SANTA CRUZ BIOTECHNOLOGY, INC.

PGDH siRNA (m): sc-61331

BACKGROUND

Prostaglandins are implicated in many physiologic and cellular processes, such as inflammation. NAD^+-dependent 15-hydroxyprostaglandin dehydrogenase (PGDH) is the fundamental enzyme of prostaglandin degradation. PGDH, a ubiquitous enzyme, strongly reduces the biologic activity of these molecules by catalyzing the oxidation of the 15-hydroxyl group of prostaglandins to a keto group. Cortisol reduces PGDH activity in human placental cells. 11-β-hydroxysteroid dehydrogenase type II (HSD11B2) converts cortisol to cortisone. In preeclampsia, a disorder characterized by high blood pressure and protein in the urine during pregnancy and the postpartum period, HSD11B2 mRNA expression is reduced, leading to a decrease in HSD11B2 activity. Therefore, the diminished conversion of placental cortisol may lead to reduced PGDH mRNA expression by means of an autocrine or paracrine mechanism.

REFERENCES

1. Han, X., et al. 1995. Localisation of 15-hydroxyprostaglandin dehydrogenase (PGDH) and steroidogenic enzymes in the equine placenta. Equine Vet. J. 27: 334-339.
2. Van Meir, C.A., et al. 1996. Immunoreactive 15-hydroxyprostaglandin dehydrogenase (PGDH) is reduced in fetal membranes from patients at preterm delivery in the presence of infection. Placenta 17: 291-297.
3. Gee, J.R., et al. 2003. Cytokeratin 20, AN43, PGDH and Cox-2 expression in transitional and squamous cell carcinoma of the bladder. Urol. Oncol. 21: 266-270.
4. Johnson, R.F., et al. 2004. Regulation of 15-hydroxyprostaglandin dehydrogenase (PGDH) gene activity, messenger ribonucleic acid processing and protein abundance in the human chorion in late gestation and labor. J. Clin. Endocrinol. Metab. 89: 5639-5648.
5. Yan, M., et al. 2004. 15-hydroxyprostaglandin dehydrogenase, a Cox-2 oncogene antagonist, is a TGFβ-induced suppressor of human gastrointestinal cancers. Proc. Natl. Acad. Sci. USA 101: 17468-17473.
6. Cho, H., et al. 2005. Key NAD^+-binding residues in human 15-hydroxyprostaglandin dehydrogenase. Arch. Biochem. Biophys. 433: 447-453.

CHROMOSOMAL LOCATION

Genetic locus: Hpgd (mouse) mapping to 8 B2.

PRODUCT

PGDH 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 PGDH shRNA Plasmid (m): sc-61331-SH and PGDH shRNA (m) Lentiviral Particles: sc-61331-V as alternate gene silencing products.

For independent verification of PGDH (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-61331A, sc-61331B and sc-61331C.

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

PGDH siRNA (m) is recommended for the inhibition of PGDH 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

PGDH (H-3): sc-271418 is recommended as a control antibody for monitoring of PGDH 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 PGDH gene expression knockdown using RT-PCR Primer: PGDH (m)-PR: sc-61331-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.