SANTA CRUZ BIOTECHNOLOGY, INC.

SOD-3 (A-11): sc-271170

SANTA CRUZ BIOTECHNOLOGY

The Power to Question

BACKGROUND

The superoxide dismutase family is composed of three metalloenzymes (SOD-1, SOD-2 and SOD-3) that catalyze the oxido-reduction of reactive oxygen species (ROS) such as superoxide anion. ROS are implicated in a wide range of degenerative processes, including Alzheimer's disease, Parkinson's disease and ischemic heart disease. Cu/Zn superoxide dismutase-1 (SOD-1) is a well characterized cytosolic scavenger of oxygen free radicals that requires copper and zinc binding to potentiate its enzymatic activity. The SOD-2 precursor is a 222 amino acid protein that is encoded by nuclear chromatin, synthesized in the cytosol and imported posttranslationally into the mitochondrial matrix. SOD-3, also designated extracellular superoxide dismutase (EC-SOD), is an extracellular zinc and copper binding protein that destroys radicals that are toxic to biological systems but that are normally produced within cells. SOD-3 is found in extracellular fluids such as lymph, plasma and synovial fluid.

CHROMOSOMAL LOCATION

Genetic locus: SOD3 (human) mapping to 4p15.2; Sod3 (mouse) mapping to 5 C1.

SOURCE

SOD-3 (A-11) is a mouse monoclonal antibody raised against amino acids 25-130 mapping near the N-terminus of SOD-3 of mouse origin.

PRODUCT

Each vial contains 200 µg IgG_{2a} kappa light chain in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

SOD-3 (A-11) is available conjugated to agarose (sc-271170 AC), 500 µg/ 0.25 ml agarose in 1 ml, for IP; to HRP (sc-271170 HRP), 200 µg/ml, for WB, IHC(P) and ELISA; to either phycoerythrin (sc-271170 PE), fluorescein (sc-271170 FITC), Alexa Fluor® 488 (sc-271170 AF488), Alexa Fluor® 546 (sc-271170 AF546), Alexa Fluor® 594 (sc-271170 AF594) or Alexa Fluor® 647 (sc-271170 AF647), 200 µg/ml, for WB (RGB), IF, IHC(P) and FCM; and to either Alexa Fluor® 680 (sc-271170 AF680) or Alexa Fluor® 790 (sc-271170 AF790), 200 µg/ml, for Near-Infrared (NIR) WB, IF and FCM.

APPLICATIONS

SOD-3 (A-11) is recommended for detection of SOD-3 of mouse, rat and human origin by Western Blotting (starting dilution 1:100, dilution range 1:100-1:1000), immunoprecipitation [1-2 µg per 100-500 µg of total protein (1 ml of cell lysate)], immunofluorescence (starting dilution 1:50, dilution range 1:50-1:500), immunohistochemistry (including paraffin-embedded sections) (starting dilution 1:50, dilution range 1:50-1:500) and solid phase ELISA (starting dilution 1:30, dilution range 1:30-1:3000).

Suitable for use as control antibody for SOD-3 siRNA (h): sc-44699, SOD-3 siRNA (m): sc-44700, SOD-3 shRNA Plasmid (h): sc-44699-SH, SOD-3 shRNA Plasmid (m): sc-44700-SH, SOD-3 shRNA (h) Lentiviral Particles: sc-44699-V and SOD-3 shRNA (m) Lentiviral Particles: sc-44700-V.

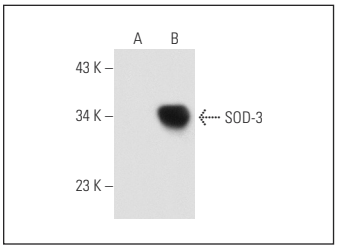
Molecular Weight of SOD-3: 32 kDa.

Positive Controls: SOD-3 (m): 293T Lysate: sc-123712, WEHI-231 whole cell lysate: sc-2213 or TK-1 whole cell lysate: sc-364798.

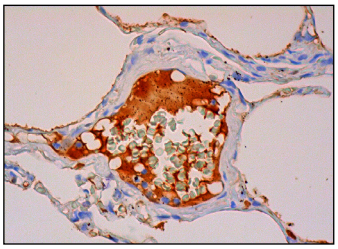
STORAGE

Store at 4° C, **DO NOT FREEZE**. Stable for one year from the date of shipment. Non-hazardous. No MSDS required.

DATA



SOD-3 (A-11): sc-271170. Western blot analysis of SOD-3 expression in non-transfected: sc-117752 (**A**) and mouse SOD-3 transfected: sc-123712 (**B**) 293T whole cell lysates.



SOD-3 (A-11): sc-271170. Immunoperoxidase staining of formalin fixed, paraffin-embedded human lung tissue showing extracellular staining of blood vessels.

SELECT PRODUCT CITATIONS

1. Kim, B.R., et al. 2019. RUNX3 enhances TRAIL-induced apoptosis by upregulating DR5 in colorectal cancer. Oncogene 38: 3903-3918.
2. Eleftheriadis, T., et al. 2020. Mistimed H_2S upregulation, Nrf2 activation and antioxidant proteins levels in renal tubular epithelial cells subjected to anoxia and reoxygenation. Biomed. Rep. 13: 3.
3. Pecoraro, M., et al. 2021. Lumacaftor and matrine: possible therapeutic combination to counteract the inflammatory process in cystic fibrosis. Biomolecules 11: 422.
4. Takashima, C., et al. 2021. A metal-free, disulfide oxidized form of superoxide dismutase 1 as a primary misfolded species with prion-like properties in the extracellular environments surrounding motor neuron-like cells. Int. J. Mol. Sci. 22: 4155.
5. Su, Q., et al. 2021. Bilateral paraventricular nucleus upregulation of extracellular superoxide dismutase decreases blood pressure by regulation of the NLRP3 and neurotransmitters in salt-induced hypertensive rats. Front. Pharmacol. 12: 756671.
6. Li, D., et al. 2021. Metallothionein MT1M suppresses carcinogenesis of esophageal carcinoma cells through inhibition of the epithelial-mesenchymal transition and the SOD1/PI3K axis. Mol. Cells 44: 267-278.
7. Oo, M.W., et al. 2022. SOD3 expression in tumor stroma provides the tumor vessel maturity in oral squamous cell carcinoma. Biomedicines 10: 2729.
8. Meister, M.L., et al. 2022. Berry consumption mitigates the hypertensive effects of a high-fat, high-sucrose diet via attenuation of renal and aortic AT_1R expression resulting in improved endothelium-derived NO bioavailability. J. Nutr. Biochem. E-published.

RESEARCH USE

For research use only, not for use in diagnostic procedures.