

Ipamorelin — Research Summary

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1. What It Is

Ipamorelin is a selective growth hormone secretagogue — a pentapeptide (Aib-His-D-2-Nal-D-Phe-Lys-NH₂, CAS 170851-70-4) that agonizes the ghrelin receptor (GHS-R1a) on pituitary somatotrophs. Developed by Novo Nordisk A/S and first described in 1998, it was derived from a series of GHRP-1 analogs by removing the central Ala-Trp dipeptide, a modification that preserved GH-releasing activity while improving receptor selectivity.

Its distinguishing feature in the literature is selectivity: it stimulates GH release without significantly elevating cortisol, prolactin, ACTH, FSH, LH, or TSH, even at doses far above the effective GH-releasing dose — unlike older, less selective growth hormone secretagogues (e.g., GHRP-6).

2. Reported Effects in Research Literature

- Foundational selectivity study: Raun et al. (1998) characterized ipamorelin as "the first selective growth hormone secretagogue," establishing its lack of cortisol/prolactin/ACTH elevation even at high doses.
- Pharmacokinetic/pharmacodynamic modeling: Gobburu et al. (1999) modeled GH peak timing and clearance patterns following ipamorelin administration in human volunteers.
- Preclinical (rat): In vitro and animal studies report GH-releasing potency and efficacy comparable to other GH secretagogues like GHRP-6, without the accompanying cortisol/ACTH rise.
- Bone growth (rat): Johansen et al. (1999) found ipamorelin induces longitudinal bone growth in rats and counteracts glucocorticoid-induced reductions in bone formation.
- The most rigorous human clinical trial to date for ipamorelin is unrelated to anti-aging or GH-elevation use: a Phase 2 randomized, controlled, proof-of-concept study (n=87) evaluated ipamorelin for postoperative ileus (bowel motility recovery) after colorectal surgery.
- No large-scale, long-term human safety or efficacy trials exist for ipamorelin used as a standalone GH secretagogue for anti-aging, muscle-building, or fat-loss purposes; the postoperative-ileus trial is the strongest available controlled human data, but it tests a different clinical question.
- Ipamorelin is not FDA-approved for any indication and is banned by the World Anti-Doping Agency (WADA) as a growth hormone secretagogue.

3. Clinical & Preclinical Study References

Raun K, Hansen BS, Johansen NL, et al. "Ipamorelin, the first selective growth hormone secretagogue." *Eur J Endocrinol.* 1998;139(5):552-561. PMID: 9849822

Gobburu JV, Agersø H, Jusko WJ, Ynddal L. "Pharmacokinetic-pharmacodynamic modeling of ipamorelin." *Pharm Res.* 1999;16(9):1412-1416. PMID: 10496658

Johansen PB, et al. "Ipamorelin, a new growth-hormone-releasing peptide, induces longitudinal bone growth in rats." *Growth Horm IGF Res.* 1999;9(2):106-113. PMID: 10373343

Beck DE, et al. "Prospective, randomized, controlled, proof-of-concept study of the ghrelin mimetic ipamorelin for postoperative ileus." *J Gastrointest Surg.* 2008;12(7):1223-1231. Related larger 2014 Phase 2 RCT (n=87): PMID: 25331030

Regulatory/Safety Note: Ipamorelin is not approved by the FDA for any indication. Growth hormone secretagogues, including ipamorelin, are banned by the World Anti-Doping Agency.

This compound has not been evaluated by the FDA and is not intended to diagnose, treat, cure, or prevent any disease in humans or animals.

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