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Zic2 siRNA (h): sc-45881

BACKGROUND

Zic2 (zinc finger protein of the cerebellum 2) is a C₂H₂ zinc finger transcription factor that influences forebrain development. Zic2 is a transcriptional repressor and may regulate tissue specific expression of dopamine receptor D1. Zic2 transcript is abundant in the dorsal neural tube/spinal cord and in the hindbrain. A polyhistidine tract polymorphism in this gene may be associated with increased risk of neural tube defects. This gene is closely linked to a gene encoding zinc finger protein of the cerebellum 5, a related family member on chromosome 13.

REFERENCES

1. Nagai, T., et al. 1997. The expression of the mouse Zic1, Zic2, and Zic3 gene suggests an essential role for Zic genes in body pattern formation. *Dev. Biol.* 182: 299-313.
2. Aruga, J., et al. 1998. Mouse Zic1 is involved in cerebellar development. *J. Neurosci.* 18: 284-293.
3. Ogura, H., et al. 2001. Behavioral abnormalities of Zic1 and Zic2 mutant mice: implications as models for human neurological disorders. *Behav. Genet.* 31: 317-324.
4. Salero, E., et al. 2001. Transcription factors Zic1 and Zic2 bind and transactivate the apolipoprotein E gene promoter. *J. Biol. Chem.* 276: 1881-1888.
5. Aruga, J., et al. 2002. Zic1 promotes the expansion of dorsal neural progenitors in spinal cord by inhibiting neuronal differentiation. *Dev. Biol.* 244: 329-341.

CHROMOSOMAL LOCATION

Genetic locus: ZIC2 (human) mapping to 13q32.3.

PRODUCT

Zic2 siRNA (h) 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 Zic2 shRNA Plasmid (h): sc-45881-SH and Zic2 shRNA (h) Lentiviral Particles: sc-45881-V as alternate gene silencing products.

For independent verification of Zic2 (h) gene silencing results, we also provide the individual siRNA duplex components. Each is available as 3.3 nmol of lyophilized siRNA. These include: sc-45881A, sc-45881B and sc-45881C.

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

Zic2 shRNA (h) Lentiviral Particles is recommended for the inhibition of Zic2 expression in human 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

Zic2 (3C12): sc-517055 is recommended as a control antibody for monitoring of Zic2 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 Zic2 gene expression knockdown using RT-PCR Primer: Zic2 (h)-PR: sc-45881-PR (20 μl). Annealing temperature for the primers should be 55-60° C and the extension temperature should be 68-72° C.

SELECT PRODUCT CITATIONS

1. Tan, Y., et al. 2020. Silencing of brain-expressed X-linked 2 (BEX2) promotes colorectal cancer metastasis through the Hedgehog signaling pathway. *Int. J. Biol. Sci.* 16: 228-238.

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.