

## SO (G-4): sc-390322



The Power to Question

## BACKGROUND

Sulfite oxidase (SO), a homodimeric protein that localizes to the intermembrane space of mitochondria, catalyzes the oxidation of sulfite to sulfate, the terminal reaction in the oxidative degradation of the sulfur amino acids cysteine and methionine. Genetic deficiency of SO contributes to neurological abnormalities and often leads to death at an early age. Mutation of Arginine 160 in humans decreases the intramolecular electron transfer (IET) rate, which contributes to the fatality of this genetic disorder. Also, the tyrosine 343 residue in humans plays an important role in both substrate binding and oxidation of sulfite by SO. The human SO gene maps to chromosome 12, and shows high expression in liver, kidney, skeletal muscle, heart, placenta and brain.

## REFERENCES

1. Kisker, C., et al. 1997. Molecular basis of sulfite oxidase deficiency from the structure of sulfite oxidase. *Cell* 91: 973-983.
2. Garrett, R.M., et al. 1998. Human sulfite oxidase R160Q: identification of the mutation in a sulfite oxidase-deficient patient and expression and characterization of the mutant enzyme. *Proc. Natl. Acad. Sci. USA* 95: 6394-6398.
3. Online Mendelian Inheritance in Man, OMIM™. 2002. Johns Hopkins University, Baltimore, MD. MIM Number: 606887. World Wide Web URL: <http://www.ncbi.nlm.nih.gov/omim/>
4. Feng, C., et al. 2003. Essential role of conserved arginine 160 in intramolecular electron transfer in human sulfite oxidase. *Biochemistry* 42: 12235-12242.
5. Sass, J.O., et al. 2004. New approaches towards laboratory diagnosis of isolated sulphite oxidase deficiency. *Ann. Clin. Biochem.* 41: 157-159.
6. Wilson, H.L., et al. 2004. The role of tyrosine 343 in substrate binding and catalysis by human sulfite oxidase. *J. Biol. Chem.* 279: 15105-15113.
7. Nimet Izgut-Uysal, V., et al. 2005. Effect of sulfite on macrophage functions of normal and sulfite oxidase-deficient rats. *Food Chem. Toxicol.* 43: 599-605.
8. Kucukatay, V., et al. 2005. Effect of sulfite on cognitive function in normal and sulfite oxidase deficient rats. *Neurotoxicol. Teratol.* 27: 47-54.

## CHROMOSOMAL LOCATION

Genetic locus: SUOX (human) mapping to 12q13.2; Suox (mouse) mapping to 10 D3.

## SOURCE

SO (G-4) is a mouse monoclonal antibody raised against amino acids 246-545 mapping at the C-terminus of SO of human origin.

## PRODUCT

Each vial contains 200 µg IgG<sub>2b</sub> kappa light chain in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

## APPLICATIONS

SO (G-4) is recommended for detection of SO of mouse, rat and human origin by Western Blotting (starting dilution 1:100, dilution range 1:100-1:1000), 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 SO siRNA (h): sc-44404, SO siRNA (m): sc-44405, SO shRNA Plasmid (h): sc-44404-SH, SO shRNA Plasmid (m): sc-44405-SH, SO shRNA (h) Lentiviral Particles: sc-44404-V and SO shRNA (m) Lentiviral Particles: sc-44405-V.

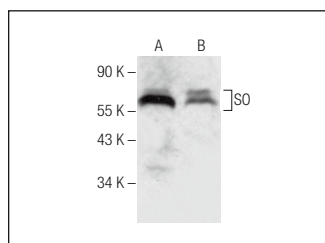
Molecular Weight of SO: 55 kDa.

Positive Controls: human liver extract: sc-363766 or Hep G2 cell lysate: sc-2227.

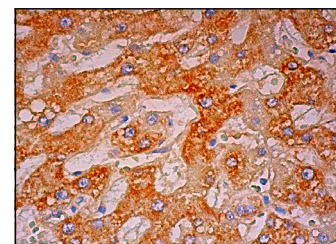
## RECOMMENDED SUPPORT REAGENTS

To ensure optimal results, the following support reagents are recommended: 1) Western Blotting: use m-IgGκ BP-HRP: sc-516102 or m-IgGκ BP-HRP (Cruz Marker): sc-516102-CM (dilution range: 1:1000-1:10000), Cruz Marker™ Molecular Weight Standards: sc-2035, UltraCruz® Blocking Reagent: sc-516214 and Western Blotting Luminol Reagent: sc-2048. 2) Immunoprecipitation: use Protein A/G PLUS-Agarose: sc-2003 (0.5 ml agarose/2.0 ml). 3) Immunofluorescence: use m-IgGκ BP-FITC: sc-516140 or m-IgGκ BP-PE: sc-516141 (dilution range: 1:50-1:200) with UltraCruz® Mounting Medium: sc-24941 or UltraCruz® Hard-set Mounting Medium: sc-359850. 4) Immunohistochemistry: use m-IgGκ BP-HRP: sc-516102 with DAB, 50X: sc-24982 and Immunohistomount: sc-45086, or Organo/Limonene Mount: sc-45087.

## DATA



SO (G-4): sc-390322. Western blot analysis of SO expression in human liver tissue extract (A) and Hep G2 whole cell lysate (B).



SO (G-4): sc-390322. Immunoperoxidase staining of formalin fixed, paraffin-embedded human liver tissue showing cytoplasmic staining of hepatocytes.

## STORAGE

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

## RESEARCH USE

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