SANTA CRUZ BIOTECHNOLOGY, INC.

Sorbitol Dehydrogenase (C-17): sc-69328

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The Power to Question

BACKGROUND

Sorbitol Dehydrogenase, also known as L-iditol 2-dehydrogenase, SORD or SORD1, is a 357 amino acid member of the zinc-containing alcohol dehydrogenase family. Widely expressed with highest expression in kidney and in the lens of the eye, Sorbitol Dehydrogenase enzymatically catalyzes the zinc-dependent interconversion of polyols, such as such as sorbitol and xylitol, to their respective ketoses. These reactions require NAD^+ as an oxidizing agent and, together with aldose Reductase, they comprise the sorbitol pathway that is involved in sugar production. Sorbitol sehydrogenase deficiency leads to defects in this pathway and a subsequent accumulation of sorbitol within the cell, a condition that may be associated with diabetic complications such as cataracts and microvascular problems.

REFERENCES

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3. Pauly, T.A., et al. 2003. X-ray crystallographic and kinetic studies of human Sorbitol Dehydrogenase. Structure 11: 1071-1085.
4. Ii, S., et al. 2004. Redox state-dependent and sorbitol accumulation-independent diabetic albuminuria in mice with transgene-derived human aldose reductase and Sorbitol Dehydrogenase deficiency. Diabetologia 47: 541-548.
5. El-Kabbani, O., et al. 2004. Sorbitol Dehydrogenase: structure, function and ligand design. Curr. Med. Chem. 11: 465-476.
6. Schmidt, R.E., et al. 2005. A potent Sorbitol Dehydrogenase inhibitor exacerbates sympathetic autonomic neuropathy in rats with streptozotocin-induced diabetes. Exp. Neurol. 192: 407-419.
7. Darmanin, C., et al. 2006. Discovery of potential Sorbitol Dehydrogenase inhibitors from virtual screening. Med. Chem. 2: 239-242.
8. Hellgren, M., et al. 2007. A hydrogen-bonding network in mammalian Sorbitol Dehydrogenase stabilizes the tetrameric state and is essential for the catalytic power. Cell. Mol. Life Sci. 64: 3129-3138.
9. Szaflik, J.P., et al. 2008. Association between Sorbitol Dehydrogenase gene polymorphisms and type 2 diabetic retinopathy. Exp. Eye Res. 86: 647-652.

CHROMOSOMAL LOCATION

Genetic locus: SORD (human) mapping to 15q21.1; Sord (mouse) mapping to 2 E5.

SOURCE

Sorbitol Dehydrogenase (C-17) is an affinity purified goat polyclonal antibody raised against a peptide mapping near the C-terminus of Sorbitol Dehydrogenase of human origin.

PRODUCT

Each vial contains 200 µg IgG in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

Blocking peptide available for competition studies, sc-69328 P, (100 µg peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% BSA).

APPLICATIONS

Sorbitol Dehydrogenase (C-17) is recommended for detection of Sorbitol Dehydrogenase of mouse and human origin by Western Blotting (starting dilution 1:200, 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).

Sorbitol Dehydrogenase (C-17) is also recommended for detection of Sorbitol Dehydrogenase in additional species, including equine, canine, bovine, porcine and avian.

Suitable for use as control antibody for Sorbitol Dehydrogenase siRNA (h): sc-76540, Sorbitol Dehydrogenase siRNA (m): sc-76541, Sorbitol Dehydrogenase shRNA Plasmid (h): sc-76540-SH, Sorbitol Dehydrogenase shRNA Plasmid (m): sc-76541-SH, Sorbitol Dehydrogenase shRNA (h) Lentiviral Particles: sc-76540-V and Sorbitol Dehydrogenase shRNA (m) Lentiviral Particles: sc-76541-V.

Molecular Weight of Sorbitol Dehydrogenase: 38 kDa.

Positive Controls: HeLa nuclear extract: sc-2120.

RECOMMENDED SECONDARY REAGENTS

To ensure optimal results, the following support (secondary) reagents are recommended: 1) Western Blotting: use donkey anti-goat IgG-HRP: sc-2020 (dilution range: 1:2000-1:100,000) or Cruz Marker™ compatible donkey anti-goat IgG-HRP: sc-2033 (dilution range: 1:2000-1:5000), Cruz Marker™ Molecular Weight Standards: sc-2035, TBS Blotto A Blocking Reagent: sc-2333 and Western Blotting Luminol Reagent: sc-2048. 2) Immunofluorescence: use donkey anti-goat IgG-FITC: sc-2024 (dilution range: 1:100-1:400) or donkey anti-goat IgG-TR: sc-2783 (dilution range: 1:100-1:400) with UltraCruz™ Mounting Medium: sc-24941.

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 or our catalog for detailed protocols and support products.