

# PTH (BGN/1F8): sc-80924

## 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 11p15.2. 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. The gene encoding PTH-rP maps to human chromosome 12p12.1-p11.2. Both PTH and PTH-rP are regulated by vitamin D and steroid hormones, and both preferentially bind to specific PTH/PTH-rP receptors, then activate adenylate cyclase or PLC  $\beta$  via PKC activation.

## REFERENCES

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2. Brewer, H.B., et al. 1972. Human parathyroid hormone: amino acid sequence of the amino-terminal residues 1-34. *Proc. Natl. Acad. Sci. USA* 69: 3585-3588.
3. Suva, L.J., et al. 1987. A parathyroid hormone-related protein implicated in malignant hypercalcemia: cloning and expression. *Science* 237: 893-896.
4. Horiuchi, N., et al. 1987. Similarity of synthetic peptide from human tumor to parathyroid hormone *in vivo* and *in vitro*. *Science* 238: 1566-1568.
5. Mangin, M., et al. 1988. Identification of a cDNA encoding a parathyroid hormone-like peptide from a human tumor associated with humoral hypercalcemia of malignancy. *Proc. Natl. Acad. Sci. USA* 85: 597-601.
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7. Watson, P.H. and Hanley, D.A. 1993. Parathyroid hormone: regulation of synthesis and secretion. *Clin. Invest. Med.* 16: 58-77.
8. Lanske, B., et al. 1996. PTH/PTHrP receptor in early development and Indian hedgehog-regulated bone growth. *Science* 273: 663-666.
9. Rankin, W., et al. 1997. Parathyroid hormone-related protein and hypercalcemia. *Cancer* 80: 1564-1571.

## CHROMOSOMAL LOCATION

Genetic locus: PTH (human) mapping to 11p15.2; Pth (mouse) mapping to 7 F1.

## SOURCE

PTH (BGN/1F8) is a mouse monoclonal antibody raised against amino acids 1-34 of mature PTH of human origin.

## PRODUCT

Each vial contains 100  $\mu$ g IgG<sub>1</sub> in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

## APPLICATIONS

PTH (BGN/1F8) is recommended for detection of PTH of mouse, rat and human origin by immunofluorescence (starting dilution 1:50, dilution range 1:50-1:500) and immunohistochemistry (including paraffin-embedded sections) (starting dilution 1:50, dilution range 1:50-1:500).

Suitable for use as control antibody for PTH siRNA (h): sc-39693, PTH siRNA (m): sc-39694, PTH shRNA Plasmid (h): sc-39693-SH, PTH shRNA Plasmid (m): sc-39694-SH, PTH shRNA (h) Lentiviral Particles: sc-39693-V and PTH shRNA (m) Lentiviral Particles: sc-39694-V.

Molecular Weight of PTH: 9 kDa.

## SELECT PRODUCT CITATIONS

1. Verdelli, C., et al. 2015. Tumour-associated fibroblasts contribute to neoangiogenesis in human parathyroid neoplasia. *Endocr. Relat. Cancer* 22: 87-98.

## 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](http://www.scbt.com) for detailed protocols and support products.



See **PTH/PTHrP-R (3D1.1): sc-12722** for PTH/PTHrP-R antibody conjugates, including AC, HRP, FITC, PE, Alexa Fluor<sup>®</sup> 488 and Alexa Fluor<sup>®</sup> 647.