SANTA CRUZ BIOTECHNOLOGY, INC.

Islet-2 siRNA (m): sc-62510

BACKGROUND

Islet-2 (insulin gene enhancer protein ISL-2) is a 359 amino acid protein encoded by the human gene ISL2. Islet-2 is a nuclear protein that contains two N-terminal LIM domains, followed by a homeodomain and a serine/glutamine/threonine-rich C-terminus. Islet-2 is a transcriptional factor that defines subclasses of motor neurons that segregate into columns in the spinal cord and select distinct axon pathways. Islet-1 and Islet-2 are initially expressed by all postmitotic spinal motor neurons prior to diversification of somatic and visceral neuronal fates. Somatic, but not visceral, motor neurons maintain Islet-2 expression at later embryonic stages. An early phase of Islet-2 expression by prospective visceral motor neurons of the sympathetic preganglionic motor column is critical for the emergence of complete visceral motor neuron character. Mutations that reduce or eliminate both Islet-1 and Islet-2 activity will result in pronounced defects in visceral motor neuron generation and eroded somatic motor neuron character.

REFERENCES

1. Segawa, H., et al. 2001. Functional repression of Islet-2 by disruption of complex with Ldb impairs peripheral axonal outgrowth in embryonic zebrafish. Neuron 30: 423-436.
2. Koulakov, A.A. and Tsigankov, D.N. 2004. A stochastic model for retinocollicular map development. BMC Neurosci. 5: 30.
3. Yeo, S.Y., et al. 2004. Involvement of Islet-2 in the Slit signaling for axonal branching and defasciculation of the sensory neurons in embryonic zebrafish. Mech. Dev. 121: 315-324.
4. Pak, W., et al. 2004. Magnitude of binocular vision controlled by Islet-2 repression of a genetic program that specifies laterality of retinal axon pathfinding. Cell 119: 567-578.
5. Ravier, M.A. and Rutter, G.A. 2005. Glucose or Insulin, but not zinc ions, inhibit glucagon secretion from mouse pancreatic α-cells. Diabetes 54: 1789-1797.
6. Edqvist, P.H., et al. 2006. Early identification of retinal subtypes in the developing, pre-laminated chick retina using the transcription factors Prox1, Lim1, Ap2α, Pax6, Isl1, Isl2, Lim3 and Chx10. Eur. J. Histochem. 50: 147-154.

CHROMOSOMAL LOCATION

Genetic locus: Isl2 (mouse) mapping to 9 B.

PRODUCT

Islet-2 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 Islet-2 shRNA Plasmid (m): sc-62510-SH and Islet-2 shRNA (m) Lentiviral Particles: sc-62510-V as alternate gene silencing products.

For independent verification of Islet-2 (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-62510A, sc-62510B and sc-62510C.

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

Islet-2 siRNA (m) is recommended for the inhibition of Islet-2 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

Islet-2 (A-1): sc-390746 is recommended as a control antibody for monitoring of Islet-2 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 Islet-2 gene expression knockdown using RT-PCR Primer: Islet-2 (m)-PR: sc-62510-PR (20 µl). 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.