SANTA CRUZ BIOTECHNOLOGY, INC.

PGI2 synthase siRNA (h): sc-37236

BACKGROUND

Prostacyclin (also known as prostaglandin I2) is a potent vasodilator and inhibitor of platelet aggregation. The enzyme PGI2 synthase (also known as prostacyclin synthase) catalyzes the isomerization of prostaglandin H2 (PGH2) to prostacyclin. Although it has absorbance spectral features characteristic of the cytochrome P450s, PGI2 has no monooxygenase activity and does not require an external source of electrons to initiate its enzyme reaction. PGI2 synthase is the single member of family 8 of the cytochrome P450 superfamily. PGI2 synthase is a polypeptide of 500 amino acids with sequence homology to cholesterol 7-α-monooxygenase, a member of the CYP7 family of cytochrome P450s. The gene which encodes PGI2 synthase maps to human chromosome 20q13.13.

REFERENCES

1. Miyata, A., et al. 1994. Molecular cloning and expression of human prostacyclin synthase. Biochem. Biophys. Res. Commun. 200: 1728-1734.
2. Wang, L.H. and Chen, L. 1996. Organization of the gene encoding human prostacyclin synthase. Biochem. Biophys. Res. Commun. 226: 631-637.
3. Nelson, D.R., et al. 1996. P450 superfamily: update on new sequences, gene mapping, accession numbers and nomenclature. Pharmacogenetics 6: 1-42.
4. Yokoyama, C., et al. 1996. Human gene encoding prostacyclin synthase (PTGIS): genomic organization, chromosomal localization, and promoter activity. Genomics 36: 296-304.
5. LocusLink Report (LocusID: 601699). http://www.ncbi.nlm.nih.gov/LocusLink/

CHROMOSOMAL LOCATION

Genetic locus: PTGIS (human) mapping to 20q13.13.

PRODUCT

PGI2 synthase 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 PGI2 synthase shRNA Plasmid (h): sc-37236-SH and PGI2 synthase shRNA (h) Lentiviral Particles: sc-37236-V as alternate gene silencing products.

For independent verification of PGI2 synthase (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-37236A, sc-37236B and sc-37236C.

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

PGI2 synthase siRNA (h) is recommended for the inhibition of PGI2 synthase 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

PGI2 synthase (3B11): sc-293247 is recommended as a control antibody for monitoring of PGI2 synthase 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 PGI2 synthase gene expression knockdown using RT-PCR Primer: PGI2 synthase (h)-PR: sc-37236-PR (20 µl, 494 bp). Annealing temperature for the primers should be 55-60° C and the extension temperature should be 68-72° C.

SELECT PRODUCT CITATIONS

1. He, T., et al. 2008. Angiogenic function of prostacyclin biosynthesis in human endothelial progenitor cells. Circ. Res. 103: 80-88.

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.