

SOD-3 (m): 293T Lysate: sc-123712

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.
4. 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.
5. Li, Y., et al. 1995. Dilated cardiomyopathy and neonatal lethality in mutant mice lacking manganese superoxide dismutase. *Nat. Genet.* 11: 376-381.
6. Adachi, T., et al. 1996. An Arginine 213 to glycine mutation in human extracellular-superoxide dismutase reduces susceptibility to Trypsin-like proteinases. *J. Biochem.* 120: 184-188.
7. Adachi, T., et al. 1996. Substitution of glycine for Arginine 213 in extracellular-superoxide dismutase impairs affinity for heparin and endothelial cell surface. *Biochem. J.* 313235-313239.
8. Singh, R.J., et al. 1998. Reexamination of the mechanism of hydroxyl radical adducts formed from the reaction between familial amyotrophic lateral sclerosis-associated Cu/Zn superoxide dismutase mutants and H₂O₂. *Proc. Natl. Acad. Sci. USA* 95: 6675-6680.

CHROMOSOMAL LOCATION

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

PRODUCT

SOD-3 (m): 293T Lysate represents a lysate of mouse SOD-3 transfected 293T cells and is provided as 100 µg protein in 200 µl SDS-PAGE buffer.

STORAGE

Store at -20° C. Repeated freezing and thawing should be minimized. Sample vial should be boiled once prior to use. Non-hazardous. No MSDS required.

APPLICATIONS

SOD-3 (m): 293T Lysate is suitable as a Western Blotting positive control for mouse reactive SOD-3 antibodies. Recommended use: 10-20 µl per lane.

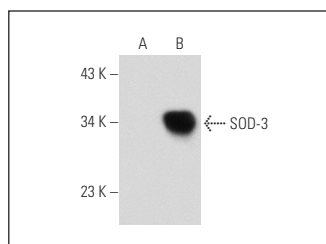
Control 293T Lysate: sc-117752 is available as a Western Blotting negative control lysate derived from non-transfected 293T cells.

SOD-3 (A-11): sc-271170 is recommended as a positive control antibody for Western Blot analysis of enhanced mouse SOD-3 expression in SOD-3 transfected 293T cells (starting dilution 1:100, dilution range 1:100-1:1,000).

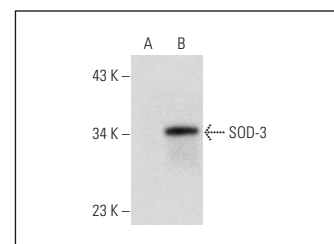
RECOMMENDED SUPPORT REAGENTS

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.

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. 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.

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.