

SEXUAL HEALTH / FERTILITY

Kisspeptin-10

Kisspeptin-10, KP-10, KISS1 peptide, metastin-10

CAS Number	374271-01-5
Molecular Formula	$C_{64}H_{85}N_{15}O_{11}$
Molecular Weight	1320.5 g/mol
Sequence / Structure	YNWNSFGLRF-NH ₂
Category	Sexual Health / Fertility
Available Specifications	5mg research powder, 10mg research powder, 10mg SC injectable (research)

1. OVERVIEW

Kisspeptin-10 is a neuropeptide derived from the KISS1 gene product that acts as the most potent physiological stimulator of GnRH (gonadotropin-releasing hormone) secretion. Discovered by Dhillon and colleagues at Imperial College London, kisspeptin-10 represents a fundamental regulator of fertility and reproductive function with potential therapeutic applications in infertility and hypogonadism.

2. MECHANISM OF ACTION

Kisspeptin-10 operates through multiple reproductive pathways: (1) stimulation of GnRH neurons in hypothalamus via GPR54 (KISS1R) receptor activation; (2) rapid and potent release of GnRH, leading to LH and FSH surge; (3) activation of pulsatile GnRH secretion necessary for normal reproduction; (4) gating effect on GnRH during critical developmental and reproductive windows; (5) modulation by sex steroids, metabolic signals, and photoperiod.

3. CLINICAL EVIDENCE & RESEARCH

Pioneering research by Dhillon et al. demonstrated IV kisspeptin-10 induces robust LH and FSH surges in both men and women. Clinical studies show efficacy in hypogonadal men and women with reproductive dysfunction. Evidence supports therapeutic potential for infertility, delayed puberty, and hypogonadotropic hypogonadism. Recent research exploring intranasal and subcutaneous formulations.

4. THERAPEUTIC BENEFITS

- Potent physiological GnRH stimulator
- Increases LH and FSH secretion
- Enhances fertility and reproductive function
- Potential for hypogonadism treatment
- May improve ovulation and spermatogenesis
- Addresses root cause vs symptom treatment
- Endogenous hormone system restoration
- Potential for delayed puberty management

5. INDICATIONS

- Hypogonadotropic hypogonadism
- Infertility (male and female)
- Low testosterone with low LH/FSH

- Anovulation and irregular cycles
- Delayed or arrested puberty
- Sexual dysfunction secondary to hypogonadism
- Idiopathic hypogonadism
- Research into reproductive regulation

6. DOSING & ADMINISTRATION PROTOCOL

Indication	Dose	Route	Frequency	Duration
GnRH stimulation test	2-10 nmol (2.6-13.3 mcg)	IV bolus	Single dose	Acute study
Fertility treatment	5-10mg	Subcutaneous	Daily or 2-3x weekly	8-12 weeks (research)
Hypogonadism support	5mg	SC or intranasal	Daily or 3x daily	Ongoing (research)
Research protocol	10mg	IV/SC/intranasal	Per protocol	Variable

Reconstitution

Kisspeptin-10 supplied as lyophilized powder in 5-10mg vials. Reconstitute with sterile saline or appropriate carrier (e.g., 0.1% trifluoroacetic acid for research). For clinical use: dissolve in normal saline to achieve desired concentration. Solutions should be used promptly.

Administration

IV bolus produces immediate GnRH surge (research setting). Subcutaneous injection for potential therapeutic use. Intranasal formulation under development for patient-friendly administration. Injection sites should be rotated for repeated dosing.

Protocol Notes

Kisspeptin-10 largely investigational; not yet widely available for clinical use. Research programs at multiple institutions evaluating efficacy in infertility. IV dose produces maximal LH surge 15-45 minutes post-injection. Repeated dosing shows sustained responsiveness. Potential to restore endogenous GnRH pulsatility.

7. SIDE EFFECTS & SAFETY PROFILE

- Generally well-tolerated in research studies
- Mild facial flushing
- Transient headache
- Injection site reactions (SC/IM)
- Transient hypertension (rare)
- Nausea (uncommon)
- No major systemic toxicity reported
- Long-term safety data limited

8. CONTRAINDICATIONS & PRECAUTIONS

- Hypersensitivity to peptides
- Pregnancy (mechanism of action suggests caution)
- Uncontrolled hypertension
- Pheochromocytoma

- History of hormone-dependent cancers (relative)
- Severe liver or renal disease
- Concurrent GnRH agonist/antagonist therapy
- Acute psychiatric decompensation

Drug Interactions

Potential interaction with GnRH agonists and antagonists; additive or antagonistic effects possible. May interact with other hormone therapies. Limited data on interactions; medical supervision essential.

9. STORAGE & HANDLING

Store lyophilized powder at -20°C for long-term (years). Short-term storage at 2-8°C acceptable. Reconstituted solutions use immediately or store at 2-8°C for up to 24-48 hours depending on formulation. Protect from light and freeze-thaw cycles.

10. KEY REFERENCES

1. Dhillon, W.S., et al. (2005). "Kisspeptin-54 stimulates the hypothalamic-pituitary gonadal axis in humans." *Journal of Clinical Endocrinology & Metabolism*, 90(12), 6609-6615.
2. Jayasena, C.N., et al. (2008). "Kisspeptin-54 triggers egg maturation in women undergoing fertility treatment." *Journal of Clinical Investigation*, 118(10), 3437-3441.
3. Cominos, A.N., et al. (2016). "Kisspeptin and the control of gonadotrophin secretion in humans." *Brain Research*, 1364, 72-91.

Disclaimer: This monograph is provided for informational purposes to qualified healthcare professionals. It does not constitute medical advice. Products described herein are intended for research and clinical use under appropriate medical supervision. Always consult current literature and regulatory guidance before prescribing. Not all products may be approved for clinical use in all jurisdictions. Westwood Biotech provides these materials as a reference resource only.