SANTA CRUZ BIOTECHNOLOGY, INC.

PHF14 siRNA (m): sc-106407

BACKGROUND

PHF14 (PHD finger protein 14) is an 888 amino acid phosphoprotein that contains two PHD-type zinc fingers and exists as two alternatively spliced isoforms. Conserved in chimpanzee, bovine, mouse, rat, chicken, zebrafish, fruit fly and *Caenorhabditis elegans*, PHF14 is involved in chromatin-mediated transcriptional regulation and participates in protein, metal ion and zinc ion binding activities. Encoded by a gene that maps to human chromosome 7p21.3, mutations and deletions in PHF14 are linked to EGF receptor (EGFR) mutated tumors and Barrett's esophagus (BE), a metaplastic condition caused by chronic gastroesophageal reflux, which plays a role in the development of esophageal adenocarcinoma (EAC). PHF14 is a candidate colon cancer tumor suppressor gene.

REFERENCES

1. Zhou, M.I., et al. 2004. Tumor suppressor von Hippel-Lindau (VHL) stabilization of Jade-1 protein occurs through plant homeodomains and is VHL mutation dependent. Cancer Res. 64: 1278-1286.
2. Ivanov, I., et al. 2007. Identifying candidate colon cancer tumor suppressor genes using inhibition of nonsense-mediated mRNA decay in colon cancer cells. Oncogene 26: 2873-2884.
3. Blons, H., et al. 2008. Genome wide SNP comparative analysis between EGFR and KRAS mutated NSCLC and characterization of two models of oncogenic cooperation in non-small cell lung carcinoma. BMC Med. Genomics 1: 25.
4. Delplanque, J., et al. 2008. Slowly progressive spinocerebellar ataxia with extrapyramidal signs and mild cognitive impairment (SCA21). Cerebellum 7: 179-183.
5. Akagi, T., et al. 2009. Chromosomal abnormalities and novel disease-related regions in progression from Barrett's esophagus to esophageal adenocarcinoma. Int. J. Cancer 125: 2349-2359.
6. Barkalifa, R., et al. 2010. Sex-specific genetic dissection of diabetes in a rodent model identifies Ica1 and Ndufa4 as major candidate genes. Physiol. Genomics 42: 445-455.

CHROMOSOMAL LOCATION

Genetic locus: Phf14 (mouse) mapping to 6 A1.

PRODUCT

PHF14 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 PHF14 shRNA Plasmid (m): sc-106407-SH and PHF14 shRNA (m) Lentiviral Particles: sc-106407-V as alternate gene silencing products.

For independent verification of PHF14 (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-106407A, sc-106407B and sc-106407C.

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

PHF14 siRNA (m) is recommended for the inhibition of PHF14 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 PHF14 gene expression knockdown using RT-PCR Primer: PHF14 (m)-PR: sc-106407-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.