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Certificate of Analysis

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Product Name: **Thymosin β4** **Catalog No.: 3390** **Batch No.: 4**
CAS Number: 77591-33-4

1. PHYSICAL AND CHEMICAL PROPERTIES

Batch Molecular Formula:	$C_{212}H_{350}N_{56}O_{78}S$
Batch Molecular Weight:	4963.49
Physical Appearance:	White lyophilised solid
Net Peptide Content:	91%
Counter Ion:	Acetate
Solubility:	Soluble to 1 mg/ml in water
Storage:	Store at -20°C
Peptide Sequence:	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

2. ANALYTICAL DATA

HPLC:	Shows 97.1% purity
Mass Spectrum:	Consistent with structure

3. AMINO ACID ANALYSIS DATA

Amino Acid	Theoretical	Actual	Amino Acid	Theoretical	Actual
Ala	2.00	1.90	Lys	9.00	9.50
Arg			Met	1.00	0.70
Asx	4.00	4.30	Phe	1.00	0.80
Cys			Pro	3.00	2.50
Glx	11.00	11.60	Ser	4.00	3.40
Gly	1.00	0.90	Thr	3.00	2.50
His			Trp		
Ile	2.00	1.80	Tyr		
Leu	2.00	1.80	Val		

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CAS Number: 77591-33-4

Description:

Naturally occuring, potent regulator of actin polymerization present in human platelets at a concentration of 200 - 500 µM. Sequesters G-actin monomers in a 1:1 ratio (K_d = 0.7 - 1.0 µM) and allows rapid filament polymerization in the presence of profilin. Implicated in wound healing, induction of MMPs, chemotaxis, angiogenesis, inflammatory processes and tumor progression.

Physical and Chemical Properties:

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Batch Molecular Weight: 4963.49

Physical Appearance: White lyophilised solid

Peptide Sequence:

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

Storage: Store at -20°C

Solubility & Usage Info:

Soluble to 1 mg/ml in water

This product is supplied as a lyophilized solid and may be very hard to visualize. Solutions should be made by adding solvent directly to the vial. The vial should then be vortexed vigorously to ensure the product has completely dissolved.

Net Peptide Content: 91% (Remaining weight made up of counterions and residual water).

Counter Ion: Acetate

Stability and Solubility Advice:

Some solutions can be difficult to obtain and can be encouraged by rapid stirring, sonication or gentle warming (in a 45-60°C water bath).

Peptides in solution are much less stable than in lyophilized form. This is especially true for peptides whose sequences contain amino acids such Cys, Met,Trp, Asn, Gln, and N-terminal Glu.

Therefore we recommend storing peptides in solution for as short a time as possible. Avoid repeated freeze thaw cycles by dividing the peptide solution into aliquots and storing the aliquots at -20°C. Any portion of an aliquot unused after thawing should be discarded.

Peptides stored in solution can occasionally be susceptible to bacterial degradation. We recommend using sterile solutions or passing the peptide solution through a 0.2 µm filter to remove potential bacterial contamination whenever possible.

References:

Yu *et al* (1993) Thymosin β10 and thymosin β4 are both actin monomer sequestering proteins. J.Biol.Chem. ***268*** 502. PMID: 8416954.

Huff *et al* (2001) β-thymosins, small acidic peptides with multiple functions. Int.J.Biochem.Cell Biol. ***33*** 205. PMID: 11311852.

Smart *et al* (2007) Thymosin β4 and angiogenesis: modes of action and therapeutic potential. Angiogenesis ***10*** 229. PMID: 17632766.

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