

## DESCRIPTION

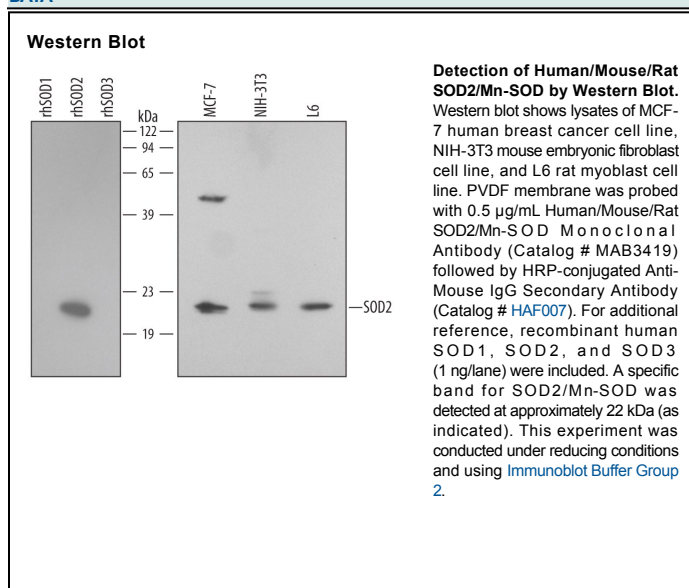
<b>Species Reactivity</b>	Human/Mouse/Rat
<b>Specificity</b>	Detects human, mouse, and rat SOD2 in Western blots. In Western blots, no cross-reactivity with recombinant human SOD1 or SOD3 is observed.
<b>Source</b>	Monoclonal Mouse IgG <sub>1</sub> Clone # 349810
<b>Purification</b>	Protein A or G purified from hybridoma culture supernatant
<b>Immunogen</b>	<i>E. coli</i> -derived recombinant human SOD2/Mn-SOD Lys25-Lys222 Accession # P04179
<b>Formulation</b>	Lyophilized from a 0.2 μm filtered solution in PBS with Trehalose. See Certificate of Analysis for details. *Small pack size (-SP) is supplied as a 0.2 μm filtered solution in PBS.

## 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.

	Recommended Concentration	Sample
<b>Western Blot</b>	0.5 μg/mL	See Below
<b>Immunocytochemistry</b>	8-25 μg/mL	Immersion fixed MCF-7 human breast cancer cells

## DATA



## PREPARATION AND STORAGE

<b>Reconstitution</b>	Reconstitute at 0.5 mg/mL in sterile PBS.
<b>Shipping</b>	The product is shipped at ambient temperature. Upon receipt, store it immediately at the temperature recommended below. *Small pack size (-SP) is shipped with polar packs. Upon receipt, store it immediately at -20 to -70 °C
<b>Stability &amp; Storage</b>	<b>Use a manual defrost freezer and avoid repeated freeze-thaw cycles.</b> <ul style="list-style-type: none"> <li>● 12 months from date of receipt, -20 to -70 °C as supplied.</li> <li>● 1 month, 2 to 8 °C under sterile conditions after reconstitution.</li> <li>● 6 months, -20 to -70 °C under sterile conditions after reconstitution.</li> </ul>

## 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<sup>2+</sup> 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.