

SOD-3 (4G11G6): sc-101338

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

1. 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.
2. Bewley, G.C. 1988. cDNA and deduced amino acid sequence of murine Cu/Zn superoxide dismutase. *Nucleic Acids Res.* 16: 2728.
3. Beckman, J.S., et al. 1993. ALS, SOD and peroxynitrite. *Nature* 364: 584.

CHROMOSOMAL LOCATION

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

SOURCE

SOD-3 (4G11G6) is a mouse monoclonal antibody raised against extracellular superoxide dismutase purified from aortas of human origin.

PRODUCT

Each vial contains 200 µg IgG₁ kappa light chain in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

APPLICATIONS

SOD-3 (4G11G6) is recommended for detection of SOD-3 of mouse, rat and human origin by Western Blotting (starting dilution 1:200, dilution range 1:100-1:1000), 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.

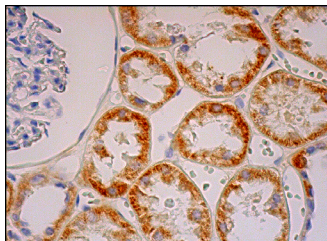
Molecular Weight of SOD-3: 32 kDa.

Positive Controls: Daudi cell lysate: sc-2415, JAR cell lysate: sc-2276 or WI-38 whole cell lysate: sc-364260.

RECOMMENDED SUPPORT REAGENTS

To ensure optimal results, the following support reagents are recommended: 1) Western Blotting: use m-IgGκ BP-HRP: sc-516102 or m-IgGκ BP-HRP (Cruz Marker): sc-516102-CM (dilution range: 1:1000-1:10000), Cruz Marker™ Molecular Weight Standards: sc-2035, UltraCruz® Blocking Reagent: sc-516214 and Western Blotting Luminol Reagent: sc-2048. 2) Immunofluorescence: use m-IgGκ BP-FITC: sc-516140 or m-IgGκ BP-PE: sc-516141 (dilution range: 1:50-1:200) with UltraCruz® Mounting Medium: sc-24941 or UltraCruz® Hard-set Mounting Medium: sc-359850. 3) Immunohistochemistry: use m-IgGκ BP-HRP: sc-516102 with DAB, 50X: sc-24982 and Immunohistomount: sc-45086, or Organo/Limonene Mount: sc-45087.

DATA



SOD-3 (4G11G6): sc-101338. Immunoperoxidase staining of formalin fixed, paraffin-embedded human kidney tissue showing cytoplasmic staining of cells in tubules.

SELECT PRODUCT CITATIONS

1. Gottfredsen, R.H., et al. 2012. The C-terminal proteolytic processing of extracellular superoxide dismutase is redox regulated. *Free Radic. Biol. Med.* 52: 191-197.
2. Gottfredsen, R.H., et al. 2014. The cellular distribution of extracellular superoxide dismutase in macrophages is altered by cellular activation but unaffected by the naturally occurring R213G substitution. *Free Radic. Biol. Med.* 69: 348-356.
3. Conklin, D.J., et al. 2017. Biomarkers of chronic acrolein inhalation exposure in mice: implications for tobacco product-induced toxicity. *Toxicol. Sci.* 158: 263-274.
4. Hines, M.R., et al. 2022. Extracellular biomolecular free radical formation during injury. *Free Radic. Biol. Med.* 188: 175-184.

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.

PROTOCOLS

See our web site at www.scbt.com for detailed protocols and support products.