

Product Data Sheet

Cat# SP-50101-1

Description: Parathyroid Hormone (1-34)
human (AA: Ser-Val-Ser-Glu-Ile-Gln-Leu-Met-His-Asn-Leu-Gly-Lys-His-Leu-Asn-Ser-Met-Glu-Arg-Val-Glu-Trp-Leu-Arg-Lys-Lys-Leu-Gln-Asp-Val-His-Asn-Phe) (MW: 4117.8)

Size: 1 mg

Purity: >95%

Store: Desiccated at -20oC.

Parathyroid hormone (PTH), parathormone or parathyrin, is secreted by the chief cells of the parathyroid glands as a polypeptide containing 84 amino acids. It acts to increase the concentration of calcium (Ca²⁺) in the blood, whereas calcitonin (a hormone produced by the parafollicular cells (C cells) of the thyroid gland) acts to decrease calcium concentration. PTH acts to increase the concentration of calcium in the blood by acting upon the parathyroid hormone 1 receptor (high levels in bone and kidney) and the parathyroid hormone 2 receptor (high levels in the central nervous system, pancreas, testis, and placenta). PTH half-life is approximately 4 minutes. It has a molecular mass of 9.4 kDa.

PTH reduces the reabsorption of phosphate from the proximal tubule of the kidney which means more phosphate is excreted through the urine. However, PTH enhances the uptake of phosphate from the intestine and bones into the blood. In the bone, slightly more calcium than phosphate is released from the breakdown of bone. In the intestines, absorption of both Calcium and Phosphate is mediated by an increase in activated vitamin D. The absorption of phosphate is not as dependent on vitamin D as is that of calcium. The end result of PTH release is a small net drop in the serum concentration of phosphate.

PTH can be measured in the blood in several different forms: intact PTH; N-terminal PTH; mid-molecule PTH, and C-terminal PTH, and different tests are used in different clinical situations. The average PTH level is 10-60 pg/ml.

Teriparatide (Forteo, also available in generic form) is a recombinant form of parathyroid hormone, used in the treatment of some forms of osteoporosis. It is manufactured and marketed by Eli Lilly and Company. Teriparatide is administered by injection once a day in the thigh or abdomen. The recommended dose is 20 µg per day. Teriparatide is the portion of human parathyroid hormone (PTH), amino acid sequence 1 through 34, of the complete molecule (containing 84 amino acids). Endogenous PTH is the primary regulator of calcium and phosphate metabolism in bone and kidney. PTH increases serum calcium, partially accomplishing this by increasing bone resorption. Thus, chronically elevated PTH will deplete bone stores. However, intermittent exposure to PTH will activate osteoblasts more than osteoclasts. Thus, once-daily injections of teriparatide have a net effect of stimulating new bone formation leading to increased bone mineral density. Teriparatide is the first, and to date only, FDA approved agent for the treatment of osteoporosis that stimulates new bone formation.

References: Parfitt AM (2003) *J. Bone Miner. Res.* **17** (10): 1741–3; Keutmann HT (1975) *Biochemistry* **14** (9): 1842–7; Klaus W (1991) *Biochemistry* **30** (28): 6936–42; Andreatta RH (1973) *Helv. Chim. Acta* **56** (1): 470–3; Vasicek TJ (1983) *PNAS* **80**, 2127-2131

All peptides are for in vitro research use only.

Please consult "Frequently asked questions" section at our website for Guidance on storage and solubility of the peptides.

http://www.4adi.com/commerce/info/showpage.jsp?page_id=1088&category_id=2427

Related Items

Catalog#	ProdDescription
SP-101254-1	Parathyroid Hormone (PTH,1-34)-Lys(Biotin)
SP-101255-1	Parathyroid Hormone (PTH,1-34), rat
SP-101859-1	[Tyr0]-pTH-Related Protein (1-34) (human, rat)
SP-101861-1	[Tyr36]-pTH-Related Protein (1-36) (human, rat)
SP-101862-1	[Asn10,Leu11,D-Trp12]-pTH-Related Protein (7-34) amide (human, rat) [
SP-101863-1	pTH-Related Protein Splice Isoform 3 (140-173) (human)
SP-101864-1	[Nle8'18,Tyr34]-pTH (1-34) amide (bovine)
SP-101866-1	[Tyr1]-pTH (1-34) (rat]
SP-101867-1	[Tyr1] -pTH (1-34), human]
SP-101868-1	Parathyroid Hormone (PTH,1-38), human
SP-101869-1	Parathyroid Hormone (PTH,1-44), human
SP-101870-1	pTH (3-34) (bovine)
SP-101871-1	[Nle8'18,Tyr34]-pTH (3-34) amide (bovine)
SP-101872-1	[Nle8'18,Tyr34]-pTH (7-34) amide (bovine)
SP-101873-1	[Tyr34]-pTH (7-34) amide (bovine)
SP-101874-1	[D-Trp12,Tyr34]-pTH (7-34) amide (bovine)
SP-101875-1	pTH (13-34) (human)
SP-101876-1	[Tyr27]-pTH (27-48) (human)
SP-101877-1	pTH (28-48) (human)
SP-101878-1	[Nle8'21,Tyr34]-pTH (1-34) amide (rat)
SP-101879-1	[Tyr43] PTH (43-68) (human)
SP-101940-1	[Tyr52] PTH (52-84) (human)
SP-101941-1	pTH (53-84) (human)
SP-101942-1	" [Tyr63] PTH (63-84), human
SP-101943-1	[Asn76] PTH (64-84), human
SP-101945-1	Parathyroid Hormone (PTH,70-84), human
SP-50101-1	Parathyroid Hormone (PTH,1-34), human
SP-51920-1	pTH-Related Protein (1-34)
SP-52294-1	Parathyroid Hormone (PTH, 1-34), Bovine

SP-50101-1

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India Contact:

Life Technologies (India) Pvt. Ltd.

306, Aggarwal City Mall, Opposite M2K Pitampura, Delhi – 110034 (INDIA). Ph: +91-11-42208000, 42208111, 42208222, Mobile: +91-9810521400, Fax: +91-11-42208444
Email: customerservice@lifetechindia.com Website: www.lifetechindia.com