

# Sorbitol Dehydrogenase (E-11): sc-365760

## 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 sorbitol and xylitol, to their respective ketoses. These reactions require NAD<sup>+</sup> as an oxidizing agent and, together with Aldose Reductase, they comprise the sorbitol pathway that is involved in sugar production. Sorbitol Dehydrogenase 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

1. Iwata, T., et al. 1995. Structural organization of the human Sorbitol Dehydrogenase gene (SORD). *Genomics* 26: 55-62.
2. Carr, I.M., et al. 1998. Structural and evolutionary characterization of the human Sorbitol Dehydrogenase gene duplication. *Mamm. Genome* 9: 1042-1048.
3. Pauly, T.A., et al. 2003. X-ray crystallographic and kinetic studies of human Sorbitol Dehydrogenase. *Structure* 11: 1071-1085.
4. Li, 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.

## CHROMOSOMAL LOCATION

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

## SOURCE

Sorbitol Dehydrogenase (E-11) is a mouse monoclonal antibody specific for an epitope mapping between amino acids 143-171 within an internal region of Sorbitol Dehydrogenase of human origin.

## PRODUCT

Each vial contains 200 µg IgG<sub>1</sub> kappa light chain in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

Blocking peptide available for competition studies, sc-365760 P, (100 µg peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% stabilizer protein).

## APPLICATIONS

Sorbitol Dehydrogenase (E-11) is recommended for detection of Sorbitol Dehydrogenase 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) and solid phase ELISA (starting dilution 1:30, dilution range 1:30-1:3000).

Sorbitol Dehydrogenase (E-11) is also recommended for detection of Sorbitol Dehydrogenase in additional species, including equine.

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.

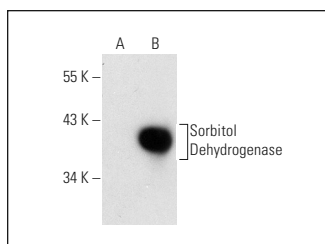
Molecular Weight of Sorbitol Dehydrogenase: 38 kDa.

Positive Controls: Sorbitol Dehydrogenase (m): 293T Lysate: sc-127569 or HeLa nuclear extract: sc-2120.

## 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



Sorbitol Dehydrogenase (E-11): sc-365760. Western blot analysis of Sorbitol Dehydrogenase expression in non-transfected: sc-117752 (A) and mouse Sorbitol Dehydrogenase transfected: sc-127569 (B) 293T 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.