SANTA CRUZ BIOTECHNOLOGY, INC.

Rhodanese (E-11): sc-365562

SANTA CRUZ BIOTECHNOLOGY

The Power to Question

BACKGROUND

Rhodanese (also known as thiosulfate sulfurtransferase) is a mitochondrial matrix enzyme that is encoded by the nucleus. Rhodanese is a 297-residue polypeptide and has been proposed to play roles in cyanide detoxification, the formation of iron-sulfur proteins, and the modification of sulfur-containing enzymes. Rhodanese was first identified in human red cells in 1956 and has been crystallized from beef liver. In mammals, most cyanide is converted to thiocyanate by Rhodanese. There is an association between Leber's optic neuropathy and deficiency of Rhodanese activity in liver and rectal mucosa. Greatly reduced activity of this enzyme has been observed in the livers of two males with Leber optic atrophy from a well-studied Swiss family with five symptomatic persons in four generations. The red cell and tissue Rhodanese are determined by separate genes, but more than one locus may be concerned with the synthesis of heterogeneous tissue isozymes. The gene which encodes Rhodanese maps to human chromosome 22q12.3.

REFERENCES

1. Cagianut, B., et al. 1981. Thiosulphate-sulphur transferase (Rhodanese) deficiency in Leber's hereditary optic atrophy. Lancet 2: 981-982.
2. Pallini, R., et al. 1990. Synthesis of Rhodanese in Hep 3B cells. Mol. Cell. Biochem. 93: 61-67.
3. Pallini, R., et al. 1991. Cloning and sequence analysis of the human liver Rhodanese: comparison with the bovine and chicken enzymes. Biochem. Biophys. Res. Commun. 180: 887-893.
4. Aita, N., et al. 1997. Cloning and expression of human liver Rhodanese cDNA. Biochem. Biophys. Res. Commun. 231: 56-60.
5. Tan, G., et al. 2003. Decreased expression of genes involved in sulfur amino acid metabolism in frataxin-deficient cells. Hum. Mol. Genet. 12: 1699-1711.
6. Horibe, T., et al. 2004. Different contributions of the three CXXC motifs of human protein-disulfide isomerase-related protein to isomerase activity and oxidative refolding. J. Biol. Chem. 279: 4604-4611.
7. Kim, M.V., et al. 2004. Some properties of human small heat shock protein Hsp22 (H11 or HspB8). Biochem. Biophys. Res. Commun. 315: 796-801.
8. Matthies, A., et al. 2004. Evidence for the physiological role of a Rhodanese-like protein for the biosynthesis of the molybdenum cofactor in humans. Proc. Natl. Acad. Sci. USA 101: 5946-5951.

CHROMOSOMAL LOCATION

Genetic locus: TST (human) mapping to 22q12.3.

SOURCE

Rhodanese (E-11) is a mouse monoclonal antibody specific for an epitope mapping between amino acids 29-117 near the N-terminus of Rhodanese of human origin.

PRODUCT

Each vial contains 200 µg IgG_1 kappa light chain in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

APPLICATIONS

Rhodanese (E-11) is recommended for detection of Rhodanese 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 Rhodanese siRNA (h): sc-36418, Rhodanese shRNA Plasmid (h): sc-36418-SH and Rhodanese shRNA (h) Lentiviral Particles: sc-36418-V.

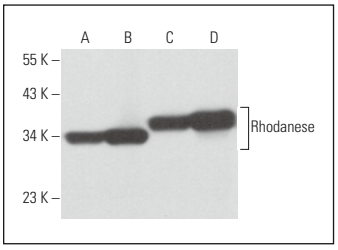
Molecular Weight of Rhodanese: 33-35 kDa.

Positive Controls: Hep G2 cell lysate: sc-2227, COLO 205 whole cell lysate: sc-364177 or human liver extract: sc-363766.

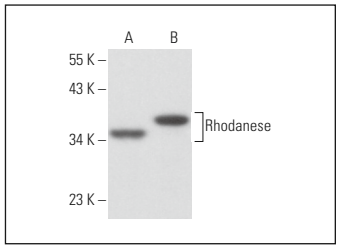
RECOMMENDED SUPPORT REAGENTS

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



Rhodanese (E-11): sc-365562. Western blot analysis of Rhodanese expression in COLO 205 whole cell lysate (**A**) and human liver (**B**), mouse liver (**C**) and rat liver (**D**) tissue extracts.



Rhodanese (E-11): sc-365562. Western blot analysis of Rhodanese expression in Hep G2 (**A**) and c4 (**B**) whole cell lysates.

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.

PROTOCOLS

See our web site at www.scbt.com for detailed protocols and support products.