

# Anti-Cu/Zn SOD

## Catalog# SPC-116C/D

Size: 25/100µg

Product	Rabbit anti-Cu/Zn SOD antibody, polyclonal
Clone	N/A
Immunogen	Human Cu/Zn SOD
Host and Subclass	Rabbit polyclonal
Cited Applications	WB (6,8), IP (8), EIA (6), IHC(7)
Specificity	Detects 23kDa (human) and 19kDa (other species) proteins, corresponding to the molecular mass of Cu/Zn superoxide dismutase (SOD) on SDS-PAGE immunoblots
Species cross-reactivity	Human, Rat, Mouse, Bovine, Monkey, Coral, Dog, Hamster, Pig, Rabbit, Sheep, <i>Xenopus</i>
Format	Affinity (antigen) purified. PBS (pH7.0), 0.1% NaN <sub>3</sub> , 50% glycerol.
Concentration and working dilution	1.0mg/ml; 0.2µg/ml was sufficient for detection of Cu/Zn SOD in 20µg of HeLa cell lysate
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<sub>2</sub><sup>-</sup> to O<sub>2</sub> and H<sub>2</sub>O<sub>2</sub>, which are then metabolized to H<sub>2</sub>O and O<sub>2</sub> 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(9). 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; 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. Ojika, T. et al. (1991). *Acta Histochem Cytochem.* 24(5): 489-495.
8. Shinder, G.A. et al. (2001). *J. Biol. Chem.* 276(16):12791-12796.
9. Wispe, JR et al. (1989) *BBA.* 994: 30-36.

### Certificate of Analysis

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0.2 µg/mL of SPC-116 was sufficient for detection of Cu/Zn SOD in 20µg of HeLa cell lysate by colorimetric immunoblot analysis using Goat anti-rabbit IgG:AP as the secondary antibody.

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# Material Safety Data Sheet

## Anti-Cu/Zn SOD (Polyclonal Antibody) SPC-116

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

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.

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### 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>
Sodium Azide	26628-22-8	0.1

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### Physical Data

This product consists of whole rabbit serum containing 0.1% sodium azide in 50% glycerol shipped on gel packs. The physical properties of this product have not been investigated thoroughly.

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### Fire and Explosion Hazard and Reactivity Data

NOT APPLICABLE

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### 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.

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### Preventative Measures

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

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### 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.

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### 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.