

Superoxide Dismutase 1 (Human)

Background : Superoxide dismutase (SOD) is an antioxidant enzyme involved in the defense system against reactive oxygen species (ROS). SOD catalyzes the dismutation reaction of superoxide radical anion (O_2^-) to hydrogen peroxide, which is then catalyzed to innocuous O_2 and H_2O by glutathione peroxidase and catalase. Several classes of SOD have been identified. These include intracellular copper, zinc SOD (Cu, Zn-SOD/SOD-1), mitochondrial manganese SOD (Mn-SOD/SOD-2) and extracellular Cu, Zn-SOD (EC-SOD/SOD-3) (1). SOD-1 is found in all eukaryotic species as a homodimeric 32-kDa enzyme containing one each of Cu and Zn ion per subunit (2). The manganese containing 80-kDa tetrameric enzyme SOD2, is located in the mitochondrial matrix in close proximity to a primary endogenous source of superoxide, the mitochondrial respiratory chain (3). SOD-3 is a heparin-binding multimer of disulfide-linked dimers, primarily expressed in human lungs, vessel walls and airways (4). SOD-4 is a copper chaperone for superoxide dismutase (CCS), which specifically delivers Cu to copper/zinc superoxide dismutase. CCS may activate copper/zinc superoxide dismutase through direct insertion of the Cu cofactor.

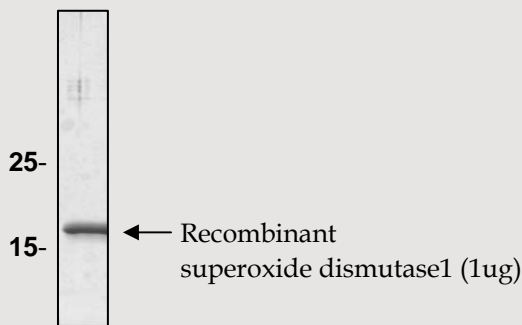
Source : Purified from *E.coli* expressing the human superoxide dismutase 1 gene

Molecular Weight : 16 kDa

Packaging size : 0.5 mg

Concentration : 1.0 mg/ml

Storage : Superoxide dismutase 1 is supplied with a vial of storage buffer (20mM Tris, pH7.5/1mM EDTA). Store at -80°C .



Background Reference:

- 1) Kunitake, S. et al. (2000) Br. J. Cancer. 83, 928-934.
- 2) Strange, R. W. et al. (2003) J. Mol. Biol. 328, 877-891.
- 3) Weisiger, R. A., and Fridovich, I. (1973) J. Biol. Chem. 248, 3582-3592.
- 4) Enghild, J. J. et al. (1999) Biochem J. 317, 51-57.

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