

Product Information



Cu/Zn SOD (rat) Polyclonal Antibody

Item No. 10011387

Contents:	This vial contains affinity-purified antibody at a concentration of 1 mg/ml in PBS, pH 7.0, containing 0.1% sodium azide and 50% glycerol
Synonyms:	Cu/Zn Superoxide Dimutase, SOD1
Antigen:	Rat Cu/Zn SOD
Host:	Rabbit
Cross Reactivity:	(+) Human, mouse, bovine, and rat Cu/Zn SOD. Detects 23 kDa (human) and 19 kDa (other species) proteins corresponding to the molecular mass of Cu/Zn superoxide dismutase (SOD) on SDS-PAGE immunoblots.
Stability:	≥1 year at -20°C
Applications:	Western blot (WB), immunoprecipitation, and immunohistochemistry. ¹ The recommended starting concentration for WB is 1.0 mg/ml; 0.5 µg/ml, was found to be sufficient for detection of Cu/Zn SOD in 20 µg of rat brain tissue extract. Other applications were not attempted and therefore optimal working dilutions should be determined empirically.

Superoxide dismutase (SOD) is an endogenously produced intracellular enzyme present in almost every cell in the body.² 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.^{3,4} In general, SODs play a major role in antioxidant defense mechanisms.⁵

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 cystines forming an intra-subunit disulphide bridge.² 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.⁶ SOD3 can also be distinguished by its heparin-binding capacity.⁷

References

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3. Bannister, J.V., Bannister, W.H., and Rotilio, G. Aspects of the structure, function, and applications of superoxide dismutase. *Crit. Rev. Biochem. Mol. Biol.* **22(2)**, 111-180 (1987).
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6. Wispé, J.R., Clark, J.C., Burhans, M.S., *et al.* Synthesis and processing of the precursor for human manganese-superoxide dismutase. *Biochim. Biophys. Acta* **994(1)**, 30-36 (1989).
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WARNING: THIS PRODUCT IS NOT FOR HUMAN OR ANIMAL DISEASE DIAGNOSIS OR THERAPEUTIC DRUG USE.

MATERIAL SAFETY DATA

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