



LKT Laboratories, Inc.

## Parathyroid Hormone (1-34), cow

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### Product Information

Product ID P0269

CAS No. 12583-68-5

**Chemical Name**

Synonym Teriparatide

Formula  $C_{183}H_{288}N_{54}O_{50}S_2$

Formula Wt. 4108.7

**Melting Point**

Purity  $\geq 95\%$

Solubility Soluble in water (1 mg/mL),  
acid.

Store Temp  $-20^{\circ}C$

Ship Temp Ambient

**Description** PTH (parathyroid hormone) is an endogenous peptide hormone that binds PTH1/2 receptors and exhibits anti-osteoporotic, anti-angiogenic, and pro-fibrotic activities. PTH (1-34) is clinically used to treat osteoporosis, as it promotes bone formation, increases bone mineral density, enhances bone strength, and improves bone biomechanical properties. In vivo, PTH downregulates expression of collagen type 1 and RANKL and also decreases activity of osteoblasts. PTH activates PKA signaling to inhibit angiogenesis in vitro in an HSP70-mediated manner but also promotes the epithelial-to-mesenchymal transition (EMT) in vitro and in vivo, potentially enhancing cancer aggressiveness and metastasis. Additionally, PTH promotes fibrosis by activating hepatic stellate cells and increasing levels of matrix metalloproteinase 2 (MMP2), collagen, TGF- $\beta$ , and  $\alpha$ -SMC in vitro.

Ala-Val-Ser-Glu-Ile-Gln-Phe-  
Met-His-Asn-Leu-Gly-Lys-His-  
Leu-Ser-Ser-Met-Glu-Arg-Val-  
Glu-Trp-Leu-Arg-Lys-Lys-Leu-  
Gln-Asp-Val-His-Asn-Phe

**Bulk quantities available upon request**

Product ID	Size
P0269	0.5 mg
P0269	1 mg
P0269	2.5 mg

**References** Ongkeko WM, Burton D, Kiang A, et al. Parathyroid Hormone Related-Protein Promotes Epithelial-to-Mesenchymal Transition in Prostate Cancer. *PLoS One*. 2014 Jan 22;9(1):e85803. PMID: 24465715.

Augustine M, Horwitz MJ. Parathyroid hormone and parathyroid hormone-related protein analogs as therapies for osteoporosis. *Curr Osteoporos Rep*. 2013 Dec;11(4):400-6. PMID: 24078470.

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Xu J, Rong H, Ji H, et al. Effects of different dosages of parathyroid hormone-related protein 1-34 on the bone metabolism of the ovariectomized rat model of osteoporosis. *Calcif Tissue Int*. 2013 Sep;93(3):276-87. PMID: 23807531.

Saini V, Marengi DA, Barry KJ, et al. Parathyroid hormone (PTH)/PTH-related peptide type 1 receptor (PPR) signaling in osteocytes regulates anabolic and catabolic skeletal responses to PTH. *J Biol Chem*. 2013 Jul 12;288(28):20122-34. PMID: 23729679.

Grzesiak JJ, Smith KC, Chalberg C, et al. Heat shock protein-70 expressed on the surface of cancer cells binds parathyroid hormone-related protein in vitro. *Endocrinology*. 2005 Aug;146(8):3567-76. PMID: 15878959.

Bakre MM, Zhu Y, Yin H, et al. Parathyroid hormone-related peptide is a naturally occurring, protein kinase A-dependent

**Caution:** This product is intended for laboratory and research use only. It is not for human or drug use.