

Rabbit Monoclonal Antibody to Human Superoxide Dismutase 1, Soluble

Cat. No. CAB11605RH **Lot. No.** (See product label)

SPECIFICATION

Product Overview Rabbit Monoclonal Antibody to Human Superoxide Dismutase 1, Soluble

Species Human

Source Rabbit

Antigen Description

Superoxide dismutase [Cu-Zn], also known as superoxide dismutase 1 and SOD1, is an enzyme that in humans is a cytoplasm protein which belongs to the Cu-Zn superoxide dismutase family. SOD1 binds copper and zinc ions and is one of three isozymes responsible for destroying free superoxide radicals in the body. SOD1 is a soluble cytoplasmic and mitochondrial intermembrane space protein, acting as a homodimer to convert naturally occurring, but harmful, superoxide radicals to molecular oxygen and hydrogen peroxide. SOD1 has a tendency to form fibrillar aggregates in the absence of the intramolecular disulfide bond or of bound zinc ions. These aggregates may have cytotoxic effects. Zinc binding promotes dimerization and stabilizes the native form. Defects in SOD1 are the cause of amyotrophic lateral sclerosis type 1 (ALS1) which is a familial form of amyotrophic lateral sclerosis, a neurodegenerative disorder affecting upper and lower motor neurons and resulting in fatal paralysis. Death usually occurs within 2 to 5 years. The disease is inherited in 5-10% of cases leading to familial forms.

Specificity

Human Superoxide Dismutase. No cross-reactivity with human cell lysate (293 cell line) in WB and ELISA.

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|---------------------|---|
| Immunogen | Recombinant human SOD1 protein |
| Isotype | Rabbit IgG |
| Clone | A102 |
| Applications | Western blot; ELISA |
| Dilution | Western blot: This antibody can be used at 1 - 2 µg/mL with the appropriate secondary reagents to detect human SOD1 in WB. Using a DAB detection system, the detection limit for human SOD1 is approximately 0.25 ng/lane under non-reducing conditions and reducing conditions Direct ELISA: This antibody can be used at 0.1 - 0.2 µg/mL with the appropriate secondary reagents to detect human SOD1. The detection limit for human SOD1 is approximately 0.00245 ng/well |
| Preparation | This antibody was obtained from a rabbit immunized with purified, human cell-derived, recombinant human SOD1 |
| Format | 0.2 µm filtered solution in PBS with 5% trehalose |
| Storage | This antibody can be stored at 2-8°C for one month without detectable loss of activity. Antibody products are stable for twelve months from date of receipt when stored at -20 to -70 °C. Preservative-Free. Sodium azide is recommended to avoid contamination (final concentration 0.05%-0.1%). It is toxic to cells and should be disposed of properly. Avoid repeated freeze-thaw cycles. |

GENE INFORMATION

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| Gene Name | SOD1 superoxide dismutase 1, soluble [Homo sapiens] |
| Official Symbol | SOD1 |

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| Synonyms | SOD1; superoxide dismutase 1, soluble; ALS, ALS1, amyotrophic lateral sclerosis 1 (adult); superoxide dismutase [Cu-Zn]; IPOA; SOD, soluble; indophenoxidase A; Cu/Zn superoxide dismutase; superoxide dismutase, cystolic; ALS; SOD; ALS1; hSod1; homodimer; |
| Gene ID | 6647 |
| mRNA Refseq | NM_000454 |
| Protein Refseq | NP_000445 |
| MIM | 147450 |
| UniProt ID | P00441 |
| Chromosome Location | 21q22.11 |
| Pathway | Amyotrophic lateral sclerosis (ALS), organism-specific biosystem; Amyotrophic lateral sclerosis (ALS), conserved biosystem; FOXA1 transcription factor network, organism-specific biosystem; Folate Metabolism, organism-specific biosystem; Hemostasis, organism-specific biosystem; Huntingtons disease, organism-specific biosystem; Huntingtons disease, conserved biosystem; |
| Function | chaperone binding; copper ion binding; metal ion binding; oxidoreductase activity; protein binding; protein homodimerization activity; protein phosphatase 2B binding; superoxide dismutase activity; zinc ion binding; |

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