

PRODUCT INFORMATION



SOD2/Mn-SOD (human, recombinant)

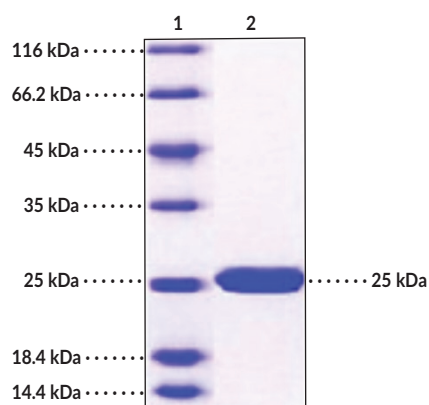
Item No. 32029

Overview and Properties

Synonyms: IPOB, MVCD6, Superoxide Dismutase 2/Manganese SOD
Source: Recombinant human SOD2/Mn-SOD expressed in *E. coli*
Amino Acids: 25-222
Molecular Weight: 22.3 kDa
Storage: -80°C (as supplied)
Stability: ≥1 year
Purity: ≥97% estimated by SDS-PAGE
Supplied in: Lyophilized from sterile PBS, pH 7.5

Information represents the product specifications. Batch specific analytical results are provided on each certificate of analysis.

Image



Lane 1: MW Markers
Lane 2: SOD2/Mn-SOD (human, recombinant)

WARNING
THIS PRODUCT IS FOR RESEARCH ONLY - NOT FOR HUMAN OR VETERINARY DIAGNOSTIC OR THERAPEUTIC USE.

SAFETY DATA
This material should be considered hazardous until further information becomes available. Do not ingest, inhale, get in eyes, on skin, or on clothing. Wash thoroughly after handling. Before use, the user must review the complete Safety Data Sheet, which has been sent via email to your institution.

WARRANTY AND LIMITATION OF REMEDY
Buyer agrees to purchase the material subject to Cayman's Terms and Conditions. Complete Terms and Conditions including Warranty and Limitation of Liability information can be found on our website.

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Description

Superoxide dismutase 2 (SOD2)/manganese SOD (Mn-SOD) is an antioxidant enzyme that protects cells from oxidative stress by scavenging superoxide anions.¹ It exists as a homotetramer where each monomer is composed of an N-terminal α -hairpin domain and a C-terminal α/β domain that contain Mn-binding catalytic active sites.^{1,2} SOD2 is expressed in the mitochondria and is localized to the mitochondrial matrix where it catalyzes the dismutation of superoxide to hydrogen peroxide and oxygen by alternating reduction and reoxidation of Mn at the enzyme active site.¹ Genetic deletion of *Sod2* in mice induces metabolic acidosis and lipid accumulation in the liver and skeletal muscle, and is perinatal lethal.³ Transgenic SOD2 overexpression reduces superoxide levels in the hippocampal CA1 region and extends the lifespan of aged mice.⁴ SOD2 expression is reduced in tumors from patients with hepatocellular carcinoma (HCC) and this decrease is associated with increased tumor number, metastasis, and reduced survival.⁵ SOD2 SNPs have been found in patients with non-Hodgkin's lymphoma, lung cancer, or colorectal cancer.⁶ Cayman's SOD2/Mn-SOD (human, recombinant) protein consists of 199 amino acids and has a calculated molecular weight of 22.3 kDa. By SDS-PAGE, under reducing conditions, the apparent molecular mass of the protein is approximately 25 kDa.

References

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2. Perry, J.J.P., Shin, D.S., Getzoff, E.D., *et al.* The structural biochemistry of the superoxide dismutases. *Biochem. Biophys. Acta.* **1804(2)**, 245-262 (2010).
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4. Hu, D., Cao, P., Thiels, E., *et al.* Hippocampal long-term potentiation, memory, and longevity in mice that overexpress mitochondrial superoxide dismutase. *Neurobiol. Learn. Mem.* **87(3)**, 372-384 (2007).
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6. Kang, S.W. Superoxide dismutase 2 gene and cancer risk: Evidence from an updated meta-analysis. *Int. J. Clin. Exp. Med.* **8(9)**, 14647-14655 (2015).

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