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SOD-1 (m): 293T Lysate: sc-123710

BACKGROUND

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. Enzymatically, SOD-1 facilitates the dismutation of oxygen radicals to hydrogen peroxide and also catalyzes pro-oxidant reactions, which include the peroxidase activity and hydroxyl radical generating activity. SOD-1 is ubiquitously expressed in somatic cells and functions as a homodimer. Defects in the gene encoding SOD-1 have been implicated in the progression of neurological diseases, including amyotrophic lateral sclerosis (ALS), a neurodegenerative disease characterized by the loss of spinal motor neurons, Down syndrome and Alzheimer's disease. In familial ALS, several mutations in SOD-1 predominate, resulting in the loss of zinc binding, the loss of scavenging activity of SOD-1, and correlate with an increase in neurotoxicity and motor neuron death.

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. Orrell, R., et al. 1995. A novel SOD mutant and ALS. *Nature* 374: 504-505.
5. 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.
6. Shaw, C.E., et al. 1998. Mutations in all five exons of SOD-1 may cause ALS. *Ann. Neurol.* 43: 390-394.
7. Bruijn, L.I., et al. 1998. Aggregation and motor neuron toxicity of an ALS-linked SOD-1 mutant independent from wild-type SOD-1. *Science* 281: 1851-1854.

CHROMOSOMAL LOCATION

Genetic locus: Sod1 (mouse) mapping to 16 C3.3.

PRODUCT

SOD-1 (m): 293T Lysate represents a lysate of mouse SOD-1 transfected 293T cells and is provided as 100 µg protein in 200 µl SDS-PAGE buffer.

APPLICATIONS

SOD-1 (m): 293T Lysate is suitable as a Western Blotting positive control for mouse reactive SOD-1 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.

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.

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.