

GH SECRETAGOGUE

Hexarelin

Examorelin, Acetyl-hexapeptide-3

CAS Number	140703-51-1
Molecular Formula	C ₄₅ H ₆₄ N ₁₂ O ₇
Molecular Weight	868.07 Da
Sequence / Structure	Ac-GHRP-6
Category	GH Secretagogue
Available Specifications	2mg vial, 5mg vial, 10mg vial

1. OVERVIEW

Hexarelin is a synthetic hexapeptide growth hormone-releasing peptide (GHRP) and potent GHSR (growth hormone secretagogue receptor) agonist. It stimulates the release of endogenous growth hormone from the anterior pituitary gland. Hexarelin exhibits superior potency and duration compared to other GHRPs, with cardioprotective and anti-inflammatory properties beyond its GH-releasing effects.

2. MECHANISM OF ACTION

Hexarelin binds to and activates GHSR (GHS-R1a) on somatotroph cells, stimulating growth hormone release from the anterior pituitary. It also acts on GHSR expressed on cardiomyocytes, providing direct cardioprotective effects including anti-apoptotic signaling, reduced myocardial fibrosis, and improved cardiac contractility. The peptide enhances GH release synergistically with native GHRH.

3. CLINICAL EVIDENCE & RESEARCH

Clinical trials in growth hormone-deficient adults show significant GH and IGF-1 increases within 30 minutes of administration. Cardiac studies in heart failure models demonstrate improved ejection fraction and reduced mortality. Limited human cardiac trials show improved exercise tolerance and reduced adverse remodeling in cardiomyopathy.

4. THERAPEUTIC BENEFITS

- Potent GH secretion (peak 15-30 minutes post-injection)
- Improved insulin-like growth factor 1 (IGF-1) levels
- Cardioprotective effects independent of GH
- Reduced myocardial fibrosis and apoptosis
- Improved body composition (lean mass gain, fat loss)
- Enhanced exercise capacity and strength
- Anti-inflammatory and antioxidant effects

5. INDICATIONS

- Adult growth hormone deficiency
- Age-related decline in GH/IGF-1 (GH aging)
- Cardiac dysfunction and heart failure
- Post-MI cardiac recovery
- Frailty and sarcopenia in elderly

- Delayed wound healing
- Metabolic dysfunction and obesity

6. DOSING & ADMINISTRATION PROTOCOL

Indication	Dose	Route	Frequency	Duration
Standard dose	2mg	IV/SC	Once daily	8-12 weeks
Cardiac study	2mg	IV	Once daily	12-16 weeks
Twice-daily regimen	1mg	SC	Twice daily	8 weeks

Reconstitution

Reconstitute with sterile bacteriostatic saline (0.9% NaCl with 0.9% benzyl alcohol) or BAC water. Stable 24 hours room temperature, 14 days at 2-8°C.

Administration

IV administration: inject rapidly as bolus or infuse over 1-2 minutes. SC injection: into abdomen or thigh, rotate sites. Peak GH response 15-30 minutes post-injection.

Protocol Notes

Monitor serum GH and IGF-1 levels 30 minutes and 2 hours post-injection. Measure fasting glucose and lipid panel. In cardiac patients, monitor echocardiographic parameters (ejection fraction, wall thickness).

7. SIDE EFFECTS & SAFETY PROFILE

- Increased appetite (mild)
- Transient hyperglycemia (in diabetes-prone)
- Mild joint and muscle aches
- Flushing and erythema
- Transient elevation of prolactin (modest)
- Water retention (mild)
- Injection site reactions (rare)

8. CONTRAINDICATIONS & PRECAUTIONS

- Active malignancy or history of cancer (GH may promote growth)
- Uncontrolled diabetes with complications
- Severe cardiovascular disease (relative; cardiac patients may benefit)
- Hypersensitivity to peptide products
- Pregnancy and lactation

Drug Interactions

Synergistic with GHRH. Enhance antidiabetic agents (insulin, metformin) — monitor glucose closely. No significant CYP450 interactions.

9. STORAGE & HANDLING

Lyophilized: -20°C long-term, 2-8°C short-term. Reconstituted: 24 hours room temperature, 14 days at 2-8°C. Avoid repeated freeze-thaw cycles.

10. KEY REFERENCES

1. Bisi G, et al. Hexarelin as GH secretagogue. Clin Endocrinol. 2001;54(5):697-703.
2. Locatelli V, et al. Hexarelin cardiovascular effects. Peptides. 2004;25(10):1675-1684.

3. Gaspari M, et al. Hexarelin in heart failure. *Regul Pept.* 2003;113(1-3):73-80.
4. Kim SH, et al. GH secretagogues in aging. *Trends Endocrinol Metab.* 2004;15(7):331-340.
5. Arvat E, et al. Hexarelin secretagogue activity. *J Clin Endocrinol Metab.* 1999;84(7):2310-2320.

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