SOD Protein

Human Recombinant Superoxide dismutase Protein Preformed Fibrils
Catalog No. SPR-470

Product Name

SOD Protein

Description

Human Recombinant Superoxide dismutase Protein Preformed Fibrils

Applications

WB, SDS-PAGE, In vivo assay, In vitro assay

Concentration

Lot/batch specific. See included datasheet.

Conjugates

No tag

Nature

Recombinant

Species

Human

Expression System

E. coli

Purity

>95%

Protein Length

Full Length

Field Of Use

Not for use in humans. Not for use in diagnostics or therapeutics. For research use only.

Properties

Storage Buffer

PBS pH 7.4

Storage Temperature

-80ºC

Shipping Temperature

Dry Ice. Shipping note: Product will be shipped separately from other products purchased in the same order.

Purification

Ion-exchange Purified

Specificity

15.936 kDa

Cite This Product

Human Recombinant SOD Protein (StressMarq Biosciences Inc., Victoria BC CANADA, Catalog # SPR-470)

Certificate Of Analysis

Certified >95% pure using SDS-PAGE analysis.

Biological Description

Alternative Names

Superoxide dismutase1 Protein, ALS1 Protein , SOD1 Protein, IPOA Protein

Research Areas

Cancer, Cell Signaling, Chaperone Proteins, Oxidative Stress, Protein Trafficking

Cellular Localization

Cytoplasm, Mitochondrion, Nucleus

Accession Number

NP_000445.1

Gene ID

6647

Swiss Prot

P00441

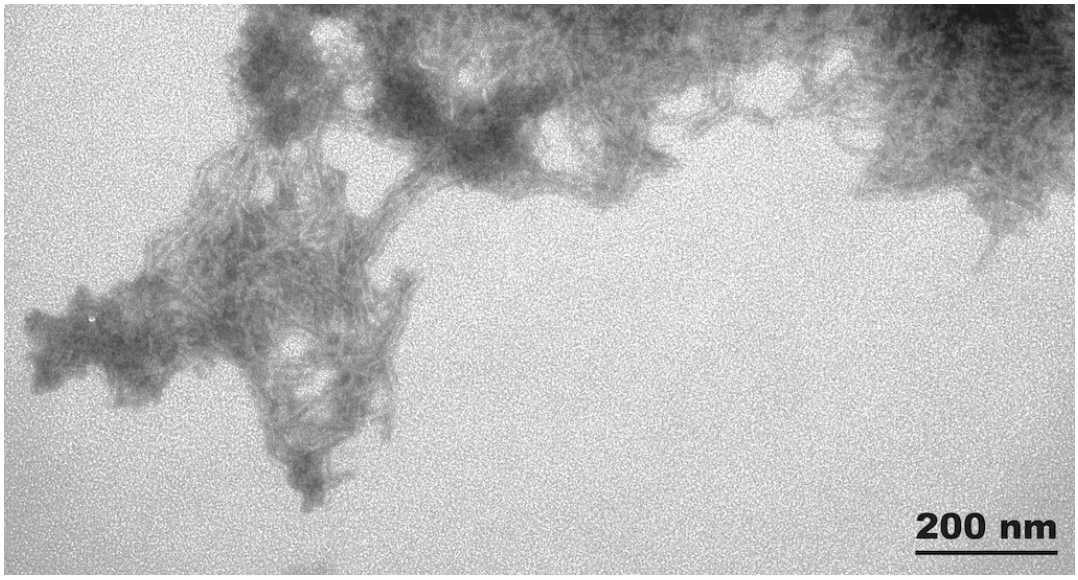
Scientific Background

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 $O2^-$ to O2 and H2O2, which are then metabolized to H2O and O2 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 extra-cellular space (7). SOD3 can also be distinguished by its heparin-binding capacity (1). Studies have shown that in vitro, Cu-Zn SOD (SOD1) fibrils are transduced into cells and function as seeds to trigger the aggregation of endogenously expressed SOD1 (9).

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., O'Halloran T. (2006). Antioxidants & Redo Signaling. Vol 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) Biomedical Research. 11: 187-194
7. Wispe J.R., et al. (1989) BBA. 994: 30-36.
8. Xiao-Hong Liu., et al. (1993) Brain Research. 625: 29-37. 9. Furukawa Y., et al. (2013) FEBS 587(16): 2500-2505.

Product Images



TEM of Human Recombinant Superoxide dismutase Protein Preformed Fibrils (SPR-470)

Product Citations (0)

Currently there are no citations for this product.

Reviews

There are no reviews yet.