SANTA CRUZ BIOTECHNOLOGY, INC.

Prop-1 siRNA (m): sc-38202

BACKGROUND

The gene encoding a novel type of pituitary-specific transcription factor, Prophet of Pit-1 (Prop1), is a causative agent in combined pituitary hormone deficiency. Prop1 is expressed in normal pituitary gland, but is absent from normal brain tissue, glioblastomas (cell lines and tumor tissues) and meningioma. Prop1 is also expressed in both the pituitary tumors and normal human adult pituitary tissues, suggesting that Prop1 is an essential transcription factor for pituitary specific gene expression in human. Therefore, detection of Prop1 might be an indicator for differentiating pituitary adenomas, regardless of their hormonal phenotypes, in respect to other brain tumors. Mutations in the Prop1 gene can also result in abnormal pituitary development in humans, leading to multiple hormone deficiencies. Furthermore, the DNA symmetry in the Prop-1 gene contributes to the frequency with which this gene is mutated. The finding that mutations in this gene in humans can result in both hypothalamic defects and defects in gonadotropin secretion suggests that this protein may have important functions during development.

REFERENCES

1. Sornson, M.W., et al. 1996. Pituitary lineage determination by the Prophet of Pit-1 homeodomain factor defective in Ames dwarfism. Nature 384: 327-333.
2. Brown, M.R., et al. 1998. Central hypothyroidism reveals compound heterozygous mutations in the Pit-1 gene. Horm. Res. 49: 98-102.
3. Fofanova, O.V., et al. 1998. A mutational hot spot in the Prop-1 gene in Russian children with combined pituitary hormone deficiency. Pituitary 1: 45-49.
4. Nakamura, S., et al. 1999. Prop-1 gene expression in human pituitary tumors. J. Clin. Endocrinol. Metab. 84: 2581-2584.
5. Osorio, M.G., et al. 2000. Combined pituitary hormone deficiency caused by a novel mutation of a highly conserved residue (F88S) in the homeodomain of PROP-1. J. Clin. Endocrinol. Metab. 85: 2779-2785.

CHROMOSOMAL LOCATION

Genetic locus: Prop1 (mouse) mapping to 11 B1.3.

PRODUCT

Prop-1 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 Prop-1 shRNA Plasmid (m): sc-38202-SH and Prop-1 shRNA (m) Lentiviral Particles: sc-38202-V as alternate gene silencing products.

For independent verification of Prop-1 (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-38202A, sc-38202B and sc-38202C.

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

Prop-1 siRNA (m) is recommended for the inhibition of Prop-1 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 Prop-1 gene expression knockdown using RT-PCR Primer: Prop-1 (m)-PR: sc-38202-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.