SANTA CRUZ BIOTECHNOLOGY, INC.

GBP2 siRNA (h): sc-106877

BACKGROUND

Guanylate-binding proteins, GBP1 and GBP2 are GTP-binding proteins with a high-turnover GTPase activity and an antiviral effect. GBP1 mediates an antiviral effect against vesicular stomatitis virus and encephalomyocarditis virus and plays a role in the IFN-mediated antiviral response against these viruses. GBP1 and GBP2 belong to a group of large GTP-binding proteins with a high concentration-dependent GTPase activity that have the common ability to undergo oligomerization. GBP1 and GBP2 are bone marrow-derived GTPases encoded by interferon-activated genes and are inducible following IFN treatment. Specifically, GBP1 is expressed in cultured mammary epithelial tumor cell lines after treatment with IFN-γ and LPS.

REFERENCES

1. Praefcke, G.J., et al. 1999. Nucleotide-binding characteristics of human guanylate-binding protein 1 (hGBP1) and identification of the third GTP-binding motif. J. Mol. Biol. 292: 321-332.
2. Anderson, S.L., et al. 1999. Genomic organization and chromosomal localization of a new member of the murine interferon-induced guanylate-binding protein family. J. Interferon Cytokine Res. 19: 487-494.
3. Anderson, S.L., et al. 1999. Interferon-induced guanylate binding protein-1 (GBP-1) mediates an antiviral effect against vesicular stomatitis virus and encephalomyocarditis virus. Virology 256: 8-14.
4. Sun, H., et al. 1999. Interleukin-10 gene transfer activates interferon-γ and the interferon-γ-inducible genes Gbp-1/Mag-1 and Mig-1 in mammary tumors. Int. J. Cancer 80: 624-629.

CHROMOSOMAL LOCATION

Genetic locus: GBP2 (human) mapping to 1p22.2.

PRODUCT

GBP2 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 GBP2 shRNA Plasmid (h): sc-106877-SH and GBP2 shRNA (h) Lentiviral Particles: sc-106877-V as alternate gene silencing products.

For independent verification of GBP2 (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-106877A, sc-106877B and sc-106877C.

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

GBP2 siRNA (h) is recommended for the inhibition of GBP2 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.

GENE EXPRESSION MONITORING

GBP2 (G-9): sc-271568 is recommended as a control antibody for monitoring of GBP2 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 GBP2 gene expression knockdown using RT-PCR Primer: GBP2 (h)-PR: sc-106877-PR (20 µl, 546 bp). Annealing temperature for the primers should be 55-60° C and the extension temperature should be 68-72° C.

SELECT PRODUCT CITATIONS

1. Yu, S., et al. 2020. GBP2 enhances glioblastoma invasion through Stat3/fibronectin pathway. Oncogene 39: 5042-5055.

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.