SANTA CRUZ BIOTECHNOLOGY, INC.

PGM 2 siRNA (m): sc-108051

BACKGROUND

Phosphoglucomutase (PGM), which belongs to the hexose-phosphate mutase family, plays an essential role in glycogen catabolism (glycogenolysis) as well as in the process of glycogen synthesis (glycogenesis). During glycogenolysis, PGM converts glucose-1-phosphate (Glc-1-P) to glucose-6-phosphate (Glc-6-P), thus promoting glycolysis and the pentose phosphate pathway. During glycogenesis, PGM functions in the opposite manner, converting glucose-6-phosphate into glucose-1-phosphate, to facilitate glycogen synthesis. PGM has five structural loci: PGM 1, PGM 2, PGM 3, PGM 4 and Aciculin. These five genetic forms of PGM differ in amino acid sequences but catalyze the same reactions, therefore indicating that they are isozymes. PGM 2, a 612 amino acid protein, is expressed in lung, spleen and thymus, and localizes to the cytoplasm. It has been suggested that PGM 2 may play a role in congenital immunodeficiencies.

REFERENCES

1. Takahashi, N., et al. 1983. A phylogeny for the principal alleles of the human phosphoglucomutase-1 locus. Proc. Natl. Acad. Sci. USA 79: 6636-6640.
2. Takahashi, N. and Neel, J.V. 1993. Intragenic recombination at the human phosphoglucomutase 1 locus: predictions fulfilled. Proc. Natl. Acad. Sci. USA 90: 10725-10729.
3. Yip, S.P., et al. 2000. Mapping recombination hotspots in human phosphoglucomutase (PGM 1). Hum. Mol. Genet. 8: 1699-1706.
4. Bro, C., et al. 2005. Improveme of phosphoglucomutase: example of transcript analysis as a tool in inverse metabolic engineering. Appl. Environ. Microbiol. 71: 6465-6472.
5. Buchanan, J.T., et al. 2005. Streptococcus iniae phosphoglucomutase is a virulence factor and a target for vaccine development. Infect. Immun. 73: 6935-6944.
6. McCarthy, T.R., et al. 2005. Overexpression of *Mycobacterium tuberculosis* manB, a phosphomannomutase that increases phosphatidylinositol mannoside biosynthesis in *Mycobacterium smegmatis* and mycobacterial association with human macrophages. Mol. Microbiol. 58: 774-790.

CHROMOSOMAL LOCATION

Genetic locus: Pgm2 (mouse) mapping to 4 C6.

PRODUCT

PGM 2 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 PGM 2 shRNA Plasmid (m): sc-108051-SH and PGM 2 shRNA (m) Lentiviral Particles: sc-108051-V as alternate gene silencing products.

For independent verification of PGM 2 (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-108051A, sc-108051B and sc-108051C.

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

PGM 2 siRNA (m) is recommended for the inhibition of PGM 2 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

PGM 2 (F-12): sc-376718 is recommended as a control antibody for monitoring of PGM 2 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 PGM 2 gene expression knockdown using RT-PCR Primer: PGM 2 (m)-PR: sc-108051-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.