

# Aldolase C siRNA (m2): sc-270351

## BACKGROUND

Fructose 1,6-bisphosphate aldolase catalyses the reversible condensation of glyceraldehyde 3-phosphate and dihydroxyacetone phosphate into fructose 1,6-bisphosphate. Fructose 1,6-bisphosphate aldolase exists as three forms, the muscle-specific Aldolase A, the liver-specific Aldolase B, and the brain-specific Aldolase C. Aldolase A, B, and C arose from a common ancestral gene, from which Aldolase B first diverged. Aldolase A is one of the most highly conserved enzymes known, with only about 2% of the residues changing per 100 million years. Aldolase B is regulated by the hormones Insulin and glucagon and has been implicated in hereditary fructose intolerance disease. Aldolase C is a polypeptide that is exclusively expressed in Purkinje cells. Aldolase C-positive Purkinje cells are organized in the cerebellum as stripes or bands that run from anterior to posterior across the cerebellum and alternate with bands of Aldolase C-negative Purkinje cells.

## REFERENCES

1. Izzo, P., et al. 1988. Human Aldolase A gene. Structural organization and tissue-specific expression by multiple promoters and alternate mRNA processing. *Eur. J. Biochem.* 174: 569-578.
2. Freemont, P.S., et al. 1988. The complete amino acid sequence of human skeletal-muscle fructose-bisphosphate aldolase. *Biochem. J.* 249: 779-788.
3. Caffé, A.R., et al. 1994. Distribution of Purkinje cell-specific zebrin-II/Aldolase C immunoreactivity in the mouse, rat, rabbit, and human retina. *J. Comp. Neurol.* 348: 291-297.
4. Hawkes, R., et al. 1995. Aldolase C/zebrin II and the regionalization of the cerebellum. *J. Mol. Neurosci.* 6: 147-158.

## CHROMOSOMAL LOCATION

Genetic locus: Aldoc (mouse) mapping to 11 B5.

## PRODUCT

Aldolase C siRNA (m2) is a pool of 2 target-specific 19-25 nt siRNAs designed to knock down gene expression. Each vial contains 3.3 nmol of lyophilized siRNA, sufficient for a 10  $\mu$ M solution once resuspended using protocol below. Suitable for 50-100 transfections. Also see Aldolase C shRNA Plasmid (m2): sc-270351-SH and Aldolase C shRNA (m2) Lentiviral Particles: sc-270351-V as alternate gene silencing products.

For independent verification of Aldolase C (m2) gene silencing results, we also provide the individual siRNA duplex components. Each is available as 3.3 nmol of lyophilized siRNA. These include: sc-270351A and sc-270351B.

## STORAGE AND RESUSPENSION

Store lyophilized siRNA duplex at -20° C with desiccant. Stable for at least one year from the date of shipment. Once resuspended, store at -20° C, avoid contact with RNases and repeated freeze thaw cycles.

Resuspend lyophilized siRNA duplex in 330  $\mu$ l of the RNase-free water provided. Resuspension of the siRNA duplex in 330  $\mu$ l of RNase-free water makes a 10  $\mu$ M solution in a 10  $\mu$ M Tris-HCl, pH 8.0, 20 mM NaCl, 1 mM EDTA buffered solution.

## APPLICATIONS

Aldolase C siRNA (m2) is recommended for the inhibition of Aldolase C expression in mouse cells.

## SUPPORT REAGENTS

For optimal siRNA transfection efficiency, Santa Cruz Biotechnology's siRNA Transfection Reagent: sc-29528 (0.3 ml), siRNA Transfection Medium: sc-36868 (20 ml) and siRNA Dilution Buffer: sc-29527 (1.5 ml) are recommended. Control siRNAs or Fluorescein Conjugated Control siRNAs are available as 10  $\mu$ M in 66  $\mu$ l. Each contain a scrambled sequence that will not lead to the specific degradation of any known cellular mRNA. Fluorescein Conjugated Control siRNAs include: sc-36869, sc-44239, sc-44240 and sc-44241. Control siRNAs include: sc-37007, sc-44230, sc-44231, sc-44232, sc-44233, sc-44234, sc-44235, sc-44236, sc-44237 and sc-44238.

## GENE EXPRESSION MONITORING

Aldolase C (H-11): sc-271593 is recommended as a control antibody for monitoring of Aldolase C gene expression knockdown by Western Blotting (starting dilution 1:200, dilution range 1:100-1:1000) or immunofluorescence (starting dilution 1:50, dilution range 1:50-1:500).

To ensure optimal results, the following support reagents are recommended: 1) Western Blotting: use m-IgG $\kappa$  BP-HRP: sc-516102 or m-IgG $\kappa$  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) Immunofluorescence: use m-IgG $\kappa$  BP-FITC: sc-516140 or m-IgG $\kappa$  BP-PE: sc-516141 (dilution range: 1:50-1:200) with UltraCruz® Mounting Medium: sc-24941 or UltraCruz® Hard-set Mounting Medium: sc-359850.

## RT-PCR REAGENTS

Semi-quantitative RT-PCR may be performed to monitor Aldolase C gene expression knockdown using RT-PCR Primer: Aldolase C (m2)-PR: sc-270351-PR (20  $\mu$ l). Annealing temperature for the primers should be 55-60° C and the extension temperature should be 68-72° C.

## SELECT PRODUCT CITATIONS

1. Ruan, W., et al. 2019. Intranasal Wnt-3a alleviates neuronal apoptosis in early brain injury post subarachnoid hemorrhage via the regulation of Wnt target PPAN mediated by the moonlighting role of Aldolase C. *Neurochem. Int.* 134: 104656.

## RESEARCH USE

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

## PROTOCOLS

See our web site at [www.scbt.com](http://www.scbt.com) for detailed protocols and support products.