

PTH/PTHrP-R (K-15): sc-12778

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 (PTH-rP) is an autocrine factor that is structurally related to PTH yet, unlike PTH, which is synthesized only by the parathyroid cells, PTH-rP is synthesized by several cell types. PTH-rP 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, PTH-rP produces PTH-like effects that are characterized as humoral hypercalcemia of malignancy. PTH and PTH-rP are both regulated by vitamin D and steroid hormones and preferentially bind to specific PTH/PTH-rP 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. Takasu, H., et al. 1999. Dual signaling and ligand selectivity of the human PTH/PTHrP receptor. *J. Bone Miner. Res.* 14: 11-20.
4. 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.
5. Mannstadt, M., et al. 1999. Receptors for PTH and PTHrP: their biological importance and functional properties. *Am. J. Physiol.* 277: 665-675.

CHROMOSOMAL LOCATION

Genetic locus: PTHR1 (human) mapping to 3p21.31; Pthr1 (mouse) mapping to 9 F2.

SOURCE

PTH/PTHrP-R (K-15) is an affinity purified goat polyclonal antibody raised against a peptide mapping near the C-terminus of PTH/PTHrP-R of human origin.

PRODUCT

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

Blocking peptide available for competition studies, sc-12778 P, (100 μ g peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% BSA).

APPLICATIONS

PTH/PTHrP-R (K-15) is recommended for detection of PTH/PTHrP receptor of mouse, rat and 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 (K-15) is also recommended for detection of PTH/PTHrP receptor in additional species, including equine, canine, bovine and porcine.

Suitable for use as control antibody for PTH/PTHrP-R siRNA (h): sc-36327, PTH/PTHrP-R siRNA (m): sc-40158, PTH/PTHrP-R shRNA Plasmid (h): sc-36327-SH, PTH/PTHrP-R shRNA Plasmid (m): sc-40158-SH, PTH/PTHrP-R shRNA (h) Lentiviral Particles: sc-36327-V and PTH/PTHrP-R shRNA (m) Lentiviral Particles: sc-40158-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. Pickard, B.W., et al. 2007. Type 1 parathyroid hormone receptor (PTH1R) nuclear trafficking: regulation of PTH1R nuclear-cytoplasmic shuttling by importin α/β and chromosomal region maintenance 1/exportin 1. *Endocrinology* 148: 2282-2289.

STORAGE

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

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.



Try **PTH/PTHrP-R (3D1.1): sc-12722**, our highly recommended monoclonal alternative to PTH/PTHrP-R (K-15). Also, for AC, HRP, FITC, PE, Alexa Fluor® 488 and Alexa Fluor® 647 conjugates, see **PTH/PTHrP-R (3D1.1): sc-12722**.