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SOD3 Antibody (N-term)

Purified Rabbit Polyclonal Antibody (Pab)
Catalog # AP6871a

Product Information

Application	WB, IHC-P, FC, E
Primary Accession	P08294
Reactivity	Human
Host	Rabbit
Clonality	Polyclonal
Isotype	Rabbit IgG
Clone Names	RB19866
Calculated MW	25851
Antigen Region	7-36

Additional Information

Gene ID	6649
Other Names	Extracellular superoxide dismutase [Cu-Zn], EC-SOD, SOD3
Target/Specificity	This SOD3 antibody is generated from rabbits immunized with a KLH conjugated synthetic peptide between 7-36 amino acids from the N-terminal region of human SOD3.
Dilution	WB~~1:1000 IHC-P~~1:100~500 FC~~1:10~50 E~~Use at an assay dependent concentration.
Format	Purified polyclonal antibody supplied in PBS with 0.09% (W/V) sodium azide. This antibody is purified through a protein A column, followed by peptide affinity purification.
Storage	Maintain refrigerated at 2-8°C for up to 2 weeks. For long term storage store at -20°C in small aliquots to prevent freeze-thaw cycles.
Precautions	SOD3 Antibody (N-term) is for research use only and not for use in diagnostic or therapeutic procedures.

Protein Information

Name	SOD3 (HGNC:11181)
Function	Secreted antioxidant enzyme that acts as the primary scavenger of superoxide radicals in the extracellular space, converting them to hydrogen peroxide and thereby protecting tissues from oxidative damage (PubMed:12933702, PubMed:15761197). Also preserves nitric oxide

	bioavailability by preventing the formation of harmful peroxynitrite (PubMed:12933702). Stored in intracellular pre-formed vesicles of macrophages and neutrophils and released upon stimulation by inflammatory mediators (PubMed:31326693).
Cellular Location	Secreted, extracellular space. Golgi apparatus, trans-Golgi network {ECO:0000250|UniProtKB:O09164}. Vesicle Note=99% of SOD3/EC-SOD is anchored to heparan sulfate proteoglycans in the tissue interstitium, and 1% is located in the vasculature in equilibrium between the plasma and the endothelium (PubMed:8546689). In macrophages and neutrophiles, extracellular SOD2 in endocytosed and stored in intracellular vesicles (PubMed:31326693)
Tissue Location	Expressed in blood vessels, heart, lung, kidney and placenta. Major SOD isoenzyme in extracellular fluids such as plasma, lymph and synovial fluid (PubMed:7959763). Stored in macrophages intracellular compartments (PubMed:31326693)

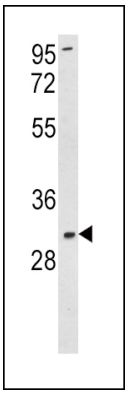
Background

SOD3 is a member of the superoxide dismutase(SOD) protein family. SODs are antioxidant enzymes that catalyze the dismutation of two superoxide radicals into hydrogen peroxide and oxygen. This protein is thought to protect the brain, lungs, and other tissues from oxidative stress. The protein is secreted into the extracellular space and forms a glycosylated homotetramer that is anchored to the extracellular matrix (ECM) and cell surfaces through an interaction with heparan sulfate proteoglycan and collagen. A fraction of the protein is cleaved near the C-terminus before secretion to generate circulating tetramers that do not interact with the ECM.

References

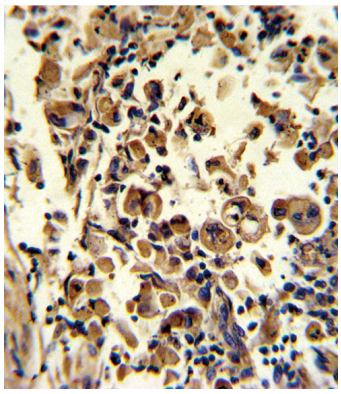
Stern,L.F., et.al., Cytogenet. Genome Res. 101 (2), 178 (2003)

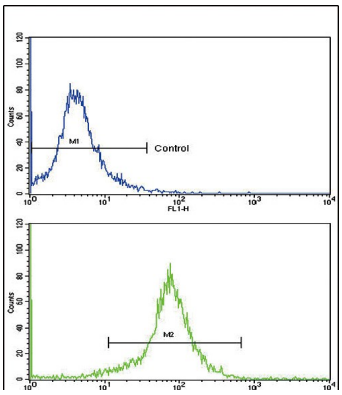
Images



Western blot analysis of SOD3 Antibody (N-term) (Cat. #AP6871a) in K562 cell line lysates (35ug/lane). SOD3 (arrow) was detected using the purified Pab.

Formalin-fixed and paraffin-embedded human lung carcinoma reacted with SOD3 Antibody (N-term), which was peroxidase-conjugated to the secondary antibody, followed by DAB staining. This data demonstrates the use of this antibody for immunohistochemistry; clinical relevance has not been evaluated.





Flow cytometric analysis of K562 cells using SOD3 Antibody (N-term)(bottom histogram) compared to a negative control cell (top histogram). FITC-conjugated goat-anti-rabbit secondary antibodies were used for the analysis.

Citations

- Glutathione-dependent and -independent oxidative stress-control mechanisms distinguish normal human mammary epithelial cell subsets.

Please note: All products are 'FOR RESEARCH USE ONLY. NOT FOR USE IN DIAGNOSTIC OR THERAPEUTIC PROCEDURES'.