SANTA CRUZ BIOTECHNOLOGY, INC.

patched 2 siRNA (m): sc-40160

BACKGROUND

Overexpression of either Wnt-1 or the GLI proteins has been shown to result in cancer. These proteins exist in a signal cascade downstream of the mammalian homologs of the *Drosophila* hedgehog (hh) and patched (ptc) proteins. The hedgehog protein mediates embryonic and imaginal disc patterning, and patched expression is precisely regulated during embryonic development. Hedgehog enhances the expression of the Wnt family of proteins through a signaling cascade involving the GLI transcription factors, while patched functions as a repressor opposing the effects of hedgehog. Mutations in the ptc gene, which result in unregulated hedgehog signaling, correlates with the most common type of cancer, basal cell carcinoma, which affects 750,000 individuals annually in the United States. An additional patched family member, patched 2, has been found to be coexpressed with Sonic hedgehog.

REFERENCES

1. Nusslein-Volhard, C., et al. 1980. Mutations affecting segment number and polarity in *Drosophila*. Nature 287: 795-801.
2. Kinzler, K.W., et al. 1987. Identification of an amplified, highly expressed gene in a human glioma. Science 236: 70-73.
3. Parkin, N.T., et al. 1993. Activity of Wnt-1 as a transmembrane protein. Genes Dev. 7: 2181-2193.
4. Marti, E., et al. 1995. Requirement of 19K form of Sonic hedgehog for induction of distinct ventral cell types in CNS explants. Nature 375: 322-325.
5. Johnson, R.L., et al. 1995. The long and short of hedgehog signaling. Cell 81: 313-316.
6. Roelink, H., et al. 1995. Floor plate and motor neuron induction by different concentrations of the amino-terminal cleavage product of Sonic hedgehog autoproteolysis. Cell 81: 445-455.
7. Pennisi, E. 1996. Gene linked to commonest cancer. Science 272: 1583-1584.
8. Johnson, R.L., et al. 1996. Human homolog of patched, a candidate gene for the basal cell nevus syndrome. Science 272: 1668-1671.

CHROMOSOMAL LOCATION

Genetic locus: Ptch2 (mouse) mapping to 4 D1.

PRODUCT

patched 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 patched 2 shRNA Plasmid (m): sc-40160-SH and patched 2 shRNA (m) Lentiviral Particles: sc-40160-V as alternate gene silencing products.

For independent verification of patched 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-40160A, sc-40160B and sc-40160C.

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

patched 2 siRNA (m) is recommended for the inhibition of patched 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.

RT-PCR REAGENTS

Semi-quantitative RT-PCR may be performed to monitor patched 2 gene expression knockdown using RT-PCR Primer: patched 2 (m)-PR: sc-40160-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.