

PGE synthase 2 siRNA (m): sc-152189

BACKGROUND

PGE synthase 2, also known as PTGES2, PGES2, prostaglandin E synthase 2, microsomal prostaglandin E synthase 2 (mPGES-2) or GATE-binding factor-1 (GBF1), is a 377 amino acid isomerase that belongs to the GST superfamily and catalyzes the conversion of prostaglandin H₂ to prostaglandin E₂. Synthesized as a single-pass membrane protein of the Golgi apparatus, PGE synthase 2 becomes cleaved to form a soluble truncated form which is enriched in the perinuclear region. Overexpressed in colorectal cancer, PGE synthase 2 is widely expressed with high levels found in liver, kidney, heart and brain, and may activate IFN- γ transcriptional activity. Containing a glutaredoxin domain and a GST C-terminal domain, PGE synthase 2 exists as a homodimer that interacts with both EXOSC10 and C/EBP β , and is known to bind dihydrolipoic acid as a cofactor.

REFERENCES

1. Tanikawa, N., et al. 2002. Identification and characterization of a novel type of membrane-associated prostaglandin E synthase. *Biochem. Biophys. Res. Commun.* 291: 884-889.
2. Hu, J., et al. 2002. A novel transactivating factor that regulates interferon- γ -dependent gene expression. *J. Biol. Chem.* 277: 30253-30263.
3. Murakami, M., et al. 2003. Cellular prostaglandin E₂ production by membrane-bound prostaglandin E synthase-2 via both cyclooxygenases-1 and -2. *J. Biol. Chem.* 278: 37937-37947.
4. Nitz, I., et al. 2007. Association of prostaglandin E synthase 2 (PTGES2) Arg298His polymorphism with type 2 diabetes in two German study populations. *J. Clin. Endocrinol. Metab.* 92: 3183-3188.
5. Lindner, I., et al. 2007. Prostaglandin E synthase 2 (PTGES2) Arg298His polymorphism and parameters of the metabolic syndrome. *Mol. Nutr. Food Res.* 51: 1447-1451.
6. Online Mendelian Inheritance in Man, OMIM[™]. 2008. Johns Hopkins University, Baltimore, MD. MIM Number: 608152. World Wide Web URL: <http://www.ncbi.nlm.nih.gov/omim/>

CHROMOSOMAL LOCATION

Genetic locus: Ptges2 (mouse) mapping to 2 B.

PRODUCT

PGE synthase 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 μ M solution once resuspended using protocol below. Suitable for 50-100 transfections. Also see PGE synthase 2 shRNA Plasmid (m): sc-152189-SH and PGE synthase 2 shRNA (m) Lentiviral Particles: sc-152189-V as alternate gene silencing products.

For independent verification of PGE synthase 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-152189A, sc-152189B and sc-152189C.

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

PGE synthase 2 siRNA (m) is recommended for the inhibition of PGE synthase 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 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

PGE synthase 2 (A-2): sc-514224 is recommended as a control antibody for monitoring of PGE synthase 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-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 PGE synthase 2 gene expression knockdown using RT-PCR Primer: PGE synthase 2 (m)-PR: sc-152189-PR (20 μ l). 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.