

FAM188A siRNA (h): sc-90372

BACKGROUND

FAM188A, also known as Dermal papilla-derived protein 5 and CARP, is a 445 amino acid nuclear protein that likely has pro-apoptotic function. It was originally thought that FAM188A contained a CARD domain, however none of the prediction tools have verified this. FAM188A is highly expressed in kidney, heart and skeletal muscle and is weakly expressed in brain and liver. There are two isoforms of FAM188A that are produced as a result of alternative splicing events. The gene encoding FAM188A maps to human chromosome 10, which contains over 800 genes and 135 million nucleotides. 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. Frys, J.P., Bulcke, J., Verdu, P., Carton, H., Kleczkowska, A. and Van den Berghe, H. 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., Heizmann, C.W. and Mattei, M.G. 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. Liu, B., Liu, Y., Chen, J., Wei, Z., Yu, H., Zhen, Y., Lu, L. and Hui, R. 2002. CARP is a novel caspase recruitment domain containing pro-apoptotic protein. *Biochem. Biophys. Res. Commun.* 293: 1396-1404.
4. Horibata, K., Iwamoto, Y., Kuraoka, I., Jaspers, N.G., Kurimasa, A., Oshimura, M., Ichihashi, M. and Tanaka, K. 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.
5. Teresi, R.E., Zbuk, K.M., Pezzolesi, M.G., Waite, K.A. and Eng, C. 2007. Cowden syndrome-affected patients with PTEN promoter mutations demonstrate abnormal protein translation. *Am. J. Hum. Genet.* 81: 756-767.
6. Cho, M.Y., Kim, H.S., Eng, C., Kim, D.S., Kang, S.J., Eom, M., Yi, S.Y. and Bronner, M.P. 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.
7. Blumenthal, G.M. and Dennis, P.A. 2008. PTEN hamartoma tumor syndromes. *Eur. J. Hum. Genet.* 16: 1289-1300.
8. Utine, G.E., Alanay, Y., Atkas, D., Boduroglu, K., Alikasifoglu, M. and Tunçbilek, E. 2008. Kabuki syndrome and trisomy 10p. *Genet. Couns.* 19: 291-300.
9. Yin, Y. and Shen, W.H. 2008. PTEN: a new guardian of the genome. *Oncogene* 27: 5443-5453.

CHROMOSOMAL LOCATION

Genetic locus: FAM188A (human) mapping to 10p13.

PRODUCT

FAM188A 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 FAM188A shRNA Plasmid (h): sc-90372-SH and FAM188A shRNA (h) Lentiviral Particles: sc-90372-V as alternate gene silencing products.

For independent verification of FAM188A (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-90372A, sc-90372B and sc-90372C.

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

FAM188A siRNA (h) is recommended for the inhibition of FAM188A 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 FAM188A gene expression knockdown using RT-PCR Primer: FAM188A (h)-PR: sc-90372-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.