SANTA CRUZ BIOTECHNOLOGY, INC.

PGM 2L1 siRNA (h): sc-96893

BACKGROUND

PGM 2L1 (phosphoglucomutase 2-like 1), also known as glucose 1,6-bisphosphate synthase, PMMLP or BM32A, is a 622 amino acid cytosolic protein that belongs to the phosphohexose mutase family. Encoded by a gene that maps to human chromosome 11q13.4, PGM 2L1 is ubiquitously expressed and shares 60% amino acid sequence identity with PGM 2. Both PGM 2 and PGM 2L1 likely emerged through an ancient duplication prior to the most recent common ancestor of tetrapods and bony fishes. However, chicken lacks PGM 2L1, supporting loss of this ancient gene singularly in chicken. PGM 2L1 is mainly expressed in brain, but is also expressed in testis, thymus, spleen, lung and skeletal muscle. PGM 2L1 is largely responsible for the synthesis of elevated Glc-1,6-P(2) concentrations in brain.

REFERENCES

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2. Shin, J.H., et al. 2006. Large-scale identification of cytosolic mouse brain proteins by chromatographic prefractionation. Electrophoresis 27: 2799-2813.
3. Nair, S., et al. 2006. Pharmacogenomics of phenolic antioxidant butylated hydroxyanisole (BHA) in the small intestine and liver of Nrf2 knockout and C57BL/6J mice. Pharm. Res. 23: 2621-2637.
4. Maliekal, P., et al. 2007. Molecular identification of mammalian phosphopentomutase and glucose-1,6-bisphosphate synthase, two members of the α-D-phosphohexomutase family. J. Biol. Chem. 282: 31844-31851.
5. Veiga-da-Cunha, M., et al. 2008. Mammalian phosphomannomutase PMM1 is the brain IMP-sensitive glucose-1,6-bisphosphatase. J. Biol. Chem. 283: 33988-33993.
6. Hughes, A.L. and Friedman, R. 2008. Genome size reduction in the chicken has involved massive loss of ancestral protein-coding genes. Mol. Biol. Evol. 25: 2681-2688.
7. Nielsen, O.H., et al. 2009. Influence of smoking on colonic gene expression profile in Crohn's disease. PLoS ONE 4: e6210.

CHROMOSOMAL LOCATION

Genetic locus: PGM2L1 (human) mapping to 11q13.4.

PRODUCT

PGM 2L1 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 PGM 2L1 shRNA Plasmid (h): sc-96893-SH and PGM 2L1 shRNA (h) Lentiviral Particles: sc-96893-V as alternate gene silencing products.

For independent verification of PGM 2L1 (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-96893A, sc-96893B and sc-96893C.

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 2L1 siRNA (h) is recommended for the inhibition of PGM 2L1 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

PGM 2L1 (A-6): sc-390767 is recommended as a control antibody for monitoring of PGM 2L1 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 2L1 gene expression knockdown using RT-PCR Primer: PGM 2L1 (h)-PR: sc-96893-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.