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## Product Data Sheet

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Product Name: PTH (7-84) Human

Cat. No.: GP21299

Batch No.: 1

**Product Data**

Purity	>98%	Source	Escherichia Coli.
Physical Appearance	solid	Shipping Condition	Shipped at Room temp.
Synonyms	Parathyrin; PTH; Parathormone.		
Amino Acid Sequence	LMHNLGKHLN SMERVEWLRK KLQDVHNFVA LGAPLAPRDA GSQRPRKKED NVLVESHEKS LGEADKADV N VLTAKKSQ.		
Solubility	It is recommended to reconstitute the lyophilized PTH (7-84) in sterile 18MΩ-cm H <sub>2</sub> O not less than 100 µg/ml, which can then be further diluted to other aqueous solutions.		
Formulation	Lyophilized from a 0.2 µm filtered concentrated solution in PBS, pH 7.4.		

**Introduction**

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; rather, 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- It 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-

**Caution: Product has not been fully validated for medical applications. For research use only.**

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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<sup>2+</sup> ions) by the intestine via calbindin.

### Stability

Lyophilized PTH (7-84) although stable at room temperature for 3 weeks, should be stored desiccated below -18C. Upon reconstitution PTH (7-84) should be stored at 4C between 2-7 days and for future use below -18C. For long term storage it is recommended to add a carrier protein (0.1% HSA or BSA). Please prevent freeze-thaw cycles.

### Background

PTH (7-84) Human Recombinant produced in E.Coli is a single, non-glycosylated, polypeptide chain containing 76 amino acids, having an MW of 8.8kDa. The PTH (7-84) is purified by proprietary chromatographic techniques.

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