GENAXXON bioscience

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rec. Human Parathyroid Hormone (aa 1-34)

rhuPTH (aa 1-34)

Product	Cat#	Package size
rec. Human Parathyroid Hormone (hPTH (aa 1-34)	C6499.0100	100µg
rec. Human Parathyroid Hormone (hPTH (aa 1-34)	C6499.0500	500µg
rec. Human Parathyroid Hormone (hPTH (aa 1-34)	C6499.1000	1mg

Introduction

Parathyroid hormone (PTH), or parathormone, is secreted by the parathyroid glands as a polypeptide of 84 amino acids. It acts by increasing 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 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.

Description

rec. Human Parathyroid Hormone (C181H290N55O51S2) produced in *E.Coli* is a single, non-glycosylated, polypeptide chain of 34 amino acids and a molecular mass of 4117.8 Dalton.

Synonyms: Parathyrin, PTH, Parathormone.

Source: rec. from *E.coli*

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

Biological activity:

The activity calculated by UMR106 cell/cAMP method corresponds to a specific activity of 10,000 Units/mg.

Amino acid sequence:

H-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-OH.

Formulation: rhuPTH (1mg/mL) was lyophilized after extensive dialyses against 1.15mg/L sodium citrate, 7.31mg/L sodium chloride, 0.21mg/L citric acid, 0.1117mg/L EDTA-Na2, 0.2mg/L Tween 80 and 50mg/L Mannitol.

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

Stability

Lyophilized ruhPTH although stable at room temperature for 3 weeks, should be stored desiccated below -20°C. Upon reconstitution rhuPTH should be stored at +2°C to +8°C between 2-7 days and for future use below -20°C. For long term storage it is recommended to add a carrier protein (0.1% HSA or BSA).
Please prevent freeze-thaw cycles.

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Reconstitution

It is recommended to reconstitute the lyophilized rec. human Parathyroid hormone (PTH) in sterile 18MΩ-cm H2O not less than 100µg/mL, which can then be further diluted to other aqueous solutions.

Usage

This product is for research/laboratory usage only. It may not be used as drugs, agricultural or pesticidal products, food additives or household chemicals.