

Kisspeptin-10 — Research Summary

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1. What It Is

Kisspeptin-10 is the shortest biologically active fragment of the kisspeptin family of neuropeptides, which act on specialized GnRH (gonadotropin-releasing hormone) neurons in the hypothalamus. Activating these neurons triggers the pituitary to release luteinizing hormone (LH) and follicle-stimulating hormone (FSH), which act on the gonads — placing kisspeptin-10 at the top of the reproductive hormone signaling cascade (the hypothalamic-pituitary-gonadal axis).

- **Research focus:** reproductive endocrinology, particularly hormone-stimulation protocols in fertility medicine research.
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2. Reported Effects in Research Literature

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Kisspeptin-10 has a genuinely notable human clinical trial base for a research peptide, concentrated in reproductive endocrinology research at academic medical centers (e.g., Imperial College London / MRC Human Reproductive Sciences Unit, Edinburgh).

- **Sexual dimorphism in gonadotropin response:** A key human study found kisspeptin-10 robustly stimulates LH/FSH release in men (serum LH and FSH elevated at doses as low as 0.3–1.0 nmol/kg IV bolus), but fails to stimulate gonadotropin release in healthy women during the follicular phase of the menstrual cycle, even at much higher doses (up to 10 nmol/kg IV, 32 nmol/kg SC, or 720 pmol/kg/min IV infusion). In women during the preovulatory phase specifically, kisspeptin-10 did elevate LH and FSH.
 - **LH pulse dynamics in men:** A controlled infusion study (1.5 µg/kg·h over 9 hours) reported LH rising from a mean of 5.4 to 20.8 IU/liter, with a corresponding testosterone increase from 16.6 to 24.0 nmol/liter — establishing kisspeptin-10 as a potent stimulator of LH and LH pulse frequency in men. GnRH responsiveness was preserved during kisspeptin-10 infusion, though maximal LH responses were lower than those achieved with direct GnRH administration.
 - **Fertility/IVF research application:** The related, longer isoform kisspeptin-54 has been shown to trigger egg (oocyte) maturation in women undergoing IVF treatment, offering a potentially safer alternative to standard hCG triggers by reducing risk of ovarian hyperstimulation syndrome (OHSS). Kisspeptin-10 research is exploring a similar physiological-stimulation approach to treating infertility, since it triggers an endogenous GnRH pulse rather than directly stimulating the pituitary or gonads.
 - **Related compound in trials:** Phase 2 studies have separately evaluated a kisspeptin analogue, TAK-448, for effects on reproductive hormone secretion in healthy men.
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3. Clinical & Preclinical Study References

- George JT, Veldhuis JD, Roseweir AK, et al. “Kisspeptin-10 is a potent stimulator of LH and increases pulse frequency in men.” *J Clin Endocrinol Metab.* 2011;96(8):E1228-36. PMID: [21632807](#)
- “The effects of kisspeptin-10 on reproductive hormone release show sexual dimorphism in humans.” *J Clin Endocrinol Metab.* PMID: [21976724](#) — [Full text \(PMC\)](#)
- Jayasena CN, et al. “Direct comparison of the effects of intravenous kisspeptin-10, kisspeptin-54 and

- GnRH on gonadotrophin secretion in healthy men." *Hum Reprod.* [Full text](#)
- Related registered trial: [NCT01952782 — Neuropeptides in Human Reproduction](#)
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4. Reconstitution Process

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1. **Materials needed:** lyophilized (freeze-dried) Kisspeptin-10 powder, bacteriostatic water, alcohol swabs, syringe with needle.
2. **Bring the vial to room temperature** before reconstitution.
3. **Sanitize** the rubber stopper of both vials with an alcohol swab.
4. **Add the water slowly** down the *inside wall* of the vial, to reduce shear/foaming.
5. **Do not shake.** Gently swirl or roll between palms until fully dissolved.
6. **Inspect the solution** — should be clear and free of particulates.
7. **Label the vial** with reconstitution date and concentration.
8. **Storage:** refrigerate (2–8°C); avoid freeze-thaw cycles.

Reference: Bacteriostatic Water Volume by Vial Size

Vial Size BAC Water Added Resulting Concentration

5 mg	1 mL	5 mg/mL
5 mg	2 mL	2.5 mg/mL
5 mg	5 mL	1 mg/mL
10 mg	1 mL	10 mg/mL
10 mg	2 mL	5 mg/mL
10 mg	4 mL	2.5 mg/mL
10 mg	5 mL	2 mg/mL
10 mg	10 mL	1 mg/mL

Notes: Higher water volume = more dilute solution; lower volume = more concentrated. Always use bacteriostatic water (0.9% benzyl alcohol) for multi-draw vials; sterile water without preservative should be discarded within 24 hours.

Document created: July 16, 2026. **Revision 1:** July 29, 2026. Regulatory status (FDA compounding lists, WADA lists) is actively shifting; re-verify against current sources before any customer-facing use.

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