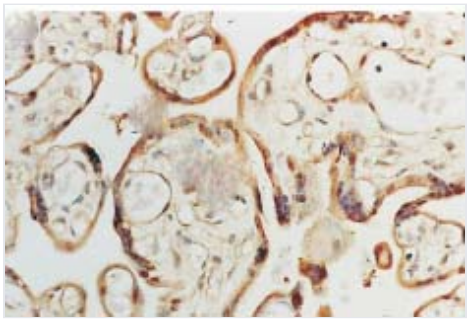
SOD (Cu/Zn) (SOD1) Antibody – Rabbit Polyclonal

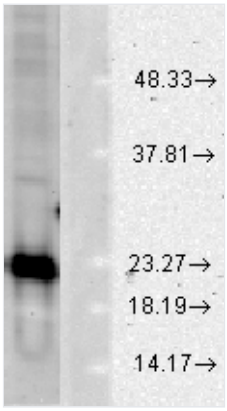
PRODUCT OVERVIEW

Product Name	SOD (Cu/Zn) (SOD1), Polyclonal Antibody
Full Product Name	SOD (Cu/Zn) Antibody: ATTO 390
Product Gene Name	anti-SOD1 antibody
Product Synonym Names	Superoxide dismutase1; ALS1; IPOA; SOD1; SOD2; SODC
Clonality	Polyclonal
Host	Rabbit
Species Reactivity	Human, Rat, Mouse, Bovine, Monkey, Coral, Dog, Hamster, Pig, Rabbit, Sheep, Xenopus
Form/Format	Affinity (antigen) Purified
Concentration	1mg/mL (lot specific)
Preparation and Storage	-20 degree C
Matching Pairs	Unconjugated Antibody: SOD (Cu/Zn) (MBS805967) ATTO 390 Conjugated Antibody: SOD (Cu/Zn) (MBS805074)
Molecular Weight	15,936 Da
OMIM	147450
3D Structure	ModBase 3D Structure for P00441
Conjugate	ATTO 390
Storage Buffer	PBS pH7.0, 50% glycerol, 0.09% sodium azide
Product Categories/Family for anti-SOD1 antibody	Oxidative Stress
Applications Tested/Suitable for anti-SOD1 antibody	Western Blot (WB), Immunoprecipitation (IP), ELISA (EIA), Immunohistochemistry (IHC)
Application Notes for anti-SOD1 antibody	0.2ug/ml was sufficient for detection of Cu/Zn SOD in 20ug of HeLa cell lysate
Related Product Information for anti-SOD1 antibody	**Background Info:** Detects a ~23kDa (human) and 19kDa (other species) proteins corresponding to the molecular mass of Cu/Zn superoxide dismutase (SOD) on SDS PAGE immunoblots. **Scientific Background:** Superoxide dismutase (SOD) is an endogenously produced intracellular enzyme present in almost every cell in the body (3). It works by catalyzing the dismutation of the superoxide radical O2" to O2 and H2O2, which are then metabolized to H2O and O2 by catalase and glutathione peroxidase (2,5). In general, SODs play a major role in antioxidant defense mechanisms (4). There are two main types of SOD in mammalian cells. One form (SOD1) contains Cu and Zn ions as a homodimer and exists in the cytoplasm. The two subunits of 16 kDa each are linked by two cysteines forming an intra-subunit disulphide bridge (3). The second form (SOD2) is a manganese containing enzyme and resides in the mitochondrial matrix. It is a homotetramer of 80 kDa. The third form (SOD3 or EC-SOD) is like SOD1 in that it contains Cu and Zn ions, however it is distinct in that it is a homotetramer, with a mass of 30 kDA and it exists only in the extracellular space(9). SOD3 can also be distinguished by its heparin-binding capacity (1).

Product References and Citations for anti-SOD1 antibody	1.Adachi, T, et al. (1992). Clin. Chim. Acta. 212: 89-102. 2.Barrister, J.V.,et al. (1987). Crit. Rev. Biochem. 22:111-180. 3.Furukawa,Y; O'Halloran, T. (2006). Antioxidants & Redo Signaling. Vol 8, No 5,6. 4.Gao, B, et al. (2003). Am J Physiol Lung Cell Mol Physiol 284: L917-L925. 5.Hassan, H.M. (1988). Free Radical Biol. Med. 5: 377-385. 6.Kurobe, N, et al. (1990) Biomedical Research. 11: 187-194 7.Ojika, T. et al. (1991). Acta Histochem Cytochem. 24(5): 489-495. 8.Shinder, G.A. et al. (2001). J. Biol. Chem. 276(16):12791-12796. 9.Wispe, JR et al. (1989) BBA. 994: 30-36.
Other Notes	Small volumes of anti-SOD1 antibody vial(s) may occasionally become entrapped in the seal of the product vial during shipment and storage. If necessary, briefly centrifuge the vial on a tabletop centrifuge to dislodge any liquid in the container`s cap. Certain products may require to ship with dry ice and additional dry ice fee may apply.
Searchable Terms for SOD1 purchase	MBS805074 is an antibody targeting SOD1. Also known as SOD (Cu/Zn) Antibody: ATTO 390. Reactive in Human, Rat, Mouse, Bovine, Monkey, Coral, Dog, Hamster, Pig, Rabbit, Sheep, Xenopus. Host: Rabbit.



Immunohistochemistry (IHC) of anti-SOD1 antibody
Immunohistochemistry analysis using Rabbit Anti-SOD1 Polyclonal Antibody (SPC-116). Tissue: Placenta. Species: Human. Primary Antibody: Rabbit Anti-SOD1 Polyclonal Antibody (SPC-116) at 1:100. Courtesy of: Courtesy of Joan Telfer, University of Glasgow.



Western Blot (WB) of anti-SOD1 antibody
Western blot analysis of Human Cell line lysates showing detection of SOD1 protein using Rabbit Anti-SOD1 Polyclonal Antibody (SPC-116). Load: 15 ugprotein. Block: 1.5% BSA. Primary Antibody: Rabbit Anti-SOD1 Polyclonal Antibody (SPC-116) at 1:1000 for 2 hours at RT. Secondary Antibody: Donkey Anti-Rabbit IgG: HRP for 1 hour at RT.

ADDITIONAL DETAILS

NCBI/Uniprot data below describe general gene information for SOD1. It may not necessarily be applicable to this product.

NCBI GI #	4507149
NCBI GeneID	6647
NCBI Accession #	NP_000445.1
UniProt Primary Accession #	P00441
UniProt Secondary Accession #	Q16669; Q16711; Q16838; Q16839; Q16840; Q6NR85; A6NHJ0; D3DSE4
UniProt Related Accession #	P00441
GenBank Nucleotide #	NM_000454.4
NCBI Official Full Name	superoxide dismutase
NCBI Official Synonym Full Names	superoxide dismutase 1, soluble
NCBI Official Symbol	SOD1
NCBI Official Synonym Symbols	ALS; SOD; ALS1; IPOA; hSod1; HEL-S-44; homodimer
UniProt Protein Name	Superoxide dismutase [Cu-Zn]
UniProt Synonym Protein Names	Superoxide dismutase 1; hSod1
Protein Family	Superoxide dismutase
UniProt Gene Name	SOD1

UniProt Synonym Gene Names	hSod1
UniProt Entry Name	SODC_HUMAN
NCBI Protein Information	superoxide dismutase [Cu-Zn]; superoxide dismutase [Cu-Zn]; SOD, soluble; indophenoloxidase A; Cu/Zn superoxide dismutase; superoxide dismutase, cystolic; epididymis secretory protein Li 44
NCBI Summary for SOD1	The protein encoded by this gene binds copper and zinc ions and is one of two isozymes responsible for destroying free superoxide radicals in the body. The encoded isozyme is a soluble cytoplasmic protein, acting as a homodimer to convert naturally-occuring but harmful superoxide radicals to molecular oxygen and hydrogen peroxide. The other isozyme is a mitochondrial protein. Mutations in this gene have been implicated as causes of familial amyotrophic lateral sclerosis. Rare transcript variants have been reported for this gene. [provided by RefSeq, Jul 2008]
UniProt Comments for SOD1	SOD1: Destroys radicals which are normally produced within the cells and which are toxic to biological systems. Homodimer; non-disulfide linked. Homodimerization may take place via the ditryptophan cross-link at Trp-33. The pathogenic variants ALS1 Arg-38, Arg-47, Arg-86 and Ala-94 interact with RNF19A, whereas wild-type protein does not. The pathogenic variants ALS1 Arg-86 and Ala-94 interact with MARCH5, whereas wild-type protein does not. Belongs to the Cu-Zn superoxide dismutase family. Protein type: Oxidoreductase; EC 1.15.1.1; Mitochondrial; Apoptosis; Nuclear receptor co-regulator Chromosomal Location of Human Ortholog: 21q22.11 Cellular Component: dendrite cytoplasm; extracellular space; protein complex; mitochondrion; extracellular region; mitochondrial intermembrane space; cytosol; nucleoplasm; extracellular matrix; cell soma; mitochondrial matrix; cytoplasm; plasma membrane; peroxisome; cytoplasmic vesicle; nucleus Molecular Function: identical protein binding; protein binding; copper ion binding; protein homodimerization activity; zinc ion binding; chaperone binding; superoxide dismutase activity; Rac GTPase binding; protein phosphatase 2B binding Biological Process: positive regulation of catalytic activity; cellular iron ion homeostasis; positive regulation of apoptosis; activation of MAPK activity; myeloid cell homeostasis; retrograde axon cargo transport; muscle maintenance; response to antibiotic; retinal homeostasis; glutathione metabolic process; regulation of mitochondrial membrane potential; neurofilament cytoskeleton organization and biogenesis; positive regulation of superoxide release; negative regulation of neuron apoptosis; placenta development; response to drug; positive regulation of cytokine production; platelet activation; cell aging; transmission of nerve impulse; regulation of organ growth; response to reactive oxygen species; response to ethanol; response to heat; heart contraction; superoxide release; relaxation of vascular smooth muscle; removal of superoxide radicals; locomotory behavior; response to organic substance; platelet degranulation; sensory perception of sound; ovarian follicle development; regulation of blood pressure; response to axon injury; auditory receptor cell stereocilium organization and biogenesis; negative regulation of cholesterol biosynthetic process; anterograde axon cargo transport; response to nutrient levels; response to superoxide; thymus development; regulation of T cell differentiation in the thymus; response to amphetamine; myelin maintenance in the peripheral nervous system; superoxide metabolic process; regulation of multicellular organism growth; response to hydrogen peroxide; response to copper ion; spermatogenesis; blood coagulation; regulation of protein kinase activity; hydrogen peroxide biosynthetic process; embryo implantation Disease: Amyotrophic Lateral Sclerosis 1
Research Articles on SOD1	**1.** the toxicity of mutant SOD1 aggregates expressed in cultured human cells is determined by the state and activity of the proteasome.
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