SANTA CRUZ BIOTECHNOLOGY, INC.

Aldolase B siRNA (m): sc-29667

BACKGROUND

Fructose 1,6-bisphosphate Aldolase catalyses the reversible condensation of glycerone-P and glyceraldehyde 3-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 diverge. 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. Caffe, 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.
3. Hawkes, R., et al. 1995. Aldolase C/zebrin II and the regionalization of the cerebellum. J. Mol. Neurosci. 6: 147-158.
4. Lannoo, M.J. and Hawkes, R. 1997. A search for primitive Purkinje cells: zebrin II expression in sea lampreys *(Petromyzon marinus)*. Neurosci. Lett. 237: 53-55.
5. Freemont, P.S., et al. 1988. The complete amino acid sequence of human skeletal-muscle fructose-bisphosphate Aldolase. Biochem. J. 249: 779-788.
6. Walther, E.U., et al. 1998. Genomic sequences of Aldolase C (zebrin II) direct lacZ expression exclusively in non-neuronal cells of transgenic mice. Proc. Natl. Acad. Sci. USA 95: 2615-2620.

CHROMOSOMAL LOCATION

Genetic locus: Aldob (mouse) mapping to 4 B1.

PRODUCT

Aldolase B siRNA (m) is a pool of 3 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 µM solution once resuspended using protocol below. Suitable for 50-100 transfections. Also see Aldolase B shRNA Plasmid (m): sc-29667-SH and Aldolase B shRNA (m) Lentiviral Particles: sc-29667-V as alternate gene silencing products.

For independent verification of Aldolase B (m) gene silencing results, we also provide the individual siRNA duplex components. Each is available as 3.3 nmol of lyophilized siRNA. These include: sc-29667A, sc-29667B and sc-29667C.

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 µl of the RNAse-free water provided. Resuspension of the siRNA duplex in 330 µl of RNAse-free water makes a 10 µM solution in a 10 µM Tris-HCl, pH 8.0, 20 mM NaCl, 1 mM EDTA buffered solution.

APPLICATIONS

Aldolase B siRNA (m) is recommended for the inhibition of Aldolase B 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 µM in 66 µl. 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 B (C-11): sc-393278 is recommended as a control antibody for monitoring of Aldolase B 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-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) 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.

RT-PCR REAGENTS

Semi-quantitative RT-PCR may be performed to monitor Aldolase B gene expression knockdown using RT-PCR Primer: Aldolase B (m)-PR: sc-29667-PR (20 µl, 489 bp). Annealing temperature for the primers should be 55-60° C and the extension temperature should be 68-72° C.

RESEARCH USE

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

PROTOCOLS

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