

Product Data Sheet

Cat # RP-1479

Thymosin-a1

Size: 1 mg

Thymalfasin is a synthetic analogue of thymosin-alpha-1, a 28-amino acid protein derived from the precursor protein prothymosin-alpha. Exhibiting a variety of immunoregulating properties, thymosin-alpha-1 induces differentiation of murine T-cell precursors and human thymocytes and the terminal differentiation of functionally immature cord blood lymphocytes and induces production of IL-2, high affinity IL-2 receptors, and B-cell growth factors by peripheral blood mononuclear cells. T-helper and cytotoxic/suppressor T-cell populations are targets of thymosin activity. Thymosin-alpha-1 has been shown to increase the efficiency of antigen presentation by macrophages and to be an endogenous modulator of alpha-thrombin activity.

**Source:** Thymosin a<sub>1</sub> acetate, also known as thymalfasin has immunoregulatory properties enhancing immune functions. Thymosin a<sub>1</sub> has a molecular formula of C<sub>129</sub>H<sub>215</sub>N<sub>33</sub>O<sub>55</sub> a.a. sequence of 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 and having a Mw of 3108.32 Dalton. The protein (1 mg/ml) was lyophilized with no additives. Greater than 99.0% as determined by:(a) Analysis by RP-HPLC. (b) Analysis by SDS-PAGE.

**Applications and Suggested Dilutions:** It is recommended to reconstitute the lyophilized Thymosin a<sub>1</sub> in sterile 18MΩ-cm H<sub>2</sub>O not less than 100 µg/ml, which can then be further diluted to other aqueous solutions. Users must optimize the appropriate concentration and conditions for each assay.

**Storage and Stability:** Lyophilized Thymosin a<sub>1</sub> although stable at room temperature for 3 weeks, should be stored desiccated below -18°C. Upon reconstitution Thymalfasin should be stored at 4°C between 2-7 days and for future use below -18°C. For long term storage it is recommended to add a carrier protein (0.1% HSA or BSA). **Please prevent freeze-thaw cycles.** If supplied in powder then reconstitute it in 100 µl water for 1 mg/ml stock and store in liquid at 4°C for ~1 week or aliquots in suitable size and store at -20°C for long term storage.

**Usage:** This item is for LABORATORY RESEARCH USE ONLY. The product may not be used as drugs, agricultural or pesticidal products, food additives or household chemicals.

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Alpha Diagnostic Intl Inc., 6203 Woodlake Center Dr, S an Antonio, T X 7 8 24 4 , U S A;

India Contact:

**Life Technologies (India) Pvt. Ltd.**

306, Aggarwal City Mall, Opposite M2K Pitampura, Delhi – 110034 (INDIA). Ph: +91-11-42208000, 42208111, 42208222, Mobile: +91-9810521400 Fax: +91-11-42208444 Email: [customerservice@lifetechindia.com](mailto:customerservice@lifetechindia.com) Website: [www.lifetechindia.com](http://www.lifetechindia.com)