

PTH

Synthetic Human Parathyroid Hormone (aa 1-34)

Catalog No.	CRP127A	Quantity:	200 µg
	CRP127B		1.0 mg
	CRP127C		5 mg

Alternate Names: Parathyrin, PTH, Parathormone.

Description: Parathyroid hormone (PTH), or parathormone, is secreted by the parathyroid glands as a polypeptide containing 84 amino acids. It acts to increase the concentration of calcium in the blood, whereas calcitonin (a hormone produced by the parafollicular cells of the thyroid gland) acts to decrease calcium concentration.

PTH acts to increase the concentration of calcium in the blood by acting upon parathyroid hormone receptor in three parts of the body. In the bones, it enhances the release of calcium from the large reservoir contained in the bones. Bone resorption is the normal destruction of bone by osteoclasts, which are indirectly stimulated by PTH. Stimulation is indirect since osteoclasts do not have a receptor for PTH. Instead, PTH binds to osteoblasts, the cells responsible for creating bone. Binding stimulates osteoblasts to increase their expression of RANKL, which can bind to osteoclast precursors containing RANK, a receptor for RANKL. The binding of RANKL to RANK stimulates these precursors to fuse, forming new osteoclasts which ultimately enhances the resorption of bone.

In the kidney, parathyroid hormone enhances active reabsorption of calcium from distal tubules and the thick ascending limb.

In the intestine, it enhances the absorption of calcium in the intestine by increasing the production of vitamin D and upregulating the enzyme responsible for 1-alpha hydroxylation of 25-hydroxy vitamin D, converting vitamin D to its active form (1,25-dihydroxy vitamin D) which effects the actual absorption of calcium (as Ca⁺⁺ ions) by the intestine via calbindin.

Recombinant Human full length PTH 1-84 has potential as an anti-osteoporotic agent, due to its properties as a bone formation stimulant, it increases bone turnover, stimulating osteoblasts and reducing both vertebral and non vertebral fractures.

Parathyroid Hormone Human Synthetic (C₁₈₁H₂₉₀N₅₅O₅₁S₂) contains 34 amino acids and has a molecular mass of 4117.8 Da.

Physical Appearance: Sterile Filtered White lyophilized (freeze-dried) powder.

GenelD: 5741

Molecular Mass: 4117.8 Dalton

Formulation: The protein (1 mg/ml) was lyophilized without any additives.

Purity: Greater than 98.0% as determined by RP-HPLC.

Purification: The PTH is purified by proprietary chromatographic techniques.



Amino Acid Sequence: Ala-Val-Ser-Glu-Ile-Gln-Phe-Met-His-Asn-Leu-Gly-Lys-His-Leu-Ser-Ser-Met-Glu-Arg-Val-Glu-Trp-Leu-Arg-Lys-Lys-Leu-Gln-Asp-Val-His-Asn-Phe.

Reconstitution: Reconstitute the lyophilized protein in sterile distilled water at not less than 100 µg/ml. The diluted protein can then be further diluted with other aqueous solutions.

Storage & Stability: Lyophilized product, although stable at room temperature for 3 weeks, should be stored desiccated below -18°C. Upon reconstitution, PTH may be kept at 2-4°C for 2-7 days. For long term storage, it is recommended that the protein be aliquoted and stored below -18°C with the addition of a carrier protein (0.1% HSA or BSA). **Please prevent freeze-thaw cycles.**

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