SANTA CRUZ BIOTECHNOLOGY, INC.

Psf3 siRNA (h): sc-93348

BACKGROUND

The GINS complex is a heterotetramer consisting of Psf1, Psf2, Psf3 and SLD5. This complex plays an important role in the initiation of DNA replication and progression of DNA replication forks. Psf3, also known as GINS3 (GINS complex subunit 3), is a 216 amino acid nuclear protein that belongs to the GINS3/PSF3 family. Existing as two alternatively spliced isoforms, Psf3 forms a subcomplex with Psf2 and is encoded by a gene that maps to human chromosome 16q21. Human chromosome 16 encodes over 900 genes and comprises nearly 3% of the human genome. The GAN gene is located on chromosome 16 and, with mutation, may lead to giant axonal neuropathy, a nervous system disorder characterized by increasing malfunction with growth. The rare disorder Rubinstein-Taybi syndrome is also associated with chromosome 16, as is Crohn's disease, which is a gastrointestinal inflammatory condition.

REFERENCES

1. Baraitser, M. and Preece, M.A. 1983. The Rubinstein-Taybi syndrome: occurrence in two sets of identical twins. Clin. Genet. 23: 318-320.
2. Breuning, M.H., Dauwerse, H.G., Fugazza, G., Saris, J.J., Spruit, L., Wijnen, H., Tommerup, N., van der Hagen, C.B., Imaizumi, K., Kuroki, Y., van den Boogaard, M.J., de Pater, J.M., Mariman, E.C., Hamel, B.C., et al. 1993. Rubinstein-Taybi syndrome caused by submicroscopic deletions within 16p13.3. Am. J. Hum. Genet. 52: 249-254.
3. Bomont, P., Cavalier, L., Blondeau, F., Ben Hamida, C., Belal, S., Tazir, M., Demir, E., Topaloglu, H., Korinthenberg, R., Tüysüz, B., Landrieu, P., Hentati, F. and Koenig, M. 2000. The gene encoding gigaxonin, a new member of the cytoskeletal BTB/kelch repeat family, is mutated in giant axonal neuropathy. Nat. Genet. 26: 370-374.
4. Kuhlenbäumer, G., Young, P., Oberwittler, C., Hünermund, G., Schirmacher, A., Domschke, K., Ringelstein, B. and Stögbauer, F. 2002. Giant axonal neuropathy (GAN): case report and two novel mutations in the gigaxonin gene. Neurology 58: 1273-1276.
5. Takayama, Y., Kamimura, Y., Okawa, M., Muramatsu, S., Sugino, A. and Araki, H. 2003. GINS, a novel multiprotein complex required for chromosomal DNA replication in budding yeast. Genes Dev. 17: 1153-1165.
6. Cho, J.H. 2004. Advances in the genetics of inflammatory bowel disease. Curr. Gastroenterol. Rep. 6: 467-473.
7. Mathew, C.G. and Lewis, C.M. 2004. Genetics of inflammatory bowel disease: progress and prospects. Hum. Mol. Genet. 13: R161-R168.
8. Ueno, M., Itoh, M., Kong, L., Sugihara, K., Asano, M. and Takakura, N. 2005. PSF1 is essential for early embryogenesis in mice. Mol. Cell. Biol. 25: 10528-10532.

CHROMOSOMAL LOCATION

Genetic locus: GINS3 (human) mapping to 16q21.

ROTOCOLS

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

PRODUCT

Psf3 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 µM solution once resuspended using protocol below. Suitable for 50-100 transfections. Also see Psf3 shRNA Plasmid (h): sc-93348-SH and Psf3 shRNA (h) Lentiviral Particles: sc-93348-V as alternate gene silencing products.

For independent verification of Psf3 (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-93348A, sc-93348B and sc-93348C.

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

Psf3 siRNA (h) is recommended for the inhibition of Psf3 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 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 Psf3 gene expression knockdown using RT-PCR Primer: Psf3 (h)-PR: sc-93348-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.