



Product Data Sheet

Cat # RP-1512

Human Parathyroid Hormone (1-34)

**Size:** 200 ug

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-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.

**Usage:** This item is for LABORATORY RESEARCH USE ONLY. The product may not be used as drugs, agricultural or pesticidal products, food additives or household chemicals.

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**Source:** Parathyroid Hormone Human Synthetic (C<sub>181</sub>H<sub>290</sub>N<sub>55</sub>O<sub>51</sub>S<sub>2</sub>) contains 34 amino acids and has a molecular mass of 4117.8 Dalton. The PTH is purified by proprietary chromatographic techniques. The protein (1 mg/ml) was lyophilized without any additives.

**Application and Suggested Dilution:** It is recommended to reconstitute the lyophilized Parathormone 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. Greater than 98.0% as determined by RP-HPLC. Users must optimize concentration and conditions for each assay.

**Storage and Stability:** If supplied in powder then reconstitute it in 100 ul water for 1 mg/ml stock and store in liquid at 4°C for ~1 week or aliquots in suitable size and store at -20°C for long term storage.