



FAM171A1 siRNA (h): sc-90617

BACKGROUND

FAM171A1, also known as Astropin, is a 890 amino acid single-pass type-I membrane protein that is encoded by a gene that maps to human chromosome 10p13, which contains over 800 genes and 135 million nucleotides, making up nearly 4.5% of the human genome. PTEN is an important tumor suppressor gene located on chromosome 10 and, when defective, causes a genetic predisposition to cancer development known as Cowden syndrome. The chromosome 10 encoded gene ERCC6 is important for DNA repair and is linked to Cockayne syndrome which is characterized by extreme photosensitivity and premature aging. Tetrahydrobiopterin deficiency and a number of syndromes involving defective skull and facial bone fusion are also linked to chromosome 10. As with most trisomies, trisomy 10 is rare and is deleterious.

REFERENCES

1. Fryns, J.P., et al. 1991. Apparent late-onset Cockayne syndrome and interstitial deletion of the long arm of chromosome 10 (del(10)(q11.23q21.2)). *Am. J. Med. Genet.* 40: 343-344.
2. Thöny, B., et al. 1994. Chromosomal location of two human genes encoding tetrahydrobiopterin-metabolizing enzymes: 6-pyruvoyl-tetrahydropterin synthase maps to 11q22.3-q23.3, and pterin-4 α -carbinolamine dehydratase maps to 10q22. *Genomics* 19: 365-368.
3. Horibata, K., et al. 2004. Complete absence of Cockayne syndrome group B gene product gives rise to UV-sensitive syndrome but not Cockayne syndrome. *Proc. Natl. Acad. Sci. USA* 101: 15410-15415.
4. Teresi, R.E., et al. 2007. Cowden syndrome-affected patients with PTEN promoter mutations demonstrate abnormal protein translation. *Am. J. Hum. Genet.* 81: 756-767.
5. Cho, M.Y., et al. 2008. First report of ovarian dysgerminoma in Cowden syndrome with germline PTEN mutation and PTEN-related 10q loss of tumor heterozygosity. *Am. J. Surg. Pathol.* 32: 1258-1264.
6. Blumenthal, G.M. and Dennis, P.A. 2008. PTEN hamartoma tumor syndromes. *Eur. J. Hum. Genet.* 16: 1289-1300.
7. Utine, G.E., et al. 2008. Kabuki syndrome and trisomy 10p. *Genet. Couns.* 19: 291-300.

CHROMOSOMAL LOCATION

Genetic locus: FAM171A1 (human) mapping to 10p13.

PRODUCT

FAM171A1 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 FAM171A1 shRNA Plasmid (h): sc-90617-SH and FAM171A1 shRNA (h) Lentiviral Particles: sc-90617-V as alternate gene silencing products.

For independent verification of FAM171A1 (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-90617A, sc-90617B and sc-90617C.

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

FAM171A1 siRNA (h) is recommended for the inhibition of FAM171A1 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 FAM171A1 gene expression knockdown using RT-PCR Primer: FAM171A1 (h)-PR: sc-90617-PR (20 μ l). Annealing temperature for the primers should be 55-60° C and the extension temperature should be 68-72° C.

SELECT PRODUCT CITATIONS

1. Sanawar, R., et al. 2019. Estrogen receptor- α regulation of microRNA-590 targets FAM171A1—a modifier of breast cancer invasiveness. *Oncogenesis* 8: 5.

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.