

Recombinant Human SOD2 Protein(Trx Tag)

Catalog Number: PDEH100655

Note: Centrifuge before opening to ensure complete recovery of vial contents.

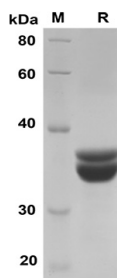
Description

Species	Human
Source	E.coli-derived Human SOD2 protein Lys25-Lys222, with an N-terminal Trx
Calculated MW	41.8 kDa
Observed MW	36 kDa
Accession	P04179
Bio-activity	Not validated for activity

Properties

Purity	> 80% as determined by reducing SDS-PAGE.
Endotoxin	< 10 EU/mg of the protein as determined by the LAL method
Storage	Generally, lyophilized proteins are stable for up to 12 months when stored at -20 to -80 °C. Reconstituted protein solution can be stored at 4-8°C for 2-7 days. Aliquots of reconstituted samples are stable at < -20°C for 3 months.
Shipping	This product is provided as lyophilized powder which is shipped with ice packs.
Formulation	Lyophilized from a 0.2 µm filtered solution in PBS with 5% Trehalose and 5% Mannitol.
Reconstitution	It is recommended that sterile water be added to the vial to prepare a stock solution of 0.5 mg/mL. Concentration is measured by UV-Vis.

Data



SDS-PAGE analysis of Human SOD2 proteins, 2µg/lane of Recombinant Human SOD2 proteins was resolved with SDS-PAGE under reducing conditions, showing bands at 36 KD

Background

Superoxide Dismutases (SODs), originally identified as Indophenoloxidases (IPOs), are enzymes that catalyze the conversion of naturally-occurring but harmful superoxide radicals into molecular oxygen and hydrogen peroxide. Superoxide Dismutases 2 (SOD2), also known as Manganese (Mn) SOD, mitochondrial SOD, and IPO-B, is an intramitochondrial 22 kDa homotetramer. Each SOD2 monomer binds one Mn^{2+} ion. Three isozymes of SOD have been identified and are functionally related but have very modest sequence homology. SOD2 shares only 23% and 17% sequence identity with SOD1 and SOD3, respectively. SOD2 is, however, well conserved from species to species and shares 90% and 87% homology with mouse and rat SOD2, respectively. Oxidative stress has been implicated in many diseases and the chief source of reactive oxygen species within the cell is the mitochondrion. SOD2 is a free radical scavenging enzyme that protects against damage from superoxide produced as a byproduct of oxidative phosphorylation. SOD2 is required for normal biologic function of tissues by maintaining the integrity of mitochondrial enzymes susceptible to inactivation by superoxide. Mutations in this gene have been associated with idiopathic cardiomyopathy (IDC), premature aging, sporadic motor neuron disease, and cancer.