

GBP3 siRNA (h): sc-105389

BACKGROUND

GBP3 (guanylate binding protein 3) is a 595 amino acid multi-pass membrane protein that belongs to the guanylate-binding protein (GBP) family and is able to bind GTP, GDP and GMP. The gene encoding GBP3 maps to human chromosome 1, which spans 260 million base pairs, contains over 3,000 genes and comprises nearly 8% of the human genome. Chromosome 1 houses a large number of disease-associated genes, including those that are involved in familial adenomatous polyposis, Stickler syndrome, Parkinson's disease, Gaucher disease, schizophrenia and Usher syndrome. Aberrations in chromosome 1 are found in a variety of cancers, including head and neck cancer, malignant melanoma and multiple myeloma.

REFERENCES

1. Strehlow, I., et al. 1994. The interferon-inducible GBP1 gene: structure and mapping to human chromosome 1. *Gene* 144: 295-299.
2. Han, B.H., et al. 1998. Cloning, expression, and characterization of a novel guanylate-binding protein, GBP3 in murine erythroid progenitor cells. *Biochim. Biophys. Acta* 1384: 373-386.
3. Luan, Z., et al. 2002. A novel GTP-binding protein hGBP3 interacts with NIK/HGK. *FEBS Lett.* 530: 233-238.
4. Olszewski, M.A., et al. 2006. In silico genomic analysis of the human and murine guanylate-binding protein (GBP) gene clusters. *J. Interferon Cytokine Res.* 26: 328-352.
5. Tripal, P., et al. 2007. Unique features of different members of the human guanylate-binding protein family. *J. Interferon Cytokine Res.* 27: 44-52.

CHROMOSOMAL LOCATION

Genetic locus: GBP3 (human) mapping to 1p22.2.

PRODUCT

GBP3 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 μ M solution once resuspended using protocol below. Suitable for 50-100 transfections. Also see GBP3 shRNA Plasmid (h): sc-105389-SH and GBP3 shRNA (h) Lentiviral Particles: sc-105389-V as alternate gene silencing products.

For independent verification of GBP3 (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-105389A, sc-105389B and sc-105389C.

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 μ l of the RNase-free water provided. Resuspension of the siRNA duplex in 330 μ l of RNase-free water makes a 10 μ M solution in a 10 μ M Tris-HCl, pH 8.0, 20 mM NaCl, 1 mM EDTA buffered solution.

APPLICATIONS

GBP3 siRNA (h) is recommended for the inhibition of GBP3 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 μ M in 66 μ l. 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

GBP1-5 (G-12): sc-166960 is recommended as a control antibody for monitoring of GBP3 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-IgG κ BP-HRP: sc-516102 or m-IgG κ 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-IgG κ BP-FITC: sc-516140 or m-IgG κ 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 GBP3 gene expression knockdown using RT-PCR Primer: GBP3 (h)-PR: sc-105389-PR (20 μ l, 395 bp). Annealing temperature for the primers should be 55-60° C and the extension temperature should be 68-72° C.

SELECT PRODUCT CITATIONS

1. Nordmann, A., et al. 2012. A new splice variant of the human guanylate-binding protein 3 mediates anti-influenza activity through inhibition of viral transcription and replication. *FASEB J.* 26: 1290-1300.

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.