

Mn SOD (Human) Protein

Catalog# SPR-131A/B/C

Size: 50/100/200µg

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This product is for *in vitro* research use only and is not intended for use in humans or animals

StressMarq

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Product	Recombinant Human Mn SOD Protein, his-tagged
Source	Human recombinant made in E. coli, GeneBank Accession Number: BC070913
Cited Applications	WB
Purity	>90%
Format	Purified Protein in 50mM Tris/HCl pH7.7, 0.15M NaCl, 5mM DTT, 10% glycerol.
Concentration	0.5mg/mL
Storage and stability	-20°C; 1 year+; shipped on cold packs or ambient

Scientific Background

Superoxide dismutase (SOD) is an endogenously produced intracellular enzyme present in almost every cell in the body (3). It works by catalyzing the dismutation of the superoxide radical O_2^- to O_2 and H_2O_2 , which are then metabolized to H_2O and O_2 by catalase and glutathione peroxidase (2, 5). In general, SODs play a major role in antioxidant defense mechanisms (4).

There are two main types of SOD in mammalian cells. One form (SOD1) contains Cu and Zn ions as a homodimer and exists in the cytoplasm. The two subunits of 16 kDa each are linked by two cysteines forming an intra-subunit disulphide bridge (3). The second form (SOD2) is a manganese containing enzyme and resides in the mitochondrial matrix. It is a homotetramer of 80 kDa. The third form (SOD3 or EC-SOD) is like SOD1 in that it contains Cu and Zn ions, however it is distinct in that it is a homotetramer, with a mass of 30 kDa and it exists only in the extracellular space(8). SOD3 can also be distinguished by its heparin-binding capacity (1).

Selected References

1. Adachi T., et al. (1992). *Clin. Chim. Acta.* 212: 89-102.
2. Barrister J.V., et al. (1987). *Crit. Rev. Biochem.* 22: 111-180.
3. Furukawa Y., and O'Halloran T. (2006). *Antioxidants & Redox Signaling.* 8 (No 5): 6.
4. Gao B., et al. (2003). *Am J Physiol Lung Cell Mol Physiol* 284: L917-L925.
5. Hassan H.M. (1988). *Free Radical Biol. Med.* 5: 377-385.
6. Kurobe N., et al. (1990) *Clinica Chimica Acta.* 192: 171-180.
7. Ojika T., et al. (1991) *Acta Histochem Cytochem.* 24(50): 489-495.
8. Wispe J.R., et al. (1989) *BBA.* 994: 30-36.

Certificate of Analysis

This product has been certified >90% pure using SDS-PAGE analysis.

Material Safety Data Sheet

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The below information is believed to be correct but does not purport to be all inclusive and shall be used only as a guide. StressMarq shall not be held liable for any damage resulting from handling or from contact with the above product. See the Technical Specification, Packing Slip, Invoice, and Product Catalogue for additional terms and conditions of sale.

Hazardous Ingredients

The physical, chemical and toxicological properties of these components have not been fully investigated. It is recommended that all laboratory personnel follow standard laboratory safety procedures when handling this product. Safety procedures should include wearing OSHA approved safety glasses, gloves and protective clothing. Direct physical contact with this product should be avoided.

<u>Known Hazardous Components</u>	<u>CAS Number</u>	<u>Percent</u>
None		

Physical Data

This product consists of purified protein shipped on gel packs. The physical properties of this product have not been investigated thoroughly.

Fire and Explosion Hazard and Reactivity Data

NOT APPLICABLE

Toxicological Properties

May be harmful by inhalation, ingestion, or skin absorption. The toxicological properties of this product have not been investigated thoroughly. Exercise due caution.

Preventative Measures

Wear chemical safety goggles and compatible chemical-resistant gloves. Avoid inhalation, contact with eyes, skin or clothing.

Spill and Leak Procedures

Observe all federal, state and local environmental regulations.

- Wear protective equipment.
- Absorb on sand or vermiculite and place in closed containers for disposal.
- Dispose or mix the material with a combustible solvent and burn in a chemical incinerator equipped with an afterburner and scrubber.

First Aid Measures

- If swallowed, wash out mouth with water, provided person is conscious. Call a physician.
- In case of skin contact, flush with copious amounts of water for at least 15 minutes. Remove contaminated clothing and shoes. If a rash or other irritation develops, call a physician.
- If inhaled, remove to fresh air. If breathing becomes difficult, call a physician.
- In case of eye contact, flush with copious amounts of water for at least 15 minutes while separating the eyelids with fingers. Call a physician.

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