

SOD-2 (G-20): sc-18504

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. 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. Unlike SOD-1, which is a homodimeric cytosolic Cu-Zn enzyme, SOD-2 is a homotetrameric manganese enzyme (also known as MnSOD) that functions in the mitochondrion. ROS are implicated in a wide range of degenerative processes, including Alzheimer's disease, Parkinson's disease and ischemic heart disease. Homozygous mutant mice, which lack SOD-2, exhibit dilated cardiomyopathy, accumulation of lipid in liver and skeletal muscle, metabolic acidosis, oxidative DNA damage and respiratory chain deficiencies in heart and skeletal muscle. Polymorphisms in the SOD-2 gene have also been implicated in nonfamilial, idiopathic, dilated cardiomyopathy in humans.

CHROMOSOMAL LOCATION

Genetic locus: SOD2 (human) mapping to 6q25.3; Sod2 (mouse) mapping to 17 A1.

SOURCE

SOD-2 (G-20) is an affinity purified goat polyclonal antibody raised against a peptide mapping within an internal region of SOD-2 of human origin.

PRODUCT

Each vial contains 200 µg IgG in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

Blocking peptide available for competition studies, sc-18504 P, (100 µg peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% BSA).

APPLICATIONS

SOD-2 (G-20) is recommended for detection of SOD-2 of mouse, rat and human origin by Western Blotting (starting dilution 1:200, 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) and solid phase ELISA (starting dilution 1:30, dilution range 1:30-1:3000).

SOD-2 (G-20) is also recommended for detection of SOD-2 in additional species, including equine, canine, bovine, porcine and avian.

Suitable for use as control antibody for SOD-2 siRNA (h): sc-41655, SOD-2 siRNA (m): sc-41656, SOD-2 siRNA (r): sc-270084, SOD-2 shRNA Plasmid (h): sc-41655-SH, SOD-2 shRNA Plasmid (m): sc-41656-SH, SOD-2 shRNA Plasmid (r): sc-270084-SH, SOD-2 shRNA (h) Lentiviral Particles: sc-41655-V, SOD-2 shRNA (m) Lentiviral Particles: sc-41656-V and SOD-2 shRNA (r) Lentiviral Particles: sc-270084-V.

Molecular Weight of SOD-2: 25 kDa.

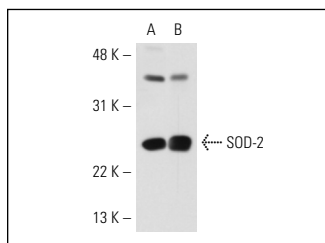
STORAGE

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

RESEARCH USE

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

DATA



SOD-2 (G-20): sc-18504. Western blot analysis of SOD-2 expression in DU 145 (A) and HISM (B) whole cell lysates.

SELECT PRODUCT CITATIONS

- Cheng, Y.K., et al. 2006. Altered expression profile of superoxide dismutase isoforms in nasal polyps from nonallergic patients. *Laryngoscope* 116: 417-422.
- Simão, S., et al. 2010. Increased responsiveness to JNK1/2 mediates the enhanced H₂O₂-induced stimulation of Cl⁻/HCO₃⁻ exchanger activity in immortalized renal proximal tubular epithelial cells from the SHR. *Biochem. Pharmacol.* 80: 913-919.
- García-Macia, M., et al. 2011. Melatonin induces neural SOD2 expression independent of the NFκB pathway and improves the mitochondrial population and function in old mice. *J. Pineal Res.* 50: 54-63.
- Doi, T., et al. 2011. Pre-treatment with N-acetylcysteine upregulates superoxide dismutase 2 and catalase genes in cadmium-induced oxidative stress in the chick omphalocele model. *Pediatr. Surg. Int.* 27: 131-136.
- Termini, L., et al. 2011. Deregulated expression of superoxide dismutase-2 correlates with different stages of cervical neoplasia. *Dis. Markers* 30: 275-281.
- McCommis, K.S., et al. 2011. Hypercholesterolemia increases mitochondrial oxidative stress and enhances the MPT response in the porcine myocardium: beneficial effects of chronic exercise. *Am. J. Physiol. Regul. Integr. Comp. Physiol.* 301: R1250-R1258.
- Vega-Naredo, I., et al. 2012. Melatonin modulates autophagy through a redox-mediated action in female Syrian hamster Harderian gland controlling cell types and gland activity. *J. Pineal Res.* 52: 80-92.

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Try **SOD-2 (E-10): sc-137254** or **SOD-2 (A-2): sc-133134**, our highly recommended monoclonal alternatives to SOD-2 (G-20). Also, for AC, HRP, FITC, PE, Alexa Fluor[®] 488 and Alexa Fluor[®] 647 conjugates, see **SOD-2 (E-10): sc-137254**.