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chordin siRNA (h): sc-42136

BACKGROUND

The patterning of the CNS relies on the interaction of multiple signaling molecules such as Sonic Hedgehog, Wnts and BMPs and their antagonists chordin and Noggin. At midgastrula, expression of Noggin overlaps that of chordin. Chordin is a key developmental protein that dorsalizes early vertebrate embryonic tissues by binding to ventralizing TGF β -like bone morphogenetic proteins and sequestering them in latent complexes. Chordin dorsalizes early vertebrate embryonic tissues by binding to bone morphogenetic proteins and sequestering them in latent complexes. The gene which encodes chordin maps to human chromosome 3q27.1. Noggin is a secreted protein that binds and inactivates members of the TGF β superfamily of signaling proteins, such as BMP-2,4,7. The gene which encodes Noggin maps to human chromosome 17q22.

REFERENCES

1. Valenzuela, D.M., et al. 1995. Identification of mammalian Noggin and its expression in the adult nervous system. *J. Neurosci.* 15: 6077-6084.
2. Zimmerman, L.B., et al. 1996. The Spemann organizer signal Noggin binds and inactivates bone morphogenetic protein 4. *Cell* 86: 599-606.
3. Pappano, W.N., et al. 1998. Coding sequence and expression patterns of mouse chordin and mapping of the cognate mouse chrd and human CHR genes. *Genomics* 52: 236-239.
4. Scott, I.C., et al. 1999. Mammalian BMP-1/Tolloid-related metalloproteinases, including novel family member mammalian Tolloid-like 2, have differential enzymatic activities and distributions of expression relevant to patterning and skeletogenesis. *Dev. Biol.* 213: 283-300.
5. Bachiller, D., et al. 2000. The organizer factors chordin and Noggin are required for mouse forebrain development. *Nature* 403: 658-661.
6. Wessely, O., et al. 2002. Neural plate patterning by secreted signals. *Neuron* 33: 489-491.

CHROMOSOMAL LOCATION

Genetic locus: CHR (human) mapping to 3q27.1.

PRODUCT

chordin 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 μ M solution once resuspended using protocol below. Suitable for 50-100 transfections. Also see chordin shRNA Plasmid (h): sc-42136-SH and chordin shRNA (h) Lentiviral Particles: sc-42136-V as alternate gene silencing products.

For independent verification of chordin (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-42136A, sc-42136B and sc-42136C.

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 μ l of the RNase-free water provided. Resuspension of the siRNA duplex in 330 μ l of RNase-free water makes a 10 μ M solution in a 10 μ M Tris-HCl, pH 8.0, 20 mM NaCl, 1 mM EDTA buffered solution.

APPLICATIONS

chordin siRNA (h) is recommended for the inhibition of chordin 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 μ M in 66 μ l. 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.

RT-PCR REAGENTS

Semi-quantitative RT-PCR may be performed to monitor chordin gene expression knockdown using RT-PCR Primer: chordin (h)-PR: sc-42136-PR (20 μ l). 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.