



## Recombinant Human Thymosin-beta4

20150227BB



**FOR RESEARCH ONLY! NOT FOR HUMAN USE!**

<b>Cat.-no.:</b>	<b>100-428</b>
Size:	100 µg
Lot. No.:	According to product label

### Sequence

RMSDKPDMAE IEKFDKSKLK KTETQEKPL PSKETIEQEK QAGES

### Database References

<b>Protein RefSeq:</b>	NP_066932.1
<b>Uniprot ID:</b>	P62328
<b>mRNA RefSeq:</b>	NM_021109.3

## Scientific Background

<b>Gene-ID (NCBI):</b>	7114
<b>Synonyms:</b>	Hematopoietic system regulatory peptide, Seraspenide, TMSB4X, TMSB4

Thymosin-β4 is a small, actin-sequestering protein belonging to the thymosin-β family that is found at high concentrations within the spleen, thymus, and peritoneal macrophages, where it is most notably responsible for the organization of cytoskeletal structure. In mammalian tissues, this protein acts as a modulator for the polymerization/depolymerization of actin through the formation of a 1:1 complex with the monomer G (globular)-actin, and inhibits actin's polymerization to form F (filamentous) actin, which together with other proteins binds microfilaments to construct the cytoskeleton. Commonly found at significant quantities within the brain, lungs, liver, kidneys, testes, and heart, Thymosin-β4 has also been shown to be synthesized by cells unrelated to the reticuloendothelial system, such as myoblasts and fibroblasts, and expressed at irregular levels by several hemopoietic cell lines, malignant lymphoid cells and myeloma cells. In addition to regulating actin polymerization, research has also found Thymosin-β4 to stimulate the secretion of hypothalamic luteinizing hormone-releasing hormone and luteinizing hormone, inhibit the migration of peritoneal macrophages, induce phenotypic changes in T cell lines during early host defense mechanisms, and inhibit the progression of hematopoietic pluripotent stem cells into the s-phase. Recombinant Human Thymosin-β4 is a 5.2 kDa glycoprotein containing 45 amino acid residues.

## Product Specifications

<b>Expressed in</b>	E. coli
<b>Purity</b>	> 95% by SDS-PAGE & HPLC analyses
<b>Endotoxin level</b>	< 0.1 ng /µg of protein (<1EU/µg).
<b>Formulation</b>	lyophilized
<b>Length (aa):</b>	45
<b>MW:</b>	5.2 kDa

**Biological Activity:** Pretreatment of primary lung fibroblasts with recombinant Thymosin-β4, using a concentration of 0.5 - 10 µg/ml, produces a protective effect against hydrogen peroxide induced cell death.



**AVOID REPEATED FREEZE AND THAW CYCLES!**