

# Recombinant Human Cu/Zn Superoxide Dismutase, His

## Information

Gene ID	6647		
Accession #	P00441		
Alternate Names	SOD1		
Source	Escherichia coli.		
M.Wt	Approximately 39.9 kDa, a homodimer, non-glycosylated polypeptide chain containing 2 $\times$ 189 amino acids with Met, Gly and 10 $\times$ His at N-terminus.		
AA Sequence	MGHHHHHHH HHSSGHIEGR HMTYARAAAR QARALEATKA VCVLKGDGPV QGIINFEQKE SNGPVKVWGS IKGLTEGLHG FHVHEFGDNT AGCTSAGPHF NPLSRKHGGP KDEERHVGDL GNVTADKDGV ADVSIEDSVI SLSGDHCIIG RTLVVHEKAD DLGKGGNEES TKTGNAGSRL ACGVIGIAQ		
Appearance	Sterile Filtered White lyophilized (freeze-dried) powder.		
Stability & Storage	Use a manual defrost freezer and avoid repeated freeze-thaw cycles - 12 months from date of receipt, -20 to -70 °C as supplied - 1 month, 2 to 8 °C under sterile conditions after reconstitution - 3 months, -20 to -70 °C under sterile conditions after reconstitution		
Formulation	Lyophilized from a 0.2 $\mu\text{m}$ filtered concentrated solution in PBS, pH 7.4.		
Reconstitution	We recommend that this vial be briefly centrifuged prior to opening to bring the contents to the bottom. Reconstitute in sterile distilled water or aqueous buffer containing 0.1 % BSA to a concentration of 0.1-1.0 mg/mL. Stock solutions should be apportioned into working aliquots and stored at $\leq$ -20 °C. Further dilutions should be made in appropriate buffered solutions.		
Biological Activity	Fully biologically active when compared to standard. The potency per mg was determined by pyrogallol autoxidation method and was found to be more than 1600 U/mg.		
Shipping Condition	Gel pack.		
Handling	Centrifuge the vial prior to opening.		
Usage	For Research Use Only! Not to be used in humans.		
Components and Storage			

# Components and Storage

Components	100µg	500µg	
Recombinant Human Cu/Zn Superoxide Dismutase, His	100µg	500µg	
Use a manual defrost freezer and avoid repeated freeze-thaw cycles			
- 12 months from date of receipt, -20 to -70 °C as supplied			

- 1 month, 2 to 8 °C under sterile conditions after reconstitution

- 3 months, -20 to -70 °C under sterile conditions after reconstitution

#### Quality Control

 Purity
 > 95 % by SDS-PAGE and HPLC analyses.

 Endotoxin
 Less than 1 EU/μg of rHuCu/Zn SOD, His as determined by LAL method.

### Description

Superoxide dismutase catalyzes the reaction between superoxide anions and hydrogen to yield molecular oxygen and hydrogen peroxide. Cu/Zn superoxide dismutase also named as SOD1, is an enzyme encoded by the SOD1 gene in humans, located on chromosome 21. The SOD1 binds Cu and Zn ions and is one of three SODs responsible for destroying free superoxide radicals in the body. It has been shown to interact with CCS and Bcl-2. The malfunction of SOD1 may increase the risk of illnesses like age-related muscle mass loss (sarcopenia), early development of cataracts, macular degeneration, thymic involution, hepatocellular carcinoma, shortened lifespan, keratoconus and amyotrophic lateral sclerosis.

# Reference

1. Kwiatowski J, Skarecky D, Ayala FJ. 1992. Mol Phylogenet Evol, 1: 72-82

2. Bachus R, Claus A, Megow D, et al. 1995. J Neurol Sci, 129 Suppl: 93-5

3. Qi X, Guy J, Nick H, et al. 1997. Invest Ophthalmol Vis Sci, 38: 1203-12

APENBI

4. Chou CM, Huang CJ, Shih CM, et al. 2005. Ann N Y Acad Sci, 1042: 303-13

5. Raja SB, Murali MR, Roopa K, et al. 2011. Biomed Pharmacother, 65: 560-8.



APENBIC