SANTA CRUZ BIOTECHNOLOGY, INC.

Aldose Reductase (P-20): sc-17735

The Power to Question

BACKGROUND

Aldose reductase (designated ALR2) is a member of the monomeric NADPH-dependent aldoketoreductase family. Aldose reductase catalyzes the reduction of various aldehydes and has been implicated in the development of diabetic complications by catalyzing the reduction of the aldehyde form of glucose, to the corresponding sugar alcohol, sorbitol. This pathway plays a minor role in glucose metabolism in most tissues, however in diabetic hyperglycemia, cells undergoing Insulin-independent uptake of glucose accumulate significant quantities of sorbitol. The resulting hyperosmotic stress to cells may be a cause of diabetic complications such as neuropathy, retinopathy, and cataracts. Aldose reductase is very similar to human aldehyde reductase (designated ALR1), bovine prostaglandin F synthase and to the European common frog protein, rho-crystallin.

CHROMOSOMAL LOCATION

Genetic locus: AKR1B1 (human) mapping to 7q33; Akr1b3 (mouse) mapping to 6 B1.

SOURCE

Aldose Reductase (P-20) is an affinity purified goat polyclonal antibody raised against a peptide mapping within an internal region of Aldose Reductase of mouse 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-17735 P, (100 µg peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% BSA).

APPLICATIONS

Aldose Reductase (P-20) is recommended for detection of Aldose Reductase (ALR2) of mouse, rat 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), 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 Aldose Reductase siRNA (h): sc-37119, Aldose Reductase siRNA (m): sc-29670, Aldose Reductase shRNA Plasmid (h): sc-37119-SH, Aldose Reductase shRNA Plasmid (m): sc-29670-SH, Aldose Reductase shRNA (h) Lentiviral Particles: sc-37119-V and Aldose Reductase shRNA (m) Lentiviral Particles: sc-29670-V.

Molecular Weight of Aldose Reductase: 37 kDa.

Positive Controls: Aldose Reductase (m): 293T Lysate: sc-118347, Caki-1 cell lysate: sc-2224 or RAW 264.7 whole cell lysate: sc-2211.

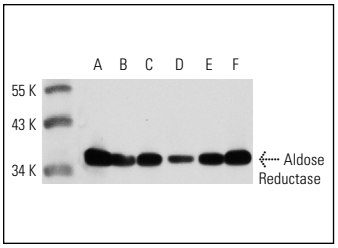
STORAGE

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

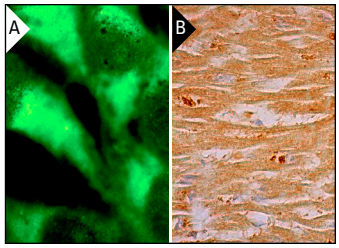
RESEARCH USE

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

DATA



Aldose Reductase (P-20): sc-17735. Western blot analysis of Aldose Reductase expression in C4 (**A**), RAW 264.7 (**B**), NIH/3T3 (**C**), Sol8 (**D**), 3T3-L1 (**E**) and F9 (**F**) whole cell lysates.



Aldose Reductase (P-20): sc-17735. Immunofluorescence staining of methanol-fixed Caki-1 cells showing cytoplasmic localization (**A**). Immunoperoxidase staining of formalin fixed, paraffin-embedded human heart muscle tissue showing cytoplasmic staining of myocytes (**B**).

SELECT PRODUCT CITATIONS

1. Pisitkun, T., et al. 2006. High-throughput identification of IMCD proteins using LC-MS/MS. Physiol. Genomics 25: 263-276.
2. Wang, G., et al. 2006. Automated quantification tool for high-throughput proteomics using stable isotope labeling and LC-MSn. Anal. Chem. 78: 5752-5761.
3. Kim, S., et al. 2008. A Proteomic approach for protein-profiling the oncogenic Ras induced transformation (H-, K-, and N-Ras) in NIH/3T3 mouse embryonic fibroblasts. Proteomics 8: 3082-3093.
4. Sachs, A.N., et al. 2008. LC-MS/MS analysis of differential centrifugation fractions from native inner medullary collecting duct of rat. Am. J. Physiol. Renal Physiol. 295: F1799-F1806.
5. Liu, W.H., et al. 2008. Berberine ameliorates renal injury in streptozotocin-induced diabetic rats by suppression of both oxidative stress and aldose reductase. Chin. Med. J. 121: 706-712.
6. Nambu, H., et al. 2008. Attenuation of aldose reductase gene suppresses high-glucose-induced apoptosis and oxidative stress in rat lens epithelial cells. Diabetes Res. Clin. Pract. 82: 18-24.
7. Tchapyjnikov, D., et al. 2010. Proteomic profiling of nuclei from native renal inner medullary collecting duct cells using LC-MS/MS. Physiol. Genomics 40: 167-183.

PROTOCOLS

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