PRODUCT INFORMATION

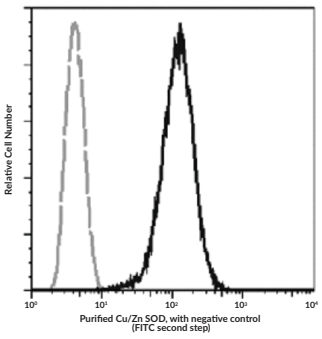
Cu/Zn SOD Monoclonal Antibody (Clone 11)

Item No. 37087

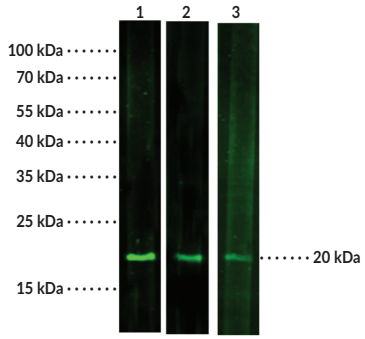
Overview and Properties

Contents:	This vial contains 50, 100, or 200 µl of protein A-affinity purified monoclonal antibody.
Synonyms:	Cu/Zn Superoxide Dismutase, SOD1
Immunogen:	Recombinant human Cu/Zn SOD
Cross Reactivity:	(+) Cu/Zn SOD
Species Reactivity:	(+) Human
Form:	Liquid
Storage:	-80°C (as supplied)
Stability:	≥1 year
Storage Buffer:	0.2 µm filtered solution in PBS
Clone:	11
Host:	Mouse
Isotype:	IgG2b
Applications:	Flow cytometry (FC), Immunoprecipitation (IP), and Western blot (WB); the recommended starting dilution is 1:100-1:500 for FC, 1:500-1:1,000 for WB, and 0.2-1 µl/mg of lysate for IP. Other applications were not tested, therefore optimal working concentration/dilution should be determined empirically.

Images

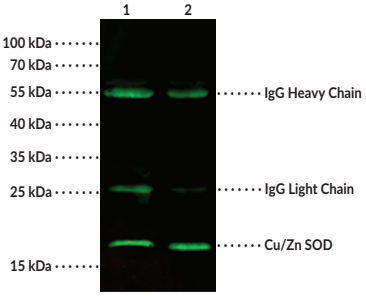


Flow cytometric analysis of human Cu/Zn SOD expression in HeLa cells. The cells were treated according to the manufacturer's manual (BD Pharmingen™), then stained with purified Cu/Zn SOD Monoclonal Antibody (Clone 11) followed by a FITC-conjugated secondary antibody. The fluorescence histograms were derived from gated events with the forward and side light-scatter characteristics of intact cells.



Lane 1: Jurkat whole cell lysate (30 µg)
Lane 2: HeLa whole cell lysate (30 µg)
Lane 3: HepG2 whole cell lysate (30 µg)

WB of Cu/Zn SOD Monoclonal Antibody (Clone 11) at a dilution of 1:500.



Lane 1: Jurkat whole cell lysate
Lane 2: HepG2 whole cell lysate

WB of Cu/Zn SOD IP samples (500 µg whole cell lysate and 500 µl IgG per IP).

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PRODUCT INFORMATION

Description

Cu/Zn Superoxide dismutase (Cu/Zn SOD) is an antioxidant enzyme that protects cells from oxidative stress by scavenging superoxide anions.[1] It exists as a homodimer that is stabilized by a disulfide bond between the subunits. Each monomer is composed of a Greek key β-barrel and an active site channel made up of a β4/β5 loop, which interacts with the dimer interface and active site zinc, and an electrostatic loop, which facilitates superoxide entry into the copper-containing active site.[2] Cu/Zn SOD is ubiquitously expressed and primarily localizes to the cytosol but has also been found in the nucleus, peroxisomes, lysosomes, and the intermembrane space of mitochondria.[3,4] It catalyzes the dismutation of superoxide to hydrogen peroxide and oxygen by alternating reduction and reoxidation of copper at the enzyme active site.[1] Overexpression of *SOD1* protects against increases in reactive oxygen species (ROS) and apoptosis in an *in vitro* model of renal ischemia induced by ATP depletion.[5] *In vivo*, transgenic mice expressing the destabilized Cu/Zn SOD^{G93A} mutation exhibit impaired spinal cord mitochondrial respiration.[6,7] Mutations in *SOD1* are associated with amyotrophic lateral sclerosis (ALS).[8] Cayman's Cu/Zn SOD Monoclonal Antibody (Clone 11) can be used for flow cytometry (FC), immunoprecipitation (IP), and Western blot (WB) applications.

References

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5. Liang, H.L., Arsenault, J., Mortensen, J., *et al.* Partial attenuation of cytotoxicity and apoptosis by SOD1 in ischemic renal epithelial cells. *Apoptosis* **14(10)**, 1176-1189 (2009).
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