

SOD-1 (G-11): sc-17767



The Power to Question

BACKGROUND

Cu-Zn superoxide dismutase-1 (SOD-1) is a well characterized cytosolic scavenger of oxygen free radicals that requires copper and zinc binding to potentiate its enzymatic activity. Enzymatically, SOD-1 facilitates the dismutation of oxygen radicals to hydrogen peroxide, and it also catalyzes pro-oxidant reactions, which include the peroxidase activity and hydroxyl radical generating activity. SOD-1 is ubiquitously expressed in somatic cells and functions as a homodimer. Defects in the gene encoding SOD-1 have been implicated in the progression of neurological diseases, including amyotrophic lateral sclerosis (ALS), a neurodegenerative disease characterized by the loss of spinal motor neurons, Downs syndrome and Alzheimer's disease. In familial ALS, several mutations in SOD-1 predominate, and they result in the loss of zinc binding and the loss of scavenging activity of SOD-1 and correlate with an increase in neurotoxicity and motor neuron death.

CHROMOSOMAL LOCATION

Genetic locus: SOD1 (human) mapping to 21q22.11.

SOURCE

SOD-1 (G-11) is a mouse monoclonal antibody raised against amino acids 1-154 of SOD-1 of human origin.

PRODUCT

Each vial contains 200 µg IgG_{2b} kappa light chain in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

SOD-1 (G-11) is available conjugated to agarose (sc-17767 AC), 500 µg/0.25 ml agarose in 1 ml, for IP; to HRP (sc-17767 HRP), 200 µg/ml, for WB, IHC(P) and ELISA; to either phycoerythrin (sc-17767 PE), fluorescein (sc-17767 FITC), Alexa Fluor® 488 (sc-17767 AF488), Alexa Fluor® 546 (sc-17767 AF546), Alexa Fluor® 594 (sc-17767 AF594) or Alexa Fluor® 647 (sc-17767 AF647), 200 µg/ml, for WB (RGB), IF, IHC(P) and FCM; and to either Alexa Fluor® 680 (sc-17767 AF680) or Alexa Fluor® 790 (sc-17767 AF790), 200 µg/ml, for Near-Infrared (NIR) WB, IF and FCM.

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APPLICATIONS

SOD-1 (G-11) is recommended for detection of SOD-1 of human origin by Western Blotting (starting dilution 1:5,000, dilution range 1:5,000-1:10,000), immunoprecipitation [1-2 µg per 100-500 µg of total protein (1 ml of cell lysate)], immunofluorescence (starting dilution 1:50, dilution range 1:50-1:500), immunohistochemistry (including paraffin-embedded sections) (starting dilution 1:50, dilution range 1:50-1:500) and solid phase ELISA (starting dilution 1:30, dilution range 1:30-1:3000).

Suitable for use as control antibody for SOD-1 siRNA (h): sc-36523, SOD-1 shRNA Plasmid (h): sc-36523-SH and SOD-1 shRNA (h) Lentiviral Particles: sc-36523-V.

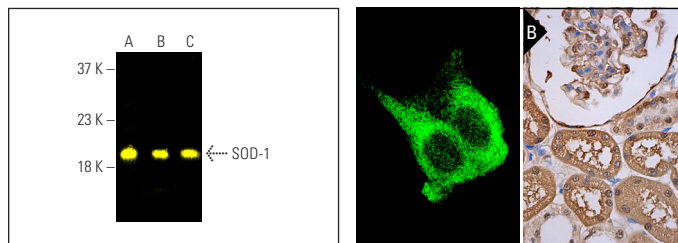
Molecular Weight of SOD-1: 23 kDa.

Positive Controls: DU 145 cell lysate: sc-2268, Jurkat whole cell lysate: sc-2204 or HEK293T whole cell lysate: sc-45137.

STORAGE

Store at 4° C, ****DO NOT FREEZE****. Stable for one year from the date of shipment. Non-hazardous. No MSDS required.

DATA



SOD-1 (G-11) Alexa Fluor® 488: sc-17767 AF488. Direct fluorescent western blot analysis of SOD-1 expression in Jurkat (A), DU 145 (B) and HEK293T (C) whole cell lysates. Blocked with UltraCruz® Blocking Reagent: sc-516214.

SOD-1 (G-11): sc-17767. Immunofluorescence staining of methanol-fixed HeLa cells showing cytoplasmic staining (A). Immunoperoxidase staining of formalin fixed, paraffin-embedded human kidney tissue showing nuclear staining of cells in glomeruli and cytoplasmic and nuclear staining of cells in tubules (B).

SELECT PRODUCT CITATIONS

- Cheng, Y.K., et al. 2006. Altered expression profile of superoxide dismutase isoforms in nasal polyps from nonallergic patients. *Laryngoscope* 116: 417-422.
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- Johann, S., et al. 2015. NLRP3 inflammasome is expressed by astrocytes in the SOD1 mouse model of ALS and in human sporadic ALS patients. *Glia* 63: 2260-2273.
- Kaliszewski, M., et al. 2016. SOD1 lysine 123 acetylation in the adult central nervous system. *Front. Cell. Neurosci.* 10: 287.
- Levy-Ontman, O., et al. 2017. An anti-inflammatory effect of red microalga polysaccharides in coronary artery endothelial cells. *Atherosclerosis* 264: 11-18.
- Debye, B., et al. 2018. Neurodegeneration and NLRP3 inflammasome expression in the anterior thalamus of SOD-1(G93A) ALS mice. *Brain Pathol.* 28: 14-27.
- Riccio, P., et al. 2019. GATA-1 isoforms differently contribute to the production and compartmentation of reactive oxygen species in the myeloid leukemia cell line K562. *J. Cell. Physiol.* 234: 20829-20846.
- Jenkins, E.C., et al. 2020. Proteasome mapping reveals sexual dimorphism in tissue-specific sensitivity to protein aggregations. *EMBO Rep.* 21: e48978.
- Li, Z., et al. 2021. Neuroprotective effect of emodin against Alzheimer's disease via Nrf2 signaling in U251 cells and APP/PS1 mice. *Mol. Med. Rep.* 23: 1.

RESEARCH USE

For research use only, not for use in diagnostic procedures.