SANTA CRUZ BIOTECHNOLOGY, INC.

PTH/PTHrP-R (E-17): sc-12777

SANTA CRUZ BIOTECHNOLOGY

The Power to Question

BACKGROUND

Parathyroid hormone (PTH), which is also designated parathyrin, is an 84 amino acid single chain peptide that functions to regulate calcium metabolism by raising blood levels of calcium through various mechanisms. PTH stimulates bone formation to increase bone mass and strength in rats and humans. Within the PTH molecule, the essential activity is associated with the first 34 amino acids at the amino-terminus of the molecule. The gene encoding PTH maps to human chromosome 11p15.3-p15.1. Parathyroid hormone-related protein (PTHrP) is an autocrine factor that is structurally related to PTH yet, unlike PTH, which is synthesized only by the parathyroid cells, PTHrP is synthesized by several cell types. PTHrP regulates endochondral bone development and epithelial-mesenchymal interactions during the formation of the mammary glands and teeth. Isolated from the culture medium of a human lung cancer cell line, PTHrP produces PTH-like effects that are characterized as humoral hypercalcemia of malignancy. PTH and PTHrP are both regulated by vitamin D and steroid hormones and preferentially bind to specific PTH/PTHrP receptors, then activate adenylate cyclase or PLC β via PKC activation.

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. 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.
3. 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.
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. Mannstadt, M., et al. 1999. Receptors for PTH and PTHrP: their biological importance and functional properties. Am. J. Physiol. 277: 665-675.

SOURCE

PTH/PTHrP-R (E-17) is an affinity purified goat polyclonal antibody raised against a peptide mapping near the N-terminus of PTH/PTHrP-R of human origin.

PRODUCT

Each vial contains 200 µg IgG in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

Blocking peptide available for competition studies, sc-12777 P, (100 µg peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% BSA).

STORAGE

Store at 4° C, **DO NOT FREEZE**. Stable for one year from the date of shipment. Non-hazardous. No MSDS required.

APPLICATIONS

PTH/PTHrP-R (E-17) is recommended for detection of PTH/PTHrP receptor of human origin by Western Blotting (starting dilution 1:200, dilution range 1:100-1:1000), immunofluorescence (starting dilution 1:50, dilution range 1:50-1:500) and solid phase ELISA (starting dilution 1:30, dilution range 1:30-1:3000).

PTH/PTHrP-R (E-17) is also recommended for detection of PTH/PTHrP receptor in additional species, including canine, bovine and porcine.

Suitable for use as control antibody for PTH/PTHrP-R siRNA (h): sc-36327, PTH/PTHrP-R shRNA Plasmid (h): sc-36327-SH and PTH/PTHrP-R shRNA (h) Lentiviral Particles: sc-36327-V.

Molecular Weight of PTH/PTHrP-R: 80 kDa.

Positive Controls: Caki-1 cell lysate: sc-2224 or Saos-2 cell lysate: sc-2235.

RECOMMENDED SECONDARY REAGENTS

To ensure optimal results, the following support (secondary) reagents are recommended: 1) Western Blotting: use donkey anti-goat IgG-HRP: sc-2020 (dilution range: 1:2000-1:100,000) or Cruz Marker™ compatible donkey anti-goat IgG-HRP: sc-2033 (dilution range: 1:2000-1:5000), Cruz Marker™ Molecular Weight Standards: sc-2035, TBS Blotto A Blocking Reagent: sc-2333 and Western Blotting Luminol Reagent: sc-2048. 2) Immunofluorescence: use donkey anti-goat IgG-FITC: sc-2024 (dilution range: 1:100-1:400) or donkey anti-goat IgG-TR: sc-2783 (dilution range: 1:100-1:400) with UltraCruz™ Mounting Medium: sc-24941.

SELECT PRODUCT CITATIONS

1. Yoshizaki, A., et al. 2004. Expressions of parathyroid hormone-related protein (PTHrP) and PTH/PTHrP-receptor (PTH/PTHrP-R) in gastrointestinal stromal tumours (GISTs), leiomyomas and schwannomas. Scand. J. Gastroenterol. 39: 133-137.
2. Monaghan, P., et al. 2008. Mapping peptide hormone-receptor interactions using a disulfide-trapping approach. Biochemistry 47: 5889-5895.
3. Tryfonidou, M.A., et al. 2010. Intraspecies disparity in growth rate is associated with differences in expression of local growth plate regulators. Am. J. Physiol. Endocrinol. Metab. 299: E1044-E1052.

RESEARCH USE

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

PROTOCOLS

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