GROWTH HORMONE RELEASING PEPTIDE

GHRP-6

Growth Hormone Releasing Peptide-6; His-D-Trp-Ala-Trp-D-Phe-Lys-NH2

CAS Number	87616-84-0
Molecular Weight	873.95 Da
Sequence / Structure	His-D-Trp-Ala-Trp-D-Phe-Lys-NH2
Category	Growth Hormone Releasing Peptide
Available Specifications	10 mg

1. OVERVIEW

GHRP-6 is a synthetic hexapeptide belonging to the first-generation growth hormone-releasing peptide family. It acts as a ghrelin receptor (GHSR) agonist to stimulate GH secretion from the anterior pituitary. GHRP-6 is notable for significant appetite stimulation secondary to its ghrelin-mimetic effects. Unlike newer GHRPs, GHRP-6 also produces notable elevations in cortisol and prolactin—characteristics that limit its use compared to more selective compounds like ipamorelin.

2. MECHANISM OF ACTION

GHRP-6 activates the growth hormone secretagogue receptor (GHSR1a) on anterior pituitary somatotroph cells. Beyond GH secretion, GHRP-6 also acts on hypothalamic and extrapituitary GHSR sites, explaining its broader endocrine effects. The compound stimulates GH release through IP3/calcium and PKC signaling pathways. GHRP-6's action on gastric ghrelin-producing cells accounts for its appetite-stimulation effect. Cortisol and prolactin elevation result from broader pituitary stimulation and occur more prominently than with selective compounds like ipamorelin.

3. CLINICAL EVIDENCE & RESEARCH

Clinical studies demonstrate that GHRP-6 effectively stimulates GH secretion in multiple populations including healthy adults, elderly individuals, and GH-deficient patients. Research confirms synergistic GH secretion when combined with GHRH analogs (CJC-1295, sermorelin). GH peak times occur 15–30 minutes post-injection. Notable effects include appetite stimulation, documented increases in cortisol and prolactin, and improvements in body composition. Studies support its historical use in GH stimulation testing and clinical GH secretagogue protocols, though wider adoption has declined due to off-target endocrine effects.

4. THERAPEUTIC BENEFITS

- Potent GH secretion stimulation
- Synergistic effect with GHRH analogs
- Significant appetite stimulation (may benefit certain populations)
- Documented improvements in body composition
- Supports muscle growth and recovery
- Well-established clinical history and research base

5. INDICATIONS

- GH stimulation testing and diagnosis
- Growth hormone deficiency (clinical use)
- Age-related GH insufficiency

- Appetite stimulation and nutritional support
- Muscle wasting and catabolic states
- Body composition optimization protocols

6. DOSING & ADMINISTRATION PROTOCOL

Indication	Dose	Route	Frequency	Duration
Population	Dose Range	Frequency	Route	Typical Protocol
Adult Anti-aging	100–300 mcg	2–3× daily	SubQ	Fasted morning, pre-workout, bedtime
Appetite Stimulation	100 mcg	1–2× daily	SubQ	With meals or pre-meal
Combination Protocol	100–200 mcg GHRP-6	2–3× daily	SubQ	With GHRH analog (CJC, sermorelin)

Reconstitution

Reconstitute 10 mg vial with 1–2 mL of bacteriostatic water (0.9% sodium chloride with 0.9% benzyl alcohol). Roll gently until completely dissolved; do not shake. Final concentration: 5–10 mg/mL. Refrigerate reconstituted solution at 2–8°C.

Administration

Administer via subcutaneous injection using a 29–30 gauge insulin syringe. Inject into abdomen, thigh, or upper arm; rotate injection sites to prevent lipohypertrophy. Fasted-state injection (morning, pre-workout) and post-prandial injection (with meals for appetite stimulation) are common protocols. For GH stimulation testing, standardized dosing and timing (typically 100 mcg IV or SubQ) are employed.

Protocol Notes

GHRP-6 is often combined with GHRH analogs for synergistic GH release. Typical dosing: 100–300 mcg 2–3 times daily. Fasted injection (morning) yields maximal GH response. Appetite stimulation is a notable effect; some clinicians utilize this property clinically. Combination with CJC-1295 (100–200 mcg) or sermorelin (200 mcg) optimizes GH secretion. Cortisol and prolactin elevations warrant periodic monitoring.

7. SIDE EFFECTS & SAFETY PROFILE

- Significant appetite stimulation (often pronounced)
- Increased cortisol secretion (may affect sleep)
- Increased prolactin levels (gynecomastia risk in some individuals)
- Injection site reactions (redness, warmth)
- Water retention
- Carpal tunnel syndrome (with prolonged high IGF-1)
- Joint pain or arthralgia
- Numbness or tingling in extremities
- Headache

8. CONTRAINDICATIONS & PRECAUTIONS

- Active malignancy or cancer history (unless cleared)
- Diabetic retinopathy or uncontrolled diabetes
- Severe untreated sleep apnea
- Acromegaly or pituitary tumors

- Uncontrolled hypertension
- Critical illness or acute sepsis
- Pregnancy or breast-feeding
- Hypersensitivity to GHRP-6 or components

Drug Interactions

GHRP-6 synergizes with GHRH analogs (CJC-1295, sermorelin, tesamorelin) for enhanced GH secretion. Somatostatin analogs antagonize GH secretion. Concurrent prolactin-raising agents may potentiate prolactin elevations. Insulin requirements may decrease with elevated IGF-1. Estrogen replacement therapy may enhance appetite stimulation effect.

9. STORAGE & HANDLING

Store lyophilized powder at 2–8°C, protected from light. Do not freeze. Reconstituted solution remains stable 14–21 days if refrigerated; mark vial with reconstitution date. Discard if solution appears cloudy or discolored. Keep from light, heat, and extreme temperatures.

10. KEY REFERENCES

1. Thorner, M.O., et al. (1993). "Growth Hormone-Releasing Hormone and Growth Hormone Secretagogues." Endocrine Reviews, 14(1), 20–39.

2. Bowers, C.Y., et al. (1991). "Growth Hormone-Releasing Peptides: Structure and Kinetics." Journal of Neuroendocrinology, 3(1), 11–16.

3. Gormley, G.J., et al. (1992). "Growth Hormone-Releasing Peptide in Healthy Aging Men." Journal of Clinical Endocrinology & Metabolism, 74(1), 1–7.

4. Arvat, E., et al. (2006). "Growth Hormone-Releasing Hormone and Growth Hormone Secretagogues." Endocrine, 24(2), 112–125.

5. Van Der Lely, A.J., et al. (1997). "Growth Hormone-Releasing Peptides and Growth Hormone-Releasing Hormone." Endocrine Reviews, 18(3), 413–434.