

PRODUCT INFORMATION



Thymulin (acetate hydrate)

Item No. 33418

Formal Name: 5-oxo-L-prolyl-L-alanyl-L-lysyl-L-seryl-L-glutaminylglycylglycyl-L-seryl-L-asparagine, acetate, hydrate

Synonym: Thymic Factor

MF: C₃₃H₅₄N₁₂O₁₅ • XC₂H₄O₂ [XH₂O]

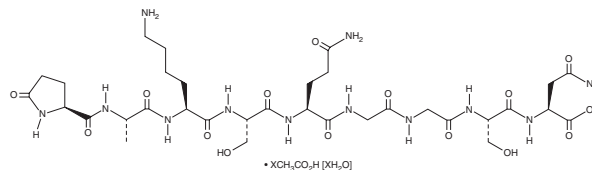
FW: 858.9

Purity: ≥95%

Supplied as: A crystalline solid

Storage: -20°C

Stability: ≥4 years



Information represents the product specifications. Batch specific analytical results are provided on each certificate of analysis.

Laboratory Procedures

Thymulin (acetate hydrate) is supplied as a crystalline solid. A stock solution may be made by dissolving the thymulin (acetate hydrate) in the solvent of choice, which should be purged with an inert gas. Thymulin (acetate hydrate) is slightly soluble in DMSO.

Further dilutions of the stock solution into aqueous buffers or isotonic saline should be made prior to performing biological experiments. Ensure that the residual amount of organic solvent is insignificant, since organic solvents may have physiological effects at low concentrations. Organic solvent-free aqueous solutions of thymulin (acetate hydrate) can be prepared by directly dissolving the crystalline solid in aqueous buffers. The solubility of thymulin (acetate hydrate) in PBS (pH 7.2) is approximately 10 mg/ml. We do not recommend storing the aqueous solution for more than one day.

Description

Thymulin is a zinc-dependent metalloprotein hormone with immunomodulatory, anti-inflammatory, and analgesic activities.^{1,2} It is primarily produced by thymic epithelial cells but can be produced by macrophages and fibroblasts when exposed to extracellular stressors, such as heat or oxidative stress.² Thymulin potentiates mitogen-induced proliferation of IL-2 receptor-positive mature T cells.³ It reduces pro-inflammatory cytokine production in rodent models of LPS- or endotoxin-induced systemic inflammation, as well as prevents myocardial inflammation in a mouse model of encephalomyocarditis virus-induced myocarditis and suppresses autoantibody production in a mouse model of reovirus-induced thyroiditis.^{4,5} Thymulin (0.1, 0.5, and 1 µg, i.c.v.) prevents endotoxin-induced hyperalgesia in rats.⁵

References

1. Bach, J.-F. and Dardenne, M. Thymulin, a zinc-dependent hormone. *Med. Oncol. Tumor Pharmacother.* **6(1)**, 25-29 (1989).
2. Lunin, S.M., Khrenov, M.O., Glushkova, O.V., *et al.* Extrathymic production of thymulin induced by oxidative stress, heat shock, apoptosis, or necrosis. *Int. J. Immunopathol. Pharmacol.* **30(1)**, 58-69 (2017).
3. Hadden, J.W. Thymic endocrinology. *Ann. N.Y. Acad. Sci.* **840(1)**, 352-358 (1998).
4. Santos, M.A.M., Henriques-Coelho, T., and Leite-Moreira, A. Immunomodulatory role of thymulin in lung diseases. *Expert Opin. Ther. Targets* **14(2)**, 131-141 (2010).
5. Safieh-Garabedian, B., Ochoa-Chaar, C.I., Poole, S., *et al.* Thymulin reverses inflammatory hyperalgesia and modulates the increased concentration of proinflammatory cytokines induced by i.c.v. endotoxin injection. *Neuroscience* **121(4)**, 865-873 (2003).

WARNING

THIS PRODUCT IS FOR RESEARCH ONLY - NOT FOR HUMAN OR VETERINARY DIAGNOSTIC OR THERAPEUTIC USE.

SAFETY DATA

This material should be considered hazardous until further information becomes available. Do not ingest, inhale, get in eyes, on skin, or on clothing. Wash thoroughly after handling. Before use, the user must review the complete Safety Data Sheet, which has been sent via email to your institution.

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