

Aldose Reductase (F-10): sc-133130

BACKGROUND

Aldose Reductase (also designated ALR2) is member of the monomeric NADPH-dependent aldo-ketoreductase 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.

REFERENCES

- Bohren, K.M., Bullock, B., Wermuth, B. and Gabbay, K.H. 1989. The aldo-keto reductase superfamily. cDNAs and deduced amino acid sequences of human aldehyde and Aldose Reductases. *J. Biol. Chem.* 264: 9547-9551.
- Chung, S. and LaMendola, J. 1989. Cloning and sequence determination of human placental Aldose Reductase gene. *J. Biol. Chem.* 264: 14775-14777.
- Nishimura, C., Matsuura, Y., Kokai, Y., Akera, T., Carper, D., Morjana, N., Lyons, C. and Flynn, T. G. 1990. Cloning and expression of human Aldose Reductase. *J. Biol. Chem.* 265: 9788-9792.
- Graham, A., Heath, P., Morten, J.E. and Markham, A.F. 1991. The human Aldose Reductase gene maps to chromosome region 7q35. *Hum. Genet.* 86: 509-514.
- LocusLink Report (LocusID: 231). <http://www.ncbi.nlm.nih.gov/LocusLink/>

CHROMOSOMAL LOCATION

Genetic locus: AKR1B1 (human) mapping to 7q33; Ak1b3 (mouse) mapping to 6 B1.

SOURCE

Aldose Reductase (F-10) is a mouse monoclonal antibody raised against amino acids 1-316 representing full length Aldose Reductase of human origin.

PRODUCT

Each vial contains 200 μ g IgG₁ kappa light chain in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

STORAGE

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

PROTOCOLS

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

APPLICATIONS

Aldose Reductase (F-10) is recommended for detection of Aldose Reductase and Aldose Reductase-like proteins of mouse, rat and human origin by Western Blotting (starting dilution 1:100, dilution range 1:100-1:1000), immunoprecipitation [1-2 μ g per 100-500 μ g 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.

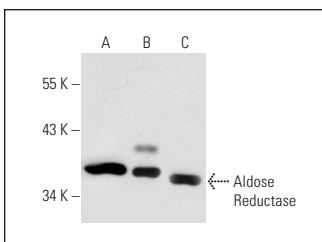
Molecular Weight of Aldose Reductase: 37 kDa.

Positive Controls: JAR cell lysate: sc-2276, Caki-1 cell lysate: sc-2224 or KNRK whole cell lysate: sc-2214.

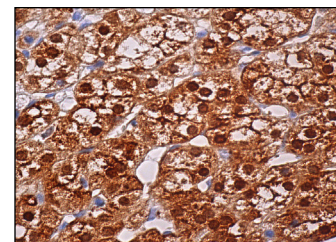
RECOMMENDED SUPPORT REAGENTS

To ensure optimal results, the following support reagents are recommended: 1) Western Blotting: use m-IgG κ BP-HRP: sc-516102 or m-IgG κ 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-IgG κ BP-FITC: sc-516140 or m-IgG κ BP-PE: sc-516141 (dilution range: 1:50-1:200) with UltraCruz® Mounting Medium: sc-24941 or UltraCruz® Hard-set Mounting Medium: sc-359850. 4) Immunohistochemistry: use m-IgG κ BP-HRP: sc-516102 with DAB, 50X: sc-24982 and Immunohistomount: sc-45086, or Organo/Limonene Mount: sc-45087.

DATA



Aldose Reductase (F-10): sc-133130. Western blot analysis of Aldose Reductase expression in Caki-1 (A), JAR (B) and KNRK (C) whole cell lysates.



Aldose Reductase (F-10): sc-133130. Immunoperoxidase staining of formalin fixed, paraffin-embedded human adrenal gland tissue showing cytoplasmic, membrane and nuclear staining of glandular cells.

RESEARCH USE

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