbit anti-SOD1 Antibody (PA1345) overnight at 4°C. Biotinylated goat anti-rabbit IgG was used as secondary antibody and incubated for 30 minutes at 37°C. The tissue section was developed using Strepavidin-Biotin-Complex (SABC) (Catalog # SA1022) with DAB as the chromogen.



IF analysis of SOD1 using anti-SOD1 antibody (PA1345). SOD1 was detected in an immunocytochemical section of MCF-7 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-SOD1 Antibody (PA1345) 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. Visualize using a fluorescence microscope and filter sets appropriate for the label used.

8 Publications Citing This Product

1. PubMed ID: 27443826, Maternal inflammation activated ROS-p38 MAPK predisposes offspring to heart damages caused by isoproterenol via augmenting ROS generation

2. PubMed ID: 25162824, Hou S, Zheng F, Li Y, Gao L, Zhang J. Int J Mol Sci. 2014 Aug 26;15(9):15026-43. Doi: 10.3390/Ijms150915026. The Protective Effect Of Glycyrrhizic Acid On Renal Tubular Epithelial Cell Injury Induced By High Glucose.

3. PubMed ID: 24576329, Guo Z, Qi W, Yu Y, Du S, Wu J, Liu J. Diabetol Metab Syndr. 2014 Feb 28;6(1):29. Doi: 10.1186/1758-5996-6-29. Effect Of Exenatide On The Cardiac Expression Of Adiponectin Receptor 1 And Nadph Oxidase Subunits And Heart Function In Streptozotocin-I...

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