

# SOD-3 (S-19): sc-32222

## 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.

## REFERENCES

- Levanon, D., et al. 1985. Architecture and anatomy of the chromosomal locus in human chromosome 21 encoding the Cu/Zn superoxide dismutase. *EMBO J.* 4: 77-84.
- Bewley, G.C. 1988. cDNA and deduced amino acid sequence of murine Cu/Zn superoxide dismutase. *Nucleic Acids Res.* 16: 2728.
- Beckman, J.S., et al. 1993. ALS, SOD and peroxynitrite. *Nature* 364: 584.
- Sandstrom, J., et al. 1994. 10-fold increase in human plasma extracellular superoxide dismutase content caused by a mutation in heparin-binding domain. *J. Biol. Chem.* 269: 19163-19166.
- Li, Y., et al. 1995. Dilated cardiomyopathy and neonatal lethality in mutant mice lacking manganese superoxide dismutase. *Nat. Genet.* 11: 376-381.

## CHROMOSOMAL LOCATION

Genetic locus: Sod3 (mouse) mapping to 5 C1.

## SOURCE

SOD-3 (S-19) is an affinity purified goat polyclonal antibody raised against a peptide mapping near the N-terminus of SOD-3 of mouse 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-32222 P, (100 µg peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% BSA).

## 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.

## APPLICATIONS

SOD-3 (S-19) is recommended for detection of SOD-3 of mouse and, to a lesser extent, rat 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). Suitable for use as control antibody for SOD-3 siRNA (m): sc-44700, SOD-3 shRNA Plasmid (m): sc-44700-SH and SOD-3 shRNA (m) Lentiviral Particles: sc-44700-V.

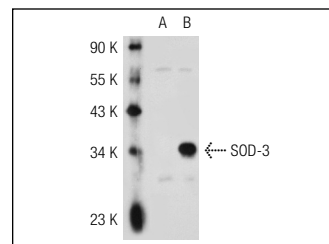
Molecular Weight of SOD-3: 32 kDa.

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

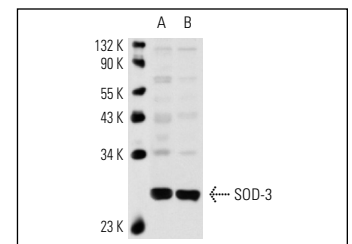
## RECOMMENDED SECONDARY REAGENTS

To ensure optimal results, the following support (secondary) reagents are recommended: 1) Western Blotting: use donkey anti-goat IgG-HRP: sc-2020 (dilution range: 1:2000-1:100,000) or Cruz Marker™ compatible donkey anti-goat IgG-HRP: sc-2033 (dilution range: 1:2000-1:5000), Cruz Marker™ Molecular Weight Standards: sc-2035, TBS Blotto A Blocking Reagent: sc-2333 and Western Blotting Luminol Reagent: sc-2048. 2) Immunoprecipitation: use Protein A/G PLUS-Agarose: sc-2003 (0.5 ml agarose/2.0 ml). 3) Immunofluorescence: use donkey anti-goat IgG-FITC: sc-2024 (dilution range: 1:100-1:400) or donkey anti-goat IgG-TR: sc-2783 (dilution range: 1:100-1:400) with UltraCruz™ Mounting Medium: sc-24941.

## DATA



SOD-3 (S-19): sc-32222. 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 (S-19): sc-32222. Western blot analysis of SOD-3 expression in TK-1 (A) and WEHI-231 (B) whole cell lysates.

## SELECT PRODUCT CITATIONS

- Simão, S., et al. 2010. Increased responsiveness to JNK1/2 mediates the enhanced H<sub>2</sub>O<sub>2</sub>-induced stimulation of Cl<sup>-</sup>/HCO<sub>3</sub><sup>-</sup> exchanger activity in immortalized renal proximal tubular epithelial cells from the SHR. *Biochem. Pharmacol.* 80: 913-919.


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Try **SOD-3 (A-11): sc-271170**, our highly recommended monoclonal alternative to SOD-3 (S-19).