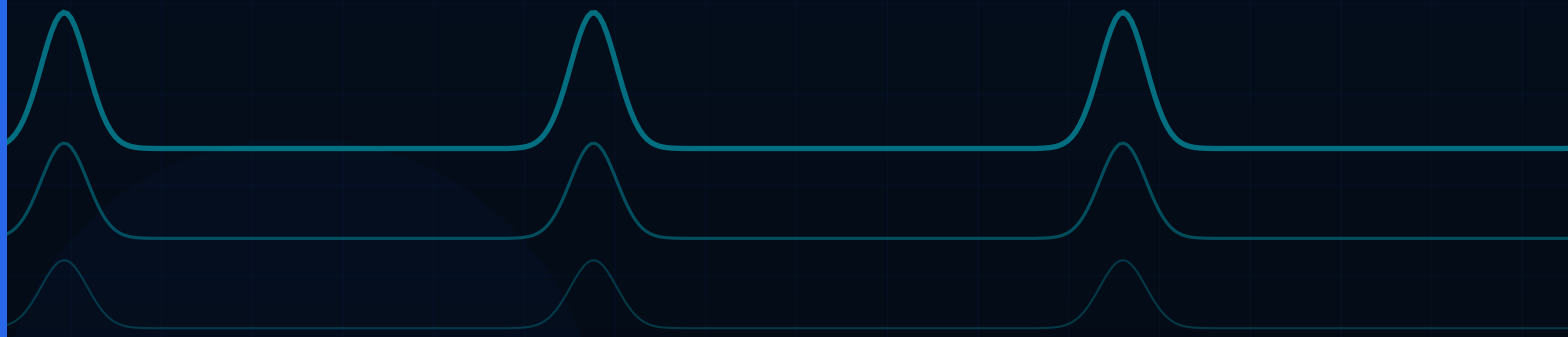
GNRH DECAPEPTIDE · PITUITARY STIMULANT · HPG AXIS

GONADORELIN

Fertility · Testosterone · Hormonal Integrity

Synthetic GnRH — the pulsatile hypothalamic signal that drives the entire reproductive hormone cascade from source.

10	GnRH	FDA	~2-4min
Amino Acids	Identical	Approved	Half-life



What is Gonadorelin?

A synthetic decapeptide identical to endogenous GnRH — the master HPG axis trigger

Gonadorelin is a synthetic decapeptide with an amino acid sequence identical to endogenous gonadotropin-releasing hormone (GnRH), the hypothalamic neuropeptide that initiates the reproductive hormone cascade.

Naturally secreted in precisely timed pulses every 60–120 minutes from the hypothalamus, GnRH binds pituitary GnRH receptors to trigger the release of both luteinising hormone (LH) and follicle-stimulating hormone (FSH).

Synthetic gonadorelin replicates this endogenous pulsatile signal with pharmacological precision — making it uniquely valuable for diagnosing and treating disorders of HPG axis function without suppressing the natural axis.

DECAPEPTIDE SEQUENCE

pGlu-His-Trp-Ser-Tyr-Gly-Leu-Arg-Pro-Gly-NH2

MW: 1182.31 g/mol | Formula: C55H75N17O13

Unlike continuous GnRH agonists that downregulate receptors, pulsatile gonadorelin maintains or restores pituitary sensitivity.

This distinction is critical: continuous GnRH agonists (leuprolide, buserelin) paradoxically suppress gonadotropin release through receptor desensitisation. Pulsatile gonadorelin preserves and stimulates the axis.

Its primary clinical applications include: diagnosing hypothalamic versus pituitary causes of hypogonadism, stimulating ovulation in hypothalamic amenorrhoea, preserving testicular function during testosterone therapy, and treating idiopathic hypogonadotropic hypogonadism.

Gonadorelin was the first synthetic peptide hormone approved for clinical use and remains the gold standard for HPG axis stimulation testing.

PULSATILE LH SECRETION PATTERN

Key Benefits

HPG axis restoration with precision hormonal signalling

Pituitary LH/FSH Stimulation

Gonadorelin drives reliable, dose-dependent LH and FSH release from the anterior pituitary — restoring the gonadotropin pulses that control testicular and ovarian function.

Axis-Preserving TRT Adjunct

Unlike hCG, gonadorelin stimulates both LH and FSH simultaneously, preserving testicular volume, intratesticular testosterone production, and spermatogenesis during testosterone replacement therapy.

Fertility Induction

In women with hypothalamic amenorrhoea and men with hypogonadotropic hypogonadism, pulsatile gonadorelin via pump reliably induces ovulation and spermatogenesis with superior outcomes to gonadotropin injections.

Diagnostic Gold Standard

The gonadorelin stimulation test definitively distinguishes hypothalamic from pituitary causes of hypogonadism — an irreplaceable clinical tool for precise diagnosis of the HPG axis.

Testosterone Preservation

During testosterone therapy, gonadorelin maintains hypothalamic-pituitary signalling to the testes, preserving testicular size and the residual endogenous testosterone production that exogenous T alone suppresses.

No Receptor Downregulation

Because gonadorelin is administered as discrete pulses rather than continuous infusion, pituitary GnRH receptors remain fully sensitive — unlike GnRH agonist analogues that cause chemical castration.

Gonadorelin vs. GnRH Agonists vs. hCG vs. Clomiphene

	Gonadorelin	GnRH Ag.	hCG	Clomid
Axis preserved	●	●	●	●
Both LH & FSH	●	○	●	○
Pulsatile	●	○	○	○
FSH preserved	●	○	○	○
Fertility	●	○	●	●
Diagnostic use	●	○	○	○

Research & Dosing

From Nobel-linked discovery to FDA-approved reproductive medicine

1971

Nobel Prize Science

Roger Guillemin and Andrew Schally isolated and characterised GnRH, work that earned the 1977 Nobel Prize in Physiology or Medicine. Gonadorelin became the first synthetic version available for clinical use.

1982

FDA Approval

Gonadorelin (Factrel, Lutrepulse) received FDA approval for diagnosing hypogonadism and for inducing ovulation in hypothalamic amenorrhoea via pulsatile pump delivery — a unique approval pathway.

1990

Pulsatile Pump Protocols

Clinical trials established pulsatile subcutaneous and IV gonadorelin delivery via programmable pump as superior to gonadotropin injections for inducing spermatogenesis in azoospermic men.

2005

TRT Adjunct Protocols

Emerging evidence established gonadorelin's role in maintaining HPG axis function, testicular volume and fertility in men receiving testosterone replacement therapy.

2018

Axis Preservation Data

Comparative studies confirmed gonadorelin 100mcg SC twice weekly preserved intratesticular testosterone and testicular volume significantly better than hCG in TRT patients, with equivalent LH stimulation.

Dosing Guide

Route	SC injection / IV pump
Diagnostic dose	100 mcg single bolus
TRT adjunct	100 mcg twice weekly SC
Fertility (pump)	2.5-10 mcg per pulse
Pump interval	60-90 minute cycles
Onset	5-10 minutes
Half-life	2-4 minutes (native)
Duration	60-90 min LH rise

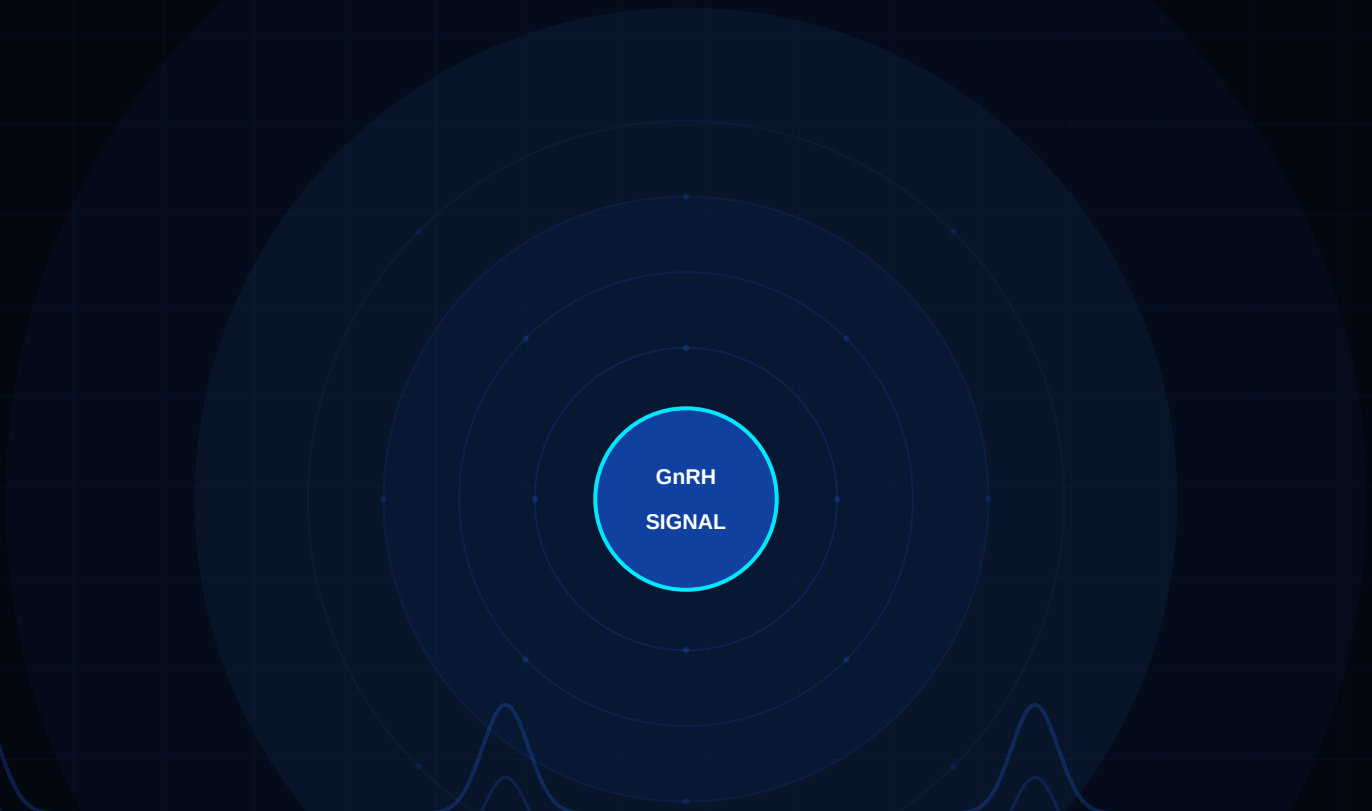
Stacks Well With

Testosterone · hCG · FSH · Clomiphene · Anas

For research use only. Gonadorelin is FDA-approved for specific indications. Physician supervision required for all uses.

Precision Hormonal Signalling.

Gonadorelin doesn't replace your hormonal system — it speaks its language. A single synthetic decapeptide that reactivates the entire HPG axis from the source, with the precision your biology demands.



RESTORE
from the source
HPG axis function

PRESERVE
& natural T production
Testicular function

DIAGNOSE
differential diagnosis
Definitive HPG axis

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