



Puratrophin 1 siRNA (m): sc-152592

BACKGROUND

Puratrophin 1, also known as PLEKHG4 (pleckstrin homology domain containing, family G (with RhoGef domain) member 4), is a 1,191 amino acid protein that contains one DH (DBL-homology) domain and one PH domain. The Puratrophin 1 protein contains multiple domains, such as a pleckstrin-like homology domain, cellular retinaldehyde-binding/triple function domain, a spectrin repeat domain, and a guanine-nucleotide exchange factor domain, suggesting a role in intracellular signaling and cytoskeleton dynamics at the Golgi apparatus. Most strongly expressed in testis and pancreas, the Puratrophin 1 protein is expressed in kidney, Leydig cells in the testis, epithelial cells in the prostate gland and Langerhans islet in the pancreas. Existing as three alternatively spliced isoforms, the Puratrophin 1 gene is conserved in canine, bovine, mouse and rat, and maps to human chromosome 16q22.1. Mutations in the Puratrophin 1 gene are associated with spinocerebellar ataxia 16q22-linked.

REFERENCES

1. Flanigan, K., et al. 1996. Autosomal dominant spinocerebellar ataxia with sensory axonal neuropathy (SCA4): clinical description and genetic localization to chromosome 16q22.1. *Am. J. Hum. Genet.* 59: 392-399.
2. Ishikawa, K., et al. 2005. An autosomal dominant cerebellar ataxia linked to chromosome 16q22.1 is associated with a single-nucleotide substitution in the 5' untranslated region of the gene encoding a protein with spectrin repeat and Rho guanine-nucleotide exchange-factor domains. *Am. J. Hum. Genet.* 77: 280-296.
3. Online Mendelian Inheritance in Man, OMIM™. 2005. Johns Hopkins University, Baltimore, MD. MIM Number: 609526. World Wide Web URL: <http://www.ncbi.nlm.nih.gov/omim/>
4. Lim, J., et al. 2006. A protein-protein interaction network for human inherited ataxias and disorders of Purkinje cell degeneration. *Cell* 125: 801-814.
5. Wiczorek, S., et al. 2006. Mutations of the Puratrophin 1 (PLEKHG4) gene on chromosome 16q22.1 are not a common genetic cause of cerebellar ataxia in a European population. *J. Hum. Genet.* 51: 363-367.
6. Ohata, T., et al. 2006. A -16C>T substitution in the 5' UTR of the puratrophin-1 gene is prevalent in autosomal dominant cerebellar ataxia in Nagano. *J. Hum. Genet.* 51: 461-466.
7. Ouyang, Y., et al. 2006. 16q-linked autosomal dominant cerebellar ataxia: a clinical and genetic study. *J. Neurol. Sci.* 247: 180-186.
8. Amino, T., et al. 2007. Redefining the disease locus of 16q22.1-linked autosomal dominant cerebellar ataxia. *J. Hum. Genet.* 52: 643-649.

CHROMOSOMAL LOCATION

Genetic locus: Plekhg4 (mouse) mapping to 8 D3.

PROTOCOLS

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

PRODUCT

Puratrophin 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 μ M solution once resuspended using protocol below. Suitable for 50-100 transfections. Also see Puratrophin 1 shRNA Plasmid (m): sc-152592-SH and Puratrophin 1 shRNA (m) Lentiviral Particles: sc-152592-V as alternate gene silencing products.

For independent verification of Puratrophin 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-152592A, sc-152592B and sc-152592C.

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

Puratrophin 1 siRNA (m) is recommended for the inhibition of Puratrophin 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 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 Puratrophin 1 gene expression knockdown using RT-PCR Primer: Puratrophin 1 (m)-PR: sc-152592-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.