## Testagen

# **Background**

Testagen is a bioregulatory short peptide associated with boosting testosterone levels via capabilities to cross nuclear and cell membranes and directly interact with DNA. The peptide seems to act on testosterone and thyroid function. The former is linked to the ability to modify protein expression while the latter is connected to stimulation of the anterior pituitary gland, and, by extension, regulation of thyroid-stimulating hormone (TSH) levels. The short peptide is considered a testosterone-boosting peptide and primary interest stems from abilities to travel across cellular and nuclear membranes.

#### Research

Active biologically short peptides like Testagen appear capable of entering the cell and nucleus and interacting with nucleic acid structures. <sup>1</sup> In other words, Testagen's enhancement of testosterone and thyroid function results from signaling capabilities to promote specific biochemical reactions. There is evidence to suggest a link between attenuated thyroid hormone levels and low-T and Testagen's positive effects on testosterone may be connected to an ability to normalize TSH. <sup>2</sup> Although researchers are confident in the mechanism of biological activity, there is limited human studies to-date to evaluate the effects of Testagen.

#### Conclusion

The mechanism of biological activity of Testagen suggests the short peptide penetrates cells and directly interacts with DNA. Testagen's primary targets are testosterone and thyroid normalization, however research is ongoing to better understand its ability to modify protein expression. Furthermore, given a relationship between thyroid and immune functions, Testagen may improve immunity by ability to regulate thyroid hormone levels.

### References

- <sup>1</sup> Fedoreyeva, L. I., Kireev, I. I., Khavinson, V. Kh., & Vanyushin, B. F. (2011). Penetration of short fluorescence-labeled peptides into the nucleus in Hela cells and in vitro specific interaction of the peptides with deoxyribooligonucleotides and DNA. *Biochemistry* (*Moscow*), 76(11), 1210–1219. https://doi.org/10.1134/s0006297911110022
- <sup>2</sup> Meikle AW. The interrelationships between thyroid dysfunction and hypogonadism in men and boys. Thyroid. 2004;14 Suppl 1:S17-25. doi: 10.1089/105072504323024552. PMID: 15142373.

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