

PTH (5E745): sc-71944

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. PTH and PTH-rP are both regulated by vitamin D and steroid hormones and preferentially bind to specific PTH/PTH-rP receptors, then activating adenylate cyclase or PLC β via PKC activation.

REFERENCES

- O'Riordan, J.L., et al. 1971. Isolation of human parathyroid hormone. *Endocrinology* 89: 234-239.
- Brewer, H.B., Jr., et al. 1972. Human parathyroid hormone: amino acid sequence of the amino-terminal residues 1-34. *Proc. Natl. Acad. Sci. USA* 69: 3585-3588.
- Suva, L.J., et al. 1987. A parathyroid hormone-related protein implicated in malignant hypercalcemia: cloning and expression. *Science* 237: 893-896.
- 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.
- Tonoki, H., et al. 1991. Regional mapping of the parathyroid hormone gene (PTH) by cytogenetic and molecular studies. *Cytogenet. Cell Genet.* 56: 103-104.
- Watson, P.H. and Hanley, D.A. 1993. Parathyroid hormone: regulation of synthesis and secretion. *Clin. Invest. Med.* 16: 58-77.
- Lanske, B., et al. 1996. PTH/PTHrP receptor in early development and Indian hedgehog-regulated bone growth. *Science* 273: 663-666.

CHROMOSOMAL LOCATION

Genetic locus: PTH (human) mapping to 11p15.2.

SOURCE

PTH (5E745) is a mouse monoclonal antibody raised against amino acids 53-84 of PTH of human origin.

PRODUCT

Each vial contains 100 μ g IgG₁ in 1.0 ml PBS with < 0.1% sodium azide and 0.1% gelatin.

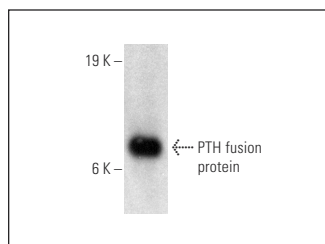
APPLICATIONS

PTH (5E745) is recommended for detection of parathyroid hormone (PTH) peptides (aa 53-68; 53-84; 7-84; and 1-84) of human, bovine and canine origin by Western Blotting (starting dilution 1:200, dilution range 1:100-1:1000), immunoprecipitation [1-2 μ g per 100-500 μ g of total protein (1 ml of cell lysate)], 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); non cross-reactive with synthetic parathyroid hormone peptides (aa 1-10; 1-34; 1-38).

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

Molecular Weight of PTH: 9 kDa.

DATA



PTH (5E745): sc-71944. Western blot analysis of human recombinant PTH fusion protein.

SELECT PRODUCT CITATIONS

- Darby, S., et al. 2020. Primary hyperparathyroidism in a quarter horse mare associated with a chief cell adenoma. *J. Equine Vet. Sci.* 95: 103302.

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 for detailed protocols and support products.

CONJUGATES

See **PTH/PTHrP-R (3D1.1): sc-12722** for PTH/PTHrP-R antibody conjugates, including AC, HRP, FITC, PE, and Alexa Fluor® 488, 546, 594, 647, 680 and 790.