SANTA CRUZ BIOTECHNOLOGY, INC.

GTPBP4 siRNA (h): sc-90817

BACKGROUND

Small G proteins act as molecular switches for regulation of variety of cellular processes, such as nuclear transport, signal transduction, membrane trafficking and protein synthesis. GTPBP4 (GTP binding protein 4), also designated nucleolar GTP-binding protein 1, chronic renal failure gene protein (CRFG), NOG1 or NGB, is a 634 amino acid novel GTP-binding protein that plays a role in 60S ribosomal subunit biogenesis and belongs to the GTP1/OBG family and NOG subfamily. Localizing to nucleolus, GTPBP4 has been observed to inhibit cell aggregation and growth when ectopically expressed in tumorigenic schwanomma cells, and is believed to act as a tumor supressor when working in conjunction with NF2 (merlin). GTPBP4 contains multiple phosphorylated amino acid residues and is encoded by a gene located on human chromosome 10p15.3.

REFERENCES

1. Laping, N.J., Olson, B.A. and Zhu, Y. 2001. Identification of a novel nuclear guanosine triphosphate-binding protein differentially expressed in renal disease. J. Am. Soc. Nephrol. 12: 883-890.
2. Scherl, A., Coute, Y., Deon, C., Calle, A., Kindbeiter, K., Sanchez, J.C., Greco, A., Hochstrasser, D. and Diaz, J.J. 2002. Functional proteomic analysis of human nucleolus. Mol. Biol. Cell 13: 4100-4109.
3. Jin, J., Smith, F.D., Stark, C., Wells, C.D., Fawcett, J.P., Kulkarni, S., Metalnikov, P., O'Donnell, P., Taylor, P., Taylor, L., Zougman, A., Woodgett, J.R., Langeberg, L.K., Scott, J.D. and Pawson, T. 2004. Proteomic, functional, and domain-based analysis of *in vivo* 14-3-3 binding proteins involved in cytoskeletal regulation and cellular organization. Curr. Biol. 14: 1436-1450.
4. Grupe, A., Li, Y., Rowland, C., Nowotny, P., Hinrichs, A.L., Smemo, S., Kauwe, J.S., Maxwell, T.J., Cherny, S., Doil, L., Tacey, K., van Luchene, R., Myers, A., Wavrant-De Vrièze, F., Kaleem, M., Hollingworth, P., et al. 2006. A scan of chromosome 10 identifies a novel locus showing strong association with late-onset Alzheimer disease. Am. J. Hum. Genet. 78: 78-88.
5. Ye, K. 2007. Phosphorylation of merlin regulates its stability and tumor suppressive activity. Cell Adh. Migr. 1: 196-198.
6. Lee, H., Kim, D., Dan, H.C., Wu, E.L., Gritsko, T.M., Cao, C., Nicosia, S.V., Golemis, E.A., Liu, W., Coppola, D., Brem, S.S., Testa, J.R. and Cheng, J.Q. 2007. Identification and characterization of putative tumor suppressor NGB, a GTP-binding protein that interacts with the neurofibromatosis 2 protein. Mol. Cell. Biol. 27: 2103-2119.
7. Scoles, D.R. 2008. The merlin interacting proteins reveal multiple targets for NF2 therapy. Biochim. Biophys. Acta 1785: 32-54.

CHROMOSOMAL LOCATION

Genetic locus: GTPBP4 (human) mapping to 10p15.3.

PROTOCOLS

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

PRODUCT

GTPBP4 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 GTPBP4 shRNA Plasmid (h): sc-90817-SH and GTPBP4 shRNA (h) Lentiviral Particles: sc-90817-V as alternate gene silencing products.

For independent verification of GTPBP4 (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-90817A, sc-90817B and sc-90817C.

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

GTPBP4 siRNA (h) is recommended for the inhibition of GTPBP4 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 GTPBP4 gene expression knockdown using RT-PCR Primer: GTPBP4 (h)-PR: sc-90817-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.