California Bioscience
83103 Avenue 48, Ste.1B #204
Coachella, CA 92236 USA

# Product Datasheet

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| **Product Name** | Thymosin β4 |
| **Cata No** | CB500723 |
| **Synonyms** | Thymosin beta-4, T beta 4, Fx , TB4X, PTMB4, TMSB4. |

## Introduction

Thymosin is a hormone secreted from the thymus. Its primary function is to stimulate the production of T cells, which are an important part of the immune system.

Thymosin also assists in the development of B cellsto plasma cellsto produce antibodies.

The predominant form of thymosin, thymosin β4, is a member of a highly conserved family of actinmonomer-sequestering proteins. β-thymosins are the primary regulators of unpolymerized actin, and are essential for maintaining the small cytoplasmicpool of free G-actinmonomersrequired for rapid filament elongation and allowing for the flux of monomers between the thymosin-bound pool and F-actin.

## Description

Thymosin $b_4$ is a 43 amino acid peptide which is regarded as the main intracellular G-actin sequestering peptide.It has a molecular weight of 4963.49 Da, and its molecular formula is: $C_{212}H_{350}N_{56}O_{78}S_1$ Extracellular Thymosin $b_4$ may contribute to physiological processes such as angiogenesis, wound healing, and regulation of inflammation.

Thymosin $b_4$ has an a.a. sequence of Ac-Ser-Asp-Lys-Pro-Asp-Met-Ala-Glu-Ile-Glu-Lys-Phe-Asp-Lys-Ser-Lys-Leu-Lys-Lys-Thr-Glu-Thr-Gln-Glu-Lys-Asn-Pro-Leu-Pro-Ser-Lys-Glu-Thr-Ile-Glu-Gln-Glu-Lys-Gln-Ala-Gly-Glu-Ser-OH.

## Physical Appearance

Sterile Filtered White lyophilized (freeze-dried) powder.

## Formulation

The protein (1 mg/ml) was lyophilized with no additives.

## Solubility

It is recommended to reconstitute the lyophilized Thymosin beta-4 in sterile 18MΩ-cm H2O not less than 100 µg/ml, which can then be further diluted to other aqueous solutions.

## Stability

Lyophilized Thymosin $b_4$ although stable at room temperature for 3 weeks, should be stored desiccated below -18℃. Upon reconstitution T beta 4 should be stored at 4℃ between 2-7 days and for future use below -18℃.

For long term storage it is recommended to add a carrier protein (0.1% HSA or BSA).

**Please prevent freeze-thaw cycles.**

## Purity

Greater than 98.0% as determined by:

(a) Analysis by RP-HPLC.

(b) Analysis by SDS-PAGE.

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