SANTA CRUZ BIOTECHNOLOGY, INC.

GTPBP1 siRNA (m): sc-145825

BACKGROUND

The gene encoding GTPBP1 (GTP-binding protein 1), a 669 amino acid cytoplasmic protein, is highly conserved among species with 97% sequence similarity between the human and mouse homologs. While mainly expressed in smooth muscle, brain, thymus, kidney and lung, expression of GTPBP1 in monocytes can be induced by IFN-γ, a finding which is similar with other members of the G protein superfamily. The primary structure of GTPBP1 seems to indicate that it is related to EF-1 α and EF-Tu, G proteins that are important components of protein synthesis machinery. 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

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3. Senju, S. and Nishimura, Y. 1997. Identification of human and mouse GP-1, a putative member of a novel G-protein family. Biochem. Biophys. Res. Commun. 231: 360-364.
4. Kudo, H., Senju, S., Mitsuya, H. and Nishimura, Y. 2000. Mouse and human GTPBP2, newly identified members of the GP-1 family of GTPase. Biochem. Biophys. Res. Commun. 272: 456-465.
5. Watanabe, M., Yoshida, K., Hida, M., Kato, H., Uchida, K., Yamaguchi, R., Tateyama, S. and Sugano, S. 2000. Cloning, expression analysis, and chromosomal mapping of GTPBP2, a novel member of the G protein family. Gene 256: 51-58.
6. Senju, S., Iyama, K., Kudo, H., Aizawa, S. and Nishimura, Y. 2000. Immunocytochemical analyses and targeted gene disruption of GTPBP1. Mol. Cell. Biol. 20: 6195-6200.

CHROMOSOMAL LOCATION

Genetic locus: Gtpbp1 (mouse) mapping to 15 E1.

PRODUCT

GTPBP1 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 GTPBP1 shRNA Plasmid (m): sc-145825-SH and GTPBP1 shRNA (m) Lentiviral Particles: sc-145825-V as alternate gene silencing products.

For independent verification of GTPBP1 (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-145825A, sc-145825B and sc-145825C.

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

GTPBP1 siRNA (m) is recommended for the inhibition of GTPBP1 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.

GENE EXPRESSION MONITORING

GTPBP1 (TR-L4): sc-134354 is recommended as a control antibody for monitoring of GTPBP1 gene expression knockdown by Western Blotting (starting dilution 1:200, dilution range 1:100-1:1000) or immunofluorescence (starting dilution 1:50, dilution range 1:50-1:500).

To ensure optimal results, the following support reagents are recommended: 1) Western Blotting: use m-IgGκ BP-HRP: sc-516102 or m-IgGκ BP-HRP (Cruz Marker): sc-516102-CM (dilution range: 1:1000-1:10000), Cruz Marker™ Molecular Weight Standards: sc-2035, UltraCruz® Blocking Reagent: sc-516214 and Western Blotting Luminol Reagent: sc-2048. 2) Immunofluorescence: use m-IgGκ BP-FITC: sc-516140 or m-IgGκ BP-PE: sc-516141 (dilution range: 1:50-1:200) with UltraCruz® Mounting Medium: sc-24941 or UltraCruz® Hard-set Mounting Medium: sc-359850.

RT-PCR REAGENTS

Semi-quantitative RT-PCR may be performed to monitor GTPBP1 gene expression knockdown using RT-PCR Primer: GTPBP1 (m)-PR: sc-145825-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.