# SOD-3 (4G11G6): sc-101338



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.

#### **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  $\mu g \ lgG_1$  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.

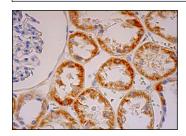
Molecular Weight of SOD-3: 32 kDa.

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-lgGκ BP-HRP: sc-516102 or m-lgGκ 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-lgGκ BP-FITC: sc-516140 or m-lgGκ 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-lgGκ 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**

- 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.
- 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.
- 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.