

# THYMOSIN ALPHA 1

**MOLECULAR FORMULA**  $C_{129}H_{215}N_{33}O_{55}$

**MOLECULAR WEIGHT** 3108.3 g/mol

**SEQUENCE** Ac-Ser-Asp-Ala-Ala--Val-Asp-Thr-Ser-Ser-Glu-Ile-Thr-Thr-Lys-Asp-Leu-Lys-Glu-Lys-Lys-Glu-Val-Val-Glu-Glu-Ala-Glu-Asn-OH

## PROTOCOL



### CONTENT & POTENCY

**INJECTION:** 3000 mcg/mL subcutaneous injection provided in a 5 mL vial.



### SUGGESTED DOSAGE

**INJECTION:** Inject 0.15 mL subcutaneously daily

## DESCRIPTION

Thymosin Alpha 1 (TA1) is a peptide originally isolated from thymic tissue and is a compound believed to be responsible for restoring immune function in thymectomized mice. Thymosin Alpha 1 has been shown to have a pleiotropic mechanism of action and affects multiple immune cell subsets that are involved in immune suppression. Studies have demonstrated improvements in immune system cell subsets and the potential of TA1 for the treatment of a range of diseases. Thus, Thymosin Alpha 1, due to the immune stimulating effects exhibited by TA1, may have utility for the treatment of age or disease related immune suppression.

## CLINICAL RESEARCH



King R, Tuthill C. Immune Modulation with Thymosin Alpha 1 Treatment. *Vitam Horm.* 2016; 102:151-78. doi: 10.1016/bs.vh. April 3, 2016. Epub May 24, 2016.



Thymosin A1 (TA1), a thymosin-related 28-mer synthetic amino-terminal acetylated peptide, has gained increasing interest in recent years, due to its pleiotropy. The peptide has been used worldwide as an adjuvant or immunotherapeutic agent to treat disparate human diseases, including viral infections, immunodeficiencies, and malignancies. The peptide can enhance T cell, dendritic cell (DC), and antibody responses, modulate cytokine and chemokine production, and block steroid-induced apoptosis of thymocytes. Its central role in modulating DC function and activating multiple signaling pathways that contribute to different functions may offer a plausible explanation for its pleiotropic action. Additionally, the ability of TA1 to activate the indoleamine 2,3-dioxygenase enzyme—which confers immune tolerance during transplantation and restrains the vicious circle of chronic inflammation—has been a turning point, suggesting a potential, specific function in immunity. Accordingly, TA1 has recently been shown to promote immune reconstitution and improve survival of recipients of HLA-matched sibling T cell-depleted stem cell transplants in a phase I/II clinical trial. Thus, TA1 continues to live up to its promises.

"This statement has not been evaluated by the Food and Drug Administration. This product is not intended to diagnose, treat, cure, or prevent any disease."



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