

Sulfiredoxin (H-10): sc-514940

BACKGROUND

Sulfiredoxin, also designated Sulfiredoxin-1 and chromosome 20 open reading frame 139 (C20orf139), is a cytoplasmic antioxidant protein involved in signaling through catalytic reduction of oxidative modifications. It regulates peroxiredoxins (PRXs), a family of proteins that reduce hydroperoxides, by reducing the conserved cysteine from sulfinic to sulfenic acid. This impacts the role of PRX in the reduction of other downstream transcription factors and kinase signaling pathways. The Sulfiredoxin protein specifically acts on the PRDX1, PRDX2, PRDX3 and PRDX4 peroxiredoxins, but not on PRDX5 or PRDX6. Sulfiredoxin acts as a phosphotransferase and an a-thioltransferase and is widely expressed, with highest levels detected in lung, spleen, kidney and thymus tissues.

REFERENCES

1. Chang, T.S., et al. 2004. Characterization of mammalian Sulfiredoxin and its reactivation of hyperoxidized peroxiredoxin through reduction of cysteine sulfinic acid in the active site to cysteine. *J. Biol. Chem.* 279: 50994-51001.
2. Findlay, V.J., et al. 2005. Sulfiredoxin: a potential therapeutic agent? *Biomed. Pharmacother.* 59: 374-379.
3. Basu, M.K. and Koonin, E.V. 2005. Evolution of eukaryotic cysteine sulfinic acid reductase, Sulfiredoxin (Srx), from bacterial chromosome partitioning protein ParB. *Cell Cycle* 4: 947-952.
4. Lee, D.Y., et al. 2005. ¹H, ¹⁵N, and ¹³C chemical shift assignments of the human Sulfiredoxin (hSrx). *J. Biomol. NMR* 32: 339.
5. Woo, H.A., et al. 2005. Reduction of cysteine sulfinic acid by Sulfiredoxin is specific to 2-Cys peroxiredoxins. *J. Biol. Chem.* 280: 3125-3128.

CHROMOSOMAL LOCATION

Genetic locus: SRXN1 (human) mapping to 20p13.

SOURCE

Sulfiredoxin (H-10) is a mouse monoclonal antibody specific for an epitope mapping between amino acids 21-39 near the N-terminus of Sulfiredoxin of human origin.

PRODUCT

Each vial contains 200 µg IgG₁ kappa light chain in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

Sulfiredoxin (H-10) is available conjugated to agarose (sc-514940 AC), 500 µg/0.25 ml agarose in 1 ml, for IP; to HRP (sc-514940 HRP), 200 µg/ml, for WB, IHC(P) and ELISA; to either phycoerythrin (sc-514940 PE), fluorescein (sc-514940 FITC), Alexa Fluor® 488 (sc-514940 AF488), Alexa Fluor® 546 (sc-514940 AF546), Alexa Fluor® 594 (sc-514940 AF594) or Alexa Fluor® 647 (sc-514940 AF647), 200 µg/ml, for WB (RGB), IF, IHC(P) and FCM; and to either Alexa Fluor® 680 (sc-514940 AF680) or Alexa Fluor® 790 (sc-514940 AF790), 200 µg/ml, for Near-Infrared (NIR) WB, IF and FCM.

Blocking peptide available for competition studies, sc-514940 P, (100 µg peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% stabilizer protein).

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APPLICATIONS

Sulfiredoxin (H-10) is recommended for detection of Sulfiredoxin of 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) and solid phase ELISA (starting dilution 1:30, dilution range 1:30-1:3000).

Suitable for use as control antibody for Sulfiredoxin siRNA (h): sc-61622, Sulfiredoxin shRNA Plasmid (h): sc-61622-SH and Sulfiredoxin shRNA (h) Lentiviral Particles: sc-61622-V.

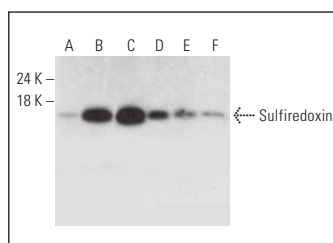
Molecular Weight of Sulfiredoxin: 13 kDa.

Positive Controls: Sulfiredoxin (h2): 293T Lysate: sc-116088, A549 cell lysate: sc-2413 or Caki-1 cell lysate: sc-2224.

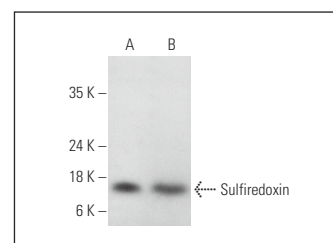
RECOMMENDED SUPPORT REAGENTS

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.

DATA



Sulfiredoxin (H-10): sc-514940. Western blot analysis of Sulfiredoxin expression in non-transfected 293T: sc-117752 (A), human Sulfiredoxin transfected 293T: sc-116088 (B), A549 (C), Caki-1 (D), WI-38 (E) and Hs67 (F) whole cell lysates.



Sulfiredoxin (H-10): sc-514940. Western blot analysis of Sulfiredoxin expression in MCF7 whole cell lysate (A) and human liver tissue extract (B).

SELECT PRODUCT CITATIONS

1. Dai, W., et al. 2023. Fresh medium or L-cystine as an effective Nrf2 inducer for cytoprotection in cell culture. *Cells* 12: 291.

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.