BOSTER BIOLOGICAL TECHNOLOGY
3942 B Valley Ave, Pleasanton, CA 94566
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Anti-SOD2 Antibody Picoband®

Catalog Number: PA1776

About SOD2

SOD2 (Superoxide Dismutase 2), also called IPO-B or MNSOD, is a mitochondrial matrix enzyme that scavenges oxygen radicals produced by the extensive oxidation-reduction and electron transport reactions occurring in mitochondria. This gene is a member of the iron/manganese superoxide dismutase family. Using a somatic cell hybrid panel containing different segments of chromosome 6, they demonstrated that SOD2 is located in the region 6q25.3-qter which, together with the FISH analysis, indicated that SOD2 is in the distal portion of 6q25. The SOD2 gene encodes an intramitochondrial free radical scavenging enzyme that is the first line of defense against superoxide produced as a byproduct of oxidative phosphorylation. Adeno-associated viral delivery of the human SOD2 gene resulted in suppression of optic nerve degeneration and rescue of retinal ganglion cells. The findings suggested that reactive oxygen species contributed to retinal cell death and optic nerve damage in mice with complex I deficiency, and that expression of SOD2 attenuated the disease process.

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Overview

Product Name	Anti-SOD2 Antibody Picoband®
Reactive Species	Human, Mouse, Rat
Description	Boster Bio Anti-SOD2 Antibody catalog # PA1776. 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	P04179

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Technical Details

Immunogen	A synthetic peptide corresponding to a sequence at the N-terminus of human SOD2, identical to the related mouse sequence and different from the related rat sequence by one amino acid.
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.
Purification	Immunogen affinity purified.
Suggested Dilutions	Immunocytochemistry , 0.5-1ug/ml, Human, Mouse, Rat Immunohistochemistry (Paraffin-embedded Section), 0.5-1ug/ml, Human, Rat, Mouse Western blot, 0.1-0.5ug/ml, Human, Mouse, Rat

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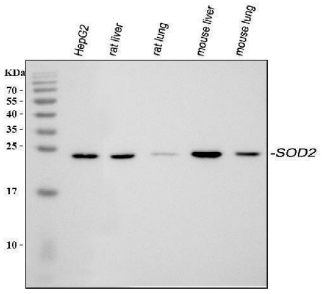
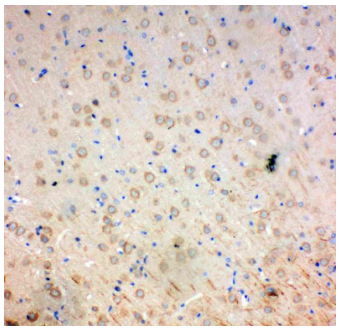
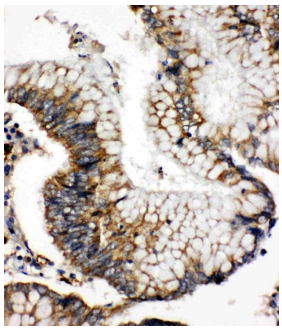
Anti-SOD2 Antibody Picoband® (PA1776) Images



Western blot analysis of SOD2/Mnsod using anti-SOD2/Mnsod antibody (PA1776). 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 HepG2 whole cell lysates, Lane 2: rat liver tissue lysates, Lane 3: rat lung tissue lysates, Lane 4: mouse liver tissue lysates, Lane 5: mouse lung tissue 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-SOD2/Mnsod antigen affinity purified polyclonal antibody (Catalog # PA1776) 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 SOD2/Mnsod at approximately 24 kDa. The expected band size for SOD2/Mnsod is at 25 kDa.



IHC analysis of SOD2/Mnsod using anti-SOD2/Mnsod antibody (PA1776). SOD2/Mnsod was detected in paraffin-embedded section of rat brain tissues. Heat mediated antigen retrieval was performed in citrate buffer (pH6, epitope retrieval solution) for 20 mins. The tissue section was blocked with 10% goat serum. The tissue section was then incubated with 1ug/ml rabbit anti-SOD2/Mnsod Antibody (PA1776) 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 SOD2/Mnsod using anti-SOD2/Mnsod antibody (PA1776). SOD2/Mnsod was detected in paraffin-embedded section of human intestinal cancer tissues. Heat mediated antigen retrieval was performed in citrate buffer (pH6, epitope retrieval solution) for 20 mins. The tissue section was blocked with 10% goat serum. The tissue section was then incubated with 1ug/ml rabbit anti-SOD2/Mnsod Antibody (PA1776) 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 SOD2 using anti-SOD2 antibody (PA1776). SOD2 was detected in an immunocytochemical section of

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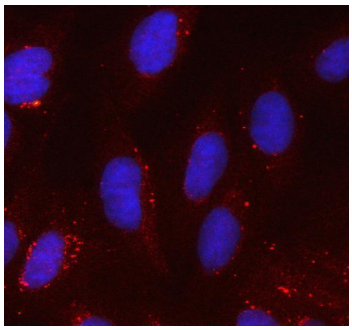
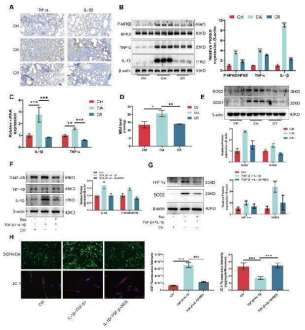


U2OS cells. Enzyme antigen retrieval was performed using IHC enzyme antigen retrieval reagent (AR0022) for 15 mins. The cells were blocked with 10% goat serum. And then incubated with 5 ug/mL rabbit anti-SOD2 Antibody (PA1776) overnight at 4°C. Cy3 Conjugated Goat Anti-Rabbit IgG (BA1032) was used as 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.



Resveratrol attenuates inflammation and oxidative stress in RA-ILD. A Immunohistochemical detection of TNF-alpha and IL-1beta protein expression in lung tissue. B Western blotting was used to detect P-NFKB, NFKB, TNF-alpha, and IL-1beta protein expression in lung tissue. C qRT-PCR for TNF-alpha, IL-1beta RNA expression in lung tissue. D MDA detects lung tissue oxidation levels. E Western blotting to detect SOD1 and SOD2 protein expression in lung tissue. F Western blotting to detect P-NFKB, NFKB, IL-1beta protein expression in MRC-5 cell model after resveratrol treatment. G Western blotting to detect HIF-1alpha, SOD2 protein expression in the MRC-5 cell model after resveratrol treatment. H DCFH-DA and JC-1 were used to detect the levels of ROS and membrane potential in the MRC-5 cell model after resveratrol treatment, respectively. * $P < 0.05$; ** $P < 0.01$; *** $P < 0.001$ Index in PubMed under a CC BY license. PMID: 38745204

1 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

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Anti-SOD2 Antibody

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