SANTA CRUZ BIOTECHNOLOGY, INC.

GDF-9 siRNA (h): sc-39776

BACKGROUND

Growth/differentiation factors (GDFs) are members of the TGF superfamily. Members of the TGF superfamily are involved in embryonic development and adult tissue homeostasis. GDF-1 expression is almost exclusively restricted to the central nervous system and mediates cell differentiation events during embryonic development. Neither GDF-3 (Vgr-2) nor GDF-9 contains the conserved cysteine residue which is found in most other TGF superfamily members. GDF-3 is detectable in bone marrow, spleen, thymus and adipose tissue, whereas GDF-9 has been detected in ovary and is required for ovarian folliculogenesis. GDF-5 (also designated CDMP-1) has been shown to induce activation of plasminogen activator, thereby inducing angiogenesis. It is predominantly expressed in long bones during fetal embryonic development and is involved in bone formation. GDF-5 mutations have been identified in mice with the mutation brachypodism (bp), a mutation which affects the length and number of bones in limbs. GDF-6 and GDF-7 are closely related to GDF-5. GDF-8 has been shown to be a negative regulator of skeletal muscle mass.

REFERENCES

1. Massague, J. 1990. The transforming growth factor β family. Annu. Rev. Cell Biol. 6: 597-641.
2. Lee, S.J. 1991. Expression of growth/differentiation factor 1 in the nervous system: conservation of a bicistronic structure. Proc. Natl. Acad. Sci. USA 88: 4250-4254.
3. McPherron, A.C., et al. 1993. GDF-3 and GDF-9: two new members of the transforming growth factor β superfamily containing a novel pattern of cysteines. J. Biol. Chem. 268: 3444-3449.
4. Storm, E.E., et al. 1994. Limb alterations in brachypodism mice due to mutations in a new member of the TGFβ superfamily. Nature 368: 639-643.
5. Yamashita, H., et al. 1997. Growth differentiation factor-5 induces angiogenesis *in vivo*. Exp. Cell Res. 235: 218-226.
6. McPherron, A.C., et al. 1997. Regulation of skeletal muscle mass in mice by a new TGFβ superfamily member. Nature 387: 83-90.

CHROMOSOMAL LOCATION

Genetic locus: GDF9 (human) mapping to 5q31.1.

PRODUCT

GDF-9 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 GDF-9 shRNA Plasmid (h): sc-39776-SH and GDF-9 shRNA (h) Lentiviral Particles: sc-39776-V as alternate gene silencing products.

For independent verification of GDF-9 (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-39776A, sc-39776B and sc-39776C.

RESEARCH USE

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

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-9 siRNA (h) is recommended for the inhibition of GDF-9 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

GDF-9 (C-6): sc-514933 is recommended as a control antibody for monitoring of GDF-9 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-9 gene expression knockdown using RT-PCR Primer: GDF-9 (h)-PR: sc-39776-PR (20 µl). Annealing temperature for the primers should be 55-60° C and the extension temperature should be 68-72° C.

PROTOCOLS

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