SANTA CRUZ BIOTECHNOLOGY, INC.

Aldose Reductase (FL-316): sc-33219

SANTA CRUZ BIOTECHNOLOGY

The Power to Question

BACKGROUND

Aldose Reductase (also designated ALR2) is 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, ρ-crystallin.

CHROMOSOMAL LOCATION

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

SOURCE

Aldose Reductase (FL-316) is a rabbit polyclonal antibody raised against amino acids 1-316 representing full length Aldose Reductase 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.

APPLICATIONS

Aldose Reductase (FL-316) is recommended for detection of Aldose Reductase and Aldose Reductase-like proteins 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).

Aldose Reductase (FL-316) is also recommended for detection of Aldose Reductase and Aldose Reductase-like proteins in additional species, including equine, canine, bovine and porcine.

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 (h): 293T Lysate: sc-158263, HeLa whole cell lysate: sc-2200 or Sol8 cell lysate: sc-2249.

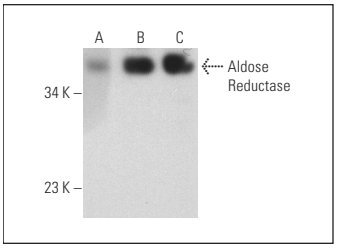
STORAGE

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

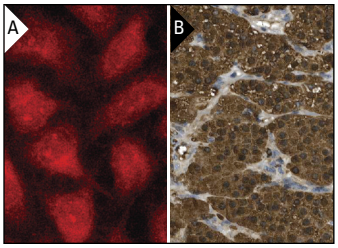
RESEARCH USE

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

DATA



Aldose Reductase (FL-316): sc-33219. Western blot analysis of Aldose Reductase expression in non-transfected 293: sc-110760 (**A**), human Aldose Reductase transfected 293: sc-158263 (**B**) and HeLa (**C**) whole cell lysates.



Aldose Reductase (FL-316): sc-33219. Immunofluorescence staining of methanol-fixed HeLa cells showing cytoplasmic and nuclear localization (**A**). Immunoperoxidase staining of formalin fixed, paraffin-embedded human adrenal gland tissue showing cytoplasmic and nuclear staining of cortical cells magnification. Kindly provided by The Swedish Human Protein Atlas (HPA) program (**B**).

SELECT PRODUCT CITATIONS

1. Martin, J.N., et al. 2009. Transcriptional and proteomic profiling in a cellular model of DYT1 dystonia. Neuroscience 164: 563-572.
2. Jiang, T., et al. 2010. The protective role of Nrf2 in streptozotocin-induced diabetic nephropathy. Diabetes 59: 850-860.
3. Diez-Dacal, B., et al. 2011. Identification of Aldo-keto reductase AKR1B10 as a selective target for modification and inhibition by prostaglandin A1: Implications for anti-tumoral activity. Cancer Res. 71: 4161-4171.
4. Zou, W., et al. 2012. Identification of differentially expressed proteins in the spinal cord of neuropathic pain models with PKCγ silence by proteomic analysis. Brain Res. 1440: 34-46.
5. Pieper, R., et al. 2015. Impact of high dietary zinc on zinc accumulation, enzyme activity and proteomic profiles in the pancreas of piglets. J. Trace Elem. Med. Biol. 30: 30-36.

PROTOCOLS

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