

DESCRIPTION

Species Reactivity	Human/Mouse/Rat
Specificity	Detects human, mouse, and rat SOD2 in Western blots. In Western blots, no cross-reactivity with recombinant human SOD1 or SOD3 is observed.
Source	Monoclonal Mouse IgG ₁ Clone # 349810
Purification	Protein A or G purified from hybridoma culture supernatant
Immunogen	<i>E. coli</i> -derived recombinant human SOD2/Mn-SOD Lys25-Lys222 Accession # P04179
Conjugate	Alexa Fluor 405 Excitation Wavelength: 405 nm Emission Wavelength: 421 nm
Formulation	Supplied 0.2mg/ml in 1X PBS with RDF1 and 0.09% Sodium Azide *Contains <0.1% Sodium Azide, which is not hazardous at this concentration according to GHS classifications. Refer to the Safety Data Sheet (SDS) for additional information and handling instructions.

APPLICATIONS

Please Note: Optimal dilutions should be determined by each laboratory for each application. [General Protocols](#) are available in the Technical Information section on our website.

Western Blot	Optimal dilution of this antibody should be experimentally determined.
Immunocytochemistry	Optimal dilution of this antibody should be experimentally determined.

PREPARATION AND STORAGE

Shipping	The product is shipped with polar packs. Upon receipt, store it immediately at the temperature recommended below.
Stability & Storage	Protect from light. Do not freeze. 12 months from date of receipt, 2 to 8 °C as supplied

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 Mn²⁺ 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.

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