SANTA CRUZ BIOTECHNOLOGY, INC.

# PTH2 Receptor siRNA (m): sc-40157

## BACKGROUND

Parathyroid hormone (PTH) and parathyroid hormone-related peptide (PTHrP) regulate calcium, phosphate and hydrogen ions in the kidney. In addition, PTHrP is also expressed in a variety of tissues, where it acts as an autocrine/paracrine factor to influenceskeletal and cartilage development. Both ligands preferentially bind to the type 1 PTH/PTHrP receptor (PTH1R), whereas the type 2 PTH receptor (PTH2 receptor or PTH2R) binds only PTH, but not PTHrP. The PTH2 receptor also binds to tuberoinfundibular peptide of 39 residues (TIP39), which shares limited homology with PTH and may, subsequently, activate the PTH2 receptor through alternative methods. Both PTH receptors are members of the glucagon/secretin/calcitonin subfamily of G protein-coupled receptors (GPCRs), and are characterized as seven transmembrane receptors that recruit G proteins and signal through intracellular adenyl cyclase/cAMP pathways. The PTH2 receptor is highly expressed in brain and pancreas, with lower expression in testis, and is thought to play a role in the regulation of several physiological systems, including pituitary hormone secretion and pain perception.

## REFERENCES


1. Bruns, M.E., et al. 1995. Expression of parathyroid hormone-related peptide and its receptor messenger ribonucleic acid in human amnion and chorion-decidua: implications for secretion and function. Am. J. Obstet. Gynecol. 173: 739-746.
2. Usdin, T.B., et al. 1996. Distribution of parathyroid hormone-2 receptor messenger ribonucleic acid in rat. Endocrinology 137: 4285-4297.
3. Iezzoni, J.C., et al. 1998. Coexpression of parathyroid hormone-related protein and its receptor in breast carcinoma: a potential autocrine effector system. Mod. Pathol. 11: 265-270.
4. Takasu, H., et al. 1999. Dual signaling and ligand selectivity of the human PTH/PTHrP receptor. J. Bone Miner. Res. 14: 11-20.
5. Huang, Z., et al. 1999. Role of signal transduction in internalization of the G protein-coupled receptor for parathyroid hormone (PTH) and PTH-related protein. Endocrinology 140: 1294-1300.
6. Usdin, T.B., et al. 2000. New members of the parathyroid hormone/parathyroid hormone receptor family: the parathyroid hormone 2 receptor and tuberoinfundibular peptide of 39 residues. Front. Neuroendocrinol. 21: 349-383.
7. Piserchio, A., et al. 2000. Structure of tuberoinfundibular peptide of 39 residues. J. Biol. Chem. 275: 27284-27290.
8. Wang, T., et al. 2000. Distribution of parathyroid hormone-2 receptor-like immunoreactivity and messenger RNA in the rat nervous system. Neuroscience 100: 629-649.


## CHROMOSOMAL LOCATION

Genetic locus: Pth2r (mouse) mapping to 1 C2.

## PROTOCOLS

See our web site at www.scbt.com for detailed protocols and support products.

## PRODUCT

PTH2 Receptor 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 PTH2 Receptor shRNA Plasmid (m): sc-40157-SH and PTH2 Receptor shRNA (m) Lentiviral Particles: sc-40157-V as alternate gene silencing products.

For independent verification of PTH2 Receptor (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-40157A, sc-40157B and sc-40157C.

## 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

PTH2 Receptor siRNA (m) is recommended for the inhibition of PTH2 Receptor 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.

## RT-PCR REAGENTS

Semi-quantitative RT-PCR may be performed to monitor PTH2 Receptor gene expression knockdown using RT-PCR Primer: PTH2 Receptor (m)-PR: sc-40157-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.