

## Human PTHrP-(1-36)

|                             |   |                                      |
|-----------------------------|---|--------------------------------------|
| <b>Cat. No.:</b>            | HY-106288   |                                      |
| <b>CAS No.:</b>             | 172867-62-8   |                                      |
| <b>Molecular Formula:</b>   | C <sub>191</sub> H <sub>305</sub> N <sub>59</sub> O <sub>52</sub>   |                                      |
| <b>Molecular Weight:</b>    | 4259.83   | AVSEHQLLHDKGKSIQDLRRRFFLHHLIAEIHTAEI |
| <b>Sequence Shortening:</b> | AVSEHQLLHDKGKSIQDLRRRFFLHHLIAEIHTAEI  |                                      |
| <b>Target:</b>              | PTHR  |                                      |
| <b>Pathway:</b>             | GPCR/G Protein  |                                      |
| <b>Storage:</b>             | Sealed storage, away from moisture and light, under nitrogen  |                                      |
|                             | Powder  | -80°C 2 years<br>-20°C 1 year        |
|                             | * In solvent : -80°C, 6 months; -20°C, 1 month (sealed storage, away from moisture and light, under nitrogen) |                                      |

### SOLVENT & SOLUBILITY

|   |  |                              |             |             |             |              |
|---|--|------------------------------|-------------|-------------|-------------|--------------|
| <b>In Vitro</b>   | H <sub>2</sub> O : 100 mg/mL (23.48 mM); Need ultrasonic)                                  |                              |             |             |             |              |
|   | <b>Preparing Stock Solutions</b>   | <b>Solvent Concentration</b> | <b>Mass</b> | <b>1 mg</b> | <b>5 mg</b> | <b>10 mg</b> |
|   |  | <b>1 mM</b>                  |             | 0.2348 mL   | 1.1738 mL   | 2.3475 mL    |
|   |  | <b>5 mM</b>                  |             | 0.0470 mL   | 0.2348 mL   | 0.4695 mL    |
|   |  | <b>10 mM</b>                 |             | 0.0235 mL   | 0.1174 mL   | 0.2348 mL    |
| Please refer to the solubility information to select the appropriate solvent. |  |                              |             |             |             |              |
| <b>In Vivo</b>  | 1. Add each solvent one by one: Saline<br>Solubility: ≥ 25 mg/mL (5.87 mM); Clear solution |                              |             |             |             |              |

### BIOLOGICAL ACTIVITY

|                    |   |
|--------------------|---|
| <b>Description</b> | Human PTHrP-(1-36) is a secretory form of PTHrP with anticalciuric effects. Human PTHrP-(1-36) enhances beta cell function and proliferation. Human PTHrP-(1-36) can be used in the research of humoral hypercalcemia of malignancy (HHM) and hyperparathyroidism <sup>[1][3]</sup> .   |
| <b>In Vitro</b>    | Human PTHrP-(1-36) (EC <sub>50</sub> : 0.05 nM) increases intracellular calcium in human epidermal keratinocytes <sup>[2]</sup> .<br>Human PTHrP-(1-36) (100 nM, 24 h) increases human β-cell proliferation <sup>[3]</sup> .<br>Human PTHrP-(1-36) (100 nM, 30 min) enhances insulin secretion in human islets <sup>[3]</sup> .<br>PTHrP-(1-36) (mouse, EC <sub>50</sub> : 1 nM) induces a rapid Ca <sup>2+</sup> response in UMR 106 cells <sup>[4]</sup> .<br>MCE has not independently confirmed the accuracy of these methods. They are for reference only. |

## In Vivo

PTHrP-(1-36) (mouse, 160 µg/kg, s.c., for 5 days/week for 7, 30, or 90 days) enhances beta cell regeneration and increases beta cell mass in a mouse model of partial pancreatectomy<sup>[5]</sup>.

PTHrP-(1-36) (mouse, 100 µg/kg, s.c., every other day) reverses the observed decrease of Wisp1 expression in the diabetic mice<sup>[6]</sup>.

MCE has not independently confirmed the accuracy of these methods. They are for reference only.

## REFERENCES

- [1]. Everhart-Caye M, et al. Parathyroid hormone (PTH)-related protein(1-36) is equipotent to PTH(1-34) in humans. *J Clin Endocrinol Metab.* 1996 Jan;81(1):199-208.
- [2]. Orloff JJ, et al. Analysis of PTHrP binding and signal transduction mechanisms in benign and malignant squamous cells. *Am J Physiol.* 1992 May;262(5 Pt 1):E599-607.
- [3]. Guthalu Kondegowda N, et al. Parathyroid hormone-related protein enhances human β-cell proliferation and function with associated induction of cyclin-dependent kinase 2 and cyclin E expression. *Diabetes.* 2010 Dec;59(12):3131-8.
- [4]. Valín A, et al. C-terminal parathyroid hormone-related protein (PTHrP) (107-139) stimulates intracellular Ca(2+) through a receptor different from the type 1 PTH/PTHrP receptor in osteoblastic osteosarcoma UMR 106 cells. *Endocrinology.* 2001 Jul;142(7):2752-9.
- [5]. Mozar A, et al. Parathyroid Hormone-Related Peptide (1-36) Enhances Beta Cell Regeneration and Increases Beta Cell Mass in a Mouse Model of Partial Pancreatectomy. *PLoS One.* 2016 Jul 8;11(7):e0158414.
- [6]. Portal-Núñez S, et al. Alterations of the Wnt/beta-catenin pathway and its target genes for the N- and C-terminal domains of parathyroid hormone-related protein in bone from diabetic mice. *FEBS Lett.* 2010 Jul 16;584(14):3095-100.

**Caution: Product has not been fully validated for medical applications. For research use only.**

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