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PTH Human

Parathyroid Hormone (1-34) Human Recombinant
HRM0098

Product Overview

Name	PTH Human
Description	
Parathyroid Hormone (1-34) Human Recombinant	
Accession (Primary)	P01270
Synonyms	
Parathyrin, PTH, Parathormone.	
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 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.

Source	
Escherichia Coli.	
Physical Appearance	
Sterile Filtered White lyophilized (freeze-dried) powder.	
Formulation	

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The protein (1 mg/ml) was lyophilized after extensive dialyses against 1.15 mg sodium citrate, sodium chloride 7.31 mg, 0.21 mg citric acid, 0.1117 EDTA-Na2, 0.2 mg Tween 80 and 50 mg Mannitol.

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.

Purity

Greater than 98.0% as determined by: (a) Analysis by RP-HPLC. (b) Analysis by SDS-PAGE.

Amino acid sequence

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.

Biological Activity

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

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.

References

Title :Cathepsin K Expression and Activity in Canine Osteosarcoma. Publication : Article first published online: 15 DEC 2011 DOI:10.1111/j.1939-1676.2011.00834.x Copyright © 2011 by the American College of Veterinary Internal Medicine. Link : PTH prospec publication

Precautions

PTH Human is for research use only and not for use in diagnostic or therapeutic procedures.

Target Information: (P01270)