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# PGF2 $\alpha$ R siRNA (h): sc-44987

## BACKGROUND

Prostaglandin receptors are integral membrane proteins that bind prostaglandins with high affinity. This triggers changes in the cell which influence cell behavior. Prostaglandin receptor subtypes are named according to their relative affinities for the endogenous prostaglandins. These include prostaglandin D2 (DP receptors), prostaglandin E2 (EP1, EP2 and EP3 receptors), prostaglandin F2 $\alpha$  (FP receptors) and prostacyclin (IP receptors). Prostaglandin F2 $\alpha$  receptor (PGF2 $\alpha$ R), also designated prostanoid FP receptor, is an integral membrane protein. It acts as a receptor for prostaglandin F2 $\alpha$ . The activity of PGF2 $\alpha$ R is mediated by G proteins that activate the phosphatidylinositol-calcium second messenger system. In the corpus luteum, PGF2 $\alpha$ R is involved in luteolysis initiation.

## REFERENCES

1. Abramovitz, M., et al. 1994. Cloning and expression of a cDNA for the human prostanoid FP receptor. *J. Biol. Chem.* 269: 2632-2636.
2. Sales, K.J., et al. 2005. A novel angiogenic role for prostaglandin F2 $\alpha$ -FP receptor interaction in human endometrial adenocarcinomas. *Cancer Res.* 65: 7707-7716.
3. Yamaji, K., et al. 2005. Prostaglandins E1 and E2, but not F2 $\alpha$  or latanoprost, inhibit monkey ciliary muscle contraction. *Curr. Eye Res.* 30: 661-665.
4. Camargo, P.M., et al. 2005. Prostaglandins E2 and F2 $\alpha$  enhance differentiation of cementoblastic cells. *J. Periodontol.* 76: 303-309.
5. Duras, M., et al. 2005. Non-genomic effect of steroids on oxytocin-stimulated intracellular mobilization of calcium and on prostaglandin F2 $\alpha$  and E2 secretion from bovine endometrial cells. *Prostaglandins Other Lipid Mediat.* 76: 105-116.
6. Bishop, C.V. and Stormshak, F. 2005. Nongenomic action of progesterone inhibits oxytocin-induced phosphoinositide hydrolysis and prostaglandin F2 $\alpha$  secretion in the ovine endometrium. *Endocrinology* 147: 937-942.
7. SWISS-PROT/TrEMBL (P43088). World Wide Web URL: <http://www.expasy.ch/sprot/sprot-top.html>.

## CHROMOSOMAL LOCATION

Genetic locus: PTGFR (human) mapping to 1p31.1.

## PRODUCT

PGF2 $\alpha$ R 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  $\mu$ M solution once resuspended using protocol below. Suitable for 50-100 transfections. Also see PGF2 $\alpha$ R shRNA Plasmid (h): sc-44987-SH and PGF2 $\alpha$ R shRNA (h) Lentiviral Particles: sc-44987-V as alternate gene silencing products.

For independent verification of PGF2 $\alpha$ R (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-44987A, sc-44987B and sc-44987C.

## RESEARCH USE

For research use only, not for use in diagnostic procedures.

## STORAGE AND RESUSPENSION

Store lyophilized siRNA duplex at -20 $^{\circ}$  C with desiccant. Stable for at least one year from the date of shipment. Once resuspended, store at -20 $^{\circ}$  C, avoid contact with RNAses and repeated freeze thaw cycles.

Resuspend lyophilized siRNA duplex in 330  $\mu$ l of the RNase-free water provided. Resuspension of the siRNA duplex in 330  $\mu$ l of RNase-free water makes a 10  $\mu$ M solution in a 10  $\mu$ M Tris-HCl, pH 8.0, 20 mM NaCl, 1 mM EDTA buffered solution.

## APPLICATIONS

PGF2 $\alpha$ R siRNA (h) is recommended for the inhibition of PGF2 $\alpha$ R 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  $\mu$ M in 66  $\mu$ 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.

## RT-PCR REAGENTS

Semi-quantitative RT-PCR may be performed to monitor PGF2 $\alpha$ R gene expression knockdown using RT-PCR Primer: PGF2 $\alpha$ R (h)-PR: sc-44987-PR (20  $\mu$ l). Annealing temperature for the primers should be 55-60 $^{\circ}$  C and the extension temperature should be 68-72 $^{\circ}$  C.

## SELECT PRODUCT CITATIONS

1. Xu, C., et al. 2015. PGF2 $\alpha$  modulates the output of chemokines and pro-inflammatory cytokines in myometrial cells from term pregnant women through divergent signaling pathways. *Mol. Hum. Reprod.* 21: 603-614.

## PROTOCOLS

See our web site at [www.scbt.com](http://www.scbt.com) for detailed protocols and support products.