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SANTA CRUZ BIOTECHNOLOGY, INC.

GDF-11 siRNA (m): sc-44725

BACKGROUND

GDF-11, a member of the Transforming Growth Factor (TGF) β superfamily, controls anterior/posterior patterning of the axial skeleton, regulates organogenesis by controlling expression of Gdnf, contributes to the control of Hox gene expression, and induces phosphorylation of Smad2. In addition, GDF-11 mediates signaling of Nodal during left-right patterning and development of head structures and inhibits generation of new neurons by neuronal progenitors in the olfactory epithelium.

REFERENCES

1. McPherron, A.C., et al. 1999. Regulation of anterior/posterior patterning of the axial skeleton by growth/differentiation factor 11. Nat. Genet. 22: 260-264.
2. Gad, J.M. and Tam P.P. 1999. Axis development: the mouse become daschund. Curr. Biol. 9: R783-R786.
3. Gamer, L.W., et al. 2001. Gdf11 is a negative regulator of chondrogenesis and myogenesis in the developing chick limb. Dev. Biol. 229: 407-420.
4. Liu, J.P., et al. 2001. Assigning the positional identity of spinal motor neurons: rostrocaudal patterning of Hox-c expression by FGFs, Gdf11, and retinoids. Neuron 32: 997-1012.
5. Oh, S.P., et al. 2002. Activin type IIA and IIB receptors mediate Gdf11 signaling in axial vertebral patterning. Genes Dev. 16: 2749-2754.
6. Wu, H.H., et al. 2003. Autoregulation of neurogenesis by GDF11. Neuron 37: 197-207.
7. Esquela, A.F. and Lee, S.J. 2003. Regulation of metanephric kidney development by growth/differentiation factor 11. Dev. Biol. 257: 356-370.

CHROMOSOMAL LOCATION

Genetic locus: Gdf11 (mouse) mapping to 10 D3.

PRODUCT

GDF-11 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 GDF-11 shRNA Plasmid (m): sc-44725-SH and GDF-11 shRNA (m) Lentiviral Particles: sc-44725-V as alternate gene silencing products.

For independent verification of GDF-11 (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-44725A, sc-44725B and sc-44725C.

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.

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

GDF-11 siRNA (m) is recommended for the inhibition of GDF-11 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

GDF-11 (X-19): sc-81952 is recommended as a control antibody for monitoring of GDF-11 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 GDF-11 gene expression knockdown using RT-PCR Primer: GDF-11 (m)-PR: sc-44725-PR (20 µl). Annealing temperature for the primers should be 55-60° C and the extension temperature should be 68-72° C.