Thymosin-β4, human recombinant

CATALOG #:	7216-10	10 µg
	7216-50	50 µg
ALTERNATE NAMES:	Tβ-4, Hematopoietic system regulatory peptide, Seraspenide, TMSB4X, TB4X, TMSB4	
SOURCE:	E. Coli	
PURITY:	≥ 95% by SDS-PAGE gel and HPLC analyses	
MOL. WEIGHT:	5.2 kDa	
ENDOTOXIN LEVEL:	< 0.1 ng/µg of protein (<1 EU/µg).	
FORM:	Lyophilized	
FORMULATION:	Sterile filtered through a 0.2 micron filter. Lyophilized with no additives	
STORAGE CONDITIONS:	Store at -20°C. After reconstitution, aliquot and store at -20°C to -80°C. Avoid repeated freezing and thawing cycles.	

RECONSTITUTION:
Centrifuge the vial prior to opening. Reconstitute in water to a concentration of 0.1-1.0 mg/ml. Do not vortex. This solution can be stored at 2-8°C for up to 1 week. For extended storage, it is recommended to further dilute in a buffer containing a carrier protein (example 0.1% BSA) and store in working aliquots at -20°C to -80°C.

DESCRIPTION:
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 reticulo-endothelial 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.

AMINO ACID SEQUENCE:
RMSDKPDMAE IEKFDKSKLK KTETQEKNPL PSKETIEQEK QAGES

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

RELATED PRODUCTS:

- Beta-Actin Antibody **(Cat. No. 3662-100)**
- Beta-Actin Blocking Peptide **(Cat. No. 3662BP-50)**
- Beta-Actin Antibody **(Cat. No. 3850-100)**
- Beta-Actin Blocking Peptide **(Cat. No. 3850BP-50)**
- Beta-Actin Antibody **(Cat. No. 3917-100)**
- Beta-Actin Blocking Peptide **(Cat. No. 3917BP-50)**
- Beta-Actin Antibody (Clone B11V08) **(Cat. No. 3598-100)**

FOR RESEARCH USE ONLY! Not to be used in humans.