SANTA CRUZ BIOTECHNOLOGY, INC.

GTPBP2 siRNA (h): sc-95104

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. GTPBP2 (GTP-binding protein 2) is a 602 amino acid G protein that is expressed in kidney, skeletal muscle, testis, brain and thymus, though it is not detected in liver. Expression of GTPBP2 is enhanced by γ-interferon stimulation in HeLa cells, THP-1 cells and thioglycollate-elicited mouse peritoneal macrophages. There are four isoforms of GTPBP2 that are expressed as a result of alternative splicing events. Since mutation of the gene encoding GTPBP1 does not lead to any phenotypic abnormalities, it is thought that there may be a genetic redundancy to make up for GTPBP1 lack-of-function. GTPBP2 shares 44% sequence similarity with GTPBP1 and also overlaps in expression pattern, suggesting that the GTPBP2 gene may compensate for GTPBP1 genetic abnormalities.

REFERENCES

1. Kudo, H., et al. 2000. Mouse and human GTPBP2, newly identified members of the GP-1 family of GTPase. Biochem. Biophys. Res. Commun. 272: 456-465.
2. Watanabe, M., et al. 2000. Cloning, expression analysis, and chromosomal mapping of GTPBP2, a novel member of the G protein family. Gene 256: 51-58.
3. Senju, S., et al. 2000. Immunocytochemical analyses and targeted gene disruption of GTPBP1. Mol. Cell. Biol. 20: 6195-6200.
4. Online Mendelian Inheritance in Man, OMIM™. 2002. Johns Hopkins University, Baltimore, MD. MIM Number: 607434. World Wide Web URL: http://www.ncbi.nlm.nih.gov/omim/
5. Mungall, A.J., et al. 2003. The DNA sequence and analysis of human chromosome 6. Nature 425: 805-811.
6. Mulholland, P.J., et al. 2006. Genomic profiling identifies discrete deletions associated with translocations in glioblastoma multiforme. Cell Cycle 5: 783-791.

CHROMOSOMAL LOCATION

Genetic locus: GTPBP2 (human) mapping to 6p21.1.

PRODUCT

GTPBP2 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 GTPBP2 shRNA Plasmid (h): sc-95104-SH and GTPBP2 shRNA (h) Lentiviral Particles: sc-95104-V as alternate gene silencing products.

For independent verification of GTPBP2 (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-95104A, sc-95104B and sc-95104C.

RESEARCH USE

For research use only, not for use in diagnostic procedures.

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

GTPBP2 siRNA (h) is recommended for the inhibition of GTPBP2 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 GTPBP2 gene expression knockdown using RT-PCR Primer: GTPBP2 (h)-PR: sc-95104-PR (20 µl). Annealing temperature for the primers should be 55-60° C and the extension temperature should be 68-72° C.

PROTOCOLS

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