Tesamorelin Peptide

Tesamorelin is a chemically altered growth hormone-releasing hormone (GHRH) analog. This peptide is a trans-3-hexanoic acid version of natural GHRH. It has been researched for its potential to enhance peripheral nerve regeneration and improve mild cognitive impairment (MCI), the precursor to dementia. Tesamorelin appears to mediate the positive influence of GHRH and other GHRH analogs such as GRF (1-29), CJC-1295, and [sermorelin](https://biotechpeptides.com/product/sermorelin-5mg/%22%20%5Ct%20%22_blank). The trans-3-hexanoic acid modification may increase its blood plasma stability and half-life. Both Tesamorelin and CJC-1295 appear to maintain the physiological activity of GHRH, without disrupting the physiological rhythm of GH release.

Specifications

**MOLECULAR FORMULA:** C221H366N72O67S

**MOLECULAR WEIGHT:** 5135.77 g/mol

**SEQUENCE:** trans-hexenoyl-acid-Tyr-Ala-Asp-Ala-Ile-Phe-Thr-AsnSer-Tyr-Arg-Lys-Val-Leu-Gly-Gln-Leu-Ser-Ala-Arg-Lys-Leu-LeuGln-Asp-Ile-Met-Ser-Arg-GlnGln-Gly-Glu-Ser-Asn-Gln-Glu-Arg-Gly-Ala-Arg-Ala-Arg-Leu

Tesamorelin Research

**TESAMORELIN AND GROWTH HORMONE DEFICIENCY, HIV**
Highly active antiretroviral therapy (HAART) may trigger endocrine and metabolic disorders, including growth hormone (GH) deficiency. In cases of HIV infection, the pituitary gland function may be altered, inducing a general growth hormone deficiency in one-third of research models used to study the impacts of HAART.[1] Tesamorelin has been employed in research to measure its potential impact in supplementing growth hormone deficiency by inducing natural hormone production.

**TESAMORELIN AND CARDIAC DISEASE**
Adiposity and antiretroviral compounds may introduce risk of developing cardiovascular disease (CVD). Tesamorelin studies posit that the peptide may reduce lipodystrophy and triglyceride, total cholesterol, and non-HDL-C in research models of HIV.[2] Ectopic fat deposition is involved in inflammation, which may increase the risk of CVD. Adipose tissue deposition in visceral organs, epicardium, and liver may also increase CVD risk. The peptide may potentially decrease inflammatory response through the control of excess adiposity.[3] The researchers note that *“[HIV cases] receiving tesamorelin with ≥8% reduction in VAT have significantly improved triglyceride levels, adiponectin levels, and preservation of glucose homeostasis over 52 weeks.”*

**TESAMORELIN AND LYPODYSTROPHY**
Tesamorelin is principally researched within the context of HIV-associated lipodystrophy, which is considered to be caused by viral infection and possible adverse consequences of certain antiretroviral procedures. The peptide appeared to reduce adiposity by up to 20% in research models in one study.[4] The researchers noted that *“The odds of response of VAT ‹140 cm2 was 3.9 times greater for tesamorelin-treated [cases] than … placebo.”*

**TESAMORELIN AND PERIPHERAL NERVE DAMAGE**
Peripheral nerve damage may potentially trigger debilitating motor and sensory challenges. Research in intervention of such damage is limited, as nerve cells present a challenge to regenerate. Studies suggest that growth hormone manipulation might improve peripheral nerve injury and increase both rate and extent of repair.[5] Tesamorelin is being actively researched in this area for its potential for inducing growth hormone release.

**TESAMORELIN AND NEURODEGENERATIVE ISSUES**
GHRH analogs, including Tesamorelin, have been researched for their potential to improve cognitive ability in research models of dementia. A randomized, double-blind, placebo-controlled study was conducted with a large cohort over a period of 20 weeks at The University of Washington School of Medicine. The study observed that Tesamorelin and other GHRH analogs may influence dementia by increasing gamma-aminobutyric acid (GABA) in the brain and decreasing myo-insoitol (MI).[6] These findings suggest greater avenues of potential for Tesamorelin research.

References

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