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Anti-SOD3 Picoband Antibody

Catalog # ABO12963

Product Information

Application	IHC-P
Primary Accession	P08294
Host	Rabbit
Reactivity	Human
Clonality	Polyclonal
Format	Lyophilized
Description	Rabbit IgG polyclonal antibody for SOD3 detection. Tested with IHC-P in Human
Reconstitution	Add 0.2ml of distilled water will yield a concentration of 500ug/ml.

Additional Information

Gene ID	6649
Other Names	Extracellular superoxide dismutase [Cu-Zn], EC-SOD, 1.15.1.1, SOD3
Calculated MW	25851
Application Details	Immunohistochemistry(Paraffin-embedded Section), 0.5-1 □g/ml
Subcellular Localization	Secreted, extracellular space. 99% of 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.
Tissue Specificity	Expressed in blood vessels, heart, lung, kidney and placenta. Major SOD isoenzyme in extracellular fluids such as plasma, lymph and synovial fluid.
Source	Eukaryota
Contents	Each vial contains 4mg Trehalose, 0.9mg NaCl, 0.2mg Na_2HPO_4, 0.05mg NaN_3.
Immunogen	A synthetic peptide corresponding to a sequence of human SOD3 (WTGEDSAEPNSDSAEWIRDMYAKVTEIWQEVMQRRDDD).
Cross Reactivity	No cross reactivity with other proteins.
Storage	At -20˚C; for one year. After r˚Constitution, at 4˚C; for one month. It˚Can also be aliquotted and stored frozen at -20˚C; for a longer time. Avoid repeated freezing and thawing.

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 (SUPEROXIDE DISMUTASE 3), also called SUPEROXIDE DISMUTASE, EXTRACELLULAR, EC-SOD, and Cu-Zn, is an enzyme that in humans is encoded by the SOD3 gene. This gene encodes 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. Hendrickson et al. (1990) mapped the SOD3 gene to 4pter-q21 by a study of somatic cell hybrids. Stern et al. (2003) narrowed the assignment to 4p15.3-p15.1 by somatic cell and radiation hybrid analysis, linkage mapping, and FISH. The product of this gene 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.

Images

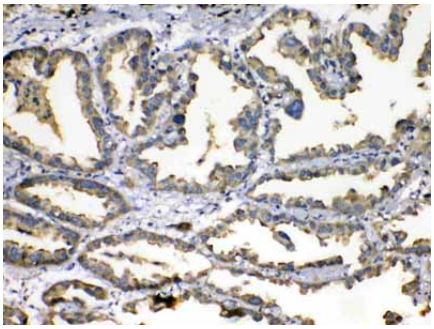
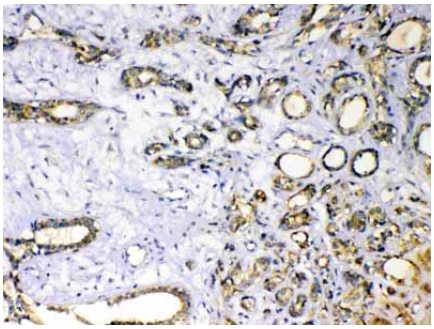


Figure 1. IHC analysis of SOD3 using anti-SOD3 antibody (ABO12963).SOD3 was detected in paraffin-embedded section of human lung cancer tissue. Heat mediated antigen retrieval was performed in citrate buffer (pH6, epitope retrieval solution) for 20 mins. The tissue section was blocked with 10% goat serum. The tissue section was then incubated with 1 □¼g/ml rabbit anti-SOD3 Antibody (ABO12963) overnight at 4 □°C. Biotinylated goat anti-rabbit IgG was used as secondary antibody and incubated for 30 minutes at 37 □°C. The tissue section was developed using Strepavidin-Biotin-Complex (SABC) with DAB as the chromogen.

Figure 2. IHC analysis of SOD3 using anti-SOD3 antibody (ABO12963).SOD3 was detected in paraffin-embedded section of human mammary cancer tissue. Heat mediated antigen retrieval was performed in citrate buffer (pH6,



epitope retrieval solution) for 20 mins. The tissue section was blocked with 10% goat serum. The tissue section was then incubated with 1 □¼g/ml rabbit anti-SOD3 Antibody (ABO12963) overnight at 4 □°C. Biotinylated goat anti-rabbit IgG was used as secondary antibody and incubated for 30 minutes at 37 □°C. The tissue section was developed using Strepavidin-Biotin-Complex (SABC) with DAB as the chromogen.

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