Product Data Sheet

Product Name:	PTH (1-84) N15 Human
Cat. No.:	GP21298
Batch No.:	1

Product Data

Purity	>98%	Source	Escherichia Coli.
Phycical Appearance	solid	Shipping Condition	Shipped at Room temp.
Synonyms	Parathyrin; PTH; Parathormone.		
Amino Acid Sequence	SVSEIQLMHN LGKHLNSMER VEWLRKKLQD VHNFVALGAP LAPRDAGSQR PRKKEDNVLV ESHEKSLGEA DKADVNVLTK AKSQ.		
Solubility	It is recommended to reconstitute the lyophilized Parathormone in sterile 18MΩ-cm H2O not less than 100 µg/ml, which can then be further diluted to other aqueous solutions.		
Formulation	PTH (1-84) N15 protein was lyophilized from a 0.2µm filtered concentrated solution in 1xPBS, 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 calciumin 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 receptorin 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

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increasing the production of vitamin D and upregulating the enzyme responsible for 1-alpha hydroxylationof 25-hydroxy vitamin D, converting vitamin D to its active form (1,25-dihydroxy vitamin D) which effects the actual absorption of calcium (as Ca2+ 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.

Biological Activity

The activity calculated by UMR106 cell/cAMP method corresponding to a specific activity of 9,000 Units/mg.

Stability

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

Background

PTH (1-84) N15 Human Recombinant produced in E.coli is a single, non-glycosylated polypeptide chain containing 84 amino acids and having a molecular mass of 9550 Dalton labeled by the stable isotope N15.The PTH (1-84) N15 is purified by proprietary chromatographic techniques.

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