

BPC-157 + Thymosin β -4 (Combined Preparation)

A two-component lyophilized research preparation combining the gastric pentadecapeptide BPC-157 with the principal G-actin sequestering protein Thymosin β -4 — engaging mechanistically distinct tissue-repair pathways spanning angiogenesis, growth factor signalling, and cytoskeletal remodelling.

CATALOG REFERENCE

BM-LY0-021

FORM FACTOR

Lyophilized vial

STRENGTH10 mg total (BPC-157 5 mg + Thymosin β -4 5 mg)**DATE OF ISSUE**

May 2026

This research preparation is a two-component lyophilized combination of **BPC-157** (Body Protective Compound 157, the pentadecapeptide derived from human gastric juice protein characterised by Sikiric and colleagues) and **Thymosin β -4** (the 43-residue G-actin sequestering protein originally isolated from bovine thymus by Low and Goldstein in 1981, supplied here as Thymosin Beta-4 with CAS 885340-08-9). The two compounds are co-lyophilized at 5 mg of each per 10 mg vial. The combination engages two mechanistically distinct tissue-repair pathways. BPC-157 has been characterised in preclinical preparations for effects on angiogenesis, granulation tissue formation, and growth factor pathway engagement through endothelial nitric oxide synthase upregulation and VEGFR2-related signalling. Thymosin β -4 is the principal G-actin sequestering protein in mammalian cells, regulating the cytoskeletal G-actin / F-actin equilibrium that drives cell migration and tissue remodelling. The combination is commonly assembled in regenerative-peptide research preparations as a multi-axis tissue-repair combination. **This monograph summarises published cellular pharmacology and preclinical findings for laboratory research reference only.**

01 Component Composition

COMPONENT A — BPC-157	5 mg · Pentadecapeptide GEPPPGKPADDAGLV · derived from human gastric juice protein · CAS 137525-51-0 · Sikiric and colleagues
COMPONENT B — THYMOSIN B-4	5 mg · 43-residue principal G-actin sequestering protein · CAS 885340-08-9 (the SKU-listed identifier for the supplied research-grade preparation; the parent 43-residue molecule is also referenced under CAS 77591-33-4) · Low and Goldstein 1981 characterisation
TOTAL MASS PER VIAL	10 mg lyophilized solid
FORM FACTOR	Lyophilized vial · sterile water reconstitution
PHYSICAL FORM	White lyophilized solid co-lyophilizate
ANALYTICAL SPECIFICATION	Component-level ≥ 95 % purity by HPLC (BIOMOD Labs internal release specification)

02 Rationale for Combined Composition

THE BPC-157 + THYMOSIN B-4 COMBINATION ENGAGES TWO MECHANISTICALLY DISTINCT TISSUE-REPAIR AXES.

BPC-157 is a pentadecapeptide originally identified as a fragment of the human gastric juice protein BPC. Preclinical work by Sikiric and colleagues from the early 1990s onward has characterised the molecule in rodent models of musculoskeletal injury, gastrointestinal injury, and vascular preparations, with reported effects attributed to endothelial nitric oxide synthase pathway engagement, VEGFR2-related signalling, and growth factor pathway modulation supporting angiogenesis and granulation tissue formation. **Thymosin β -4** is the principal G-actin sequestering protein in mammalian cells, present at intracellular concentrations of approximately 0.1–0.5 mM in essentially every nucleated cell type. The molecule binds monomeric G-actin in 1:1 stoichiometry through its central actin-binding domain, regulating the G-to-F-actin equilibrium that drives cytoskeletal remodelling required for cell migration. Beyond actin biology, full-length Thymosin β -4 exhibits additional pharmacology including Akt / mTOR signalling, VEGF pathway engagement, NF- κ B-related inflammation modulation, and TGF- β / collagen pathway effects in animal preparations.

03 Critical Chemistry-Handling Notes for the Combined Preparation

MULTI-COMPONENT HANDLING CONSIDERATIONS

Both components of this preparation are unusually handling-tolerant peptides. **BPC-157 is exceptionally stable** — published characterisation specifically notes the molecule's stability in the human gastric juice context. Neither component contains an essential disulfide bond. **Thymosin β -4 contains a single methionine at position 6** (oxidation-susceptible) and the N-terminus is acetylated in the native and synthetic forms; the N-terminal acetylation is functionally significant for the molecule's biology (related to the Ac-SDKP cleavage product) and is preserved in research-grade material. The molecule is intrinsically disordered with no rigid fold to disrupt during reconstitution.

04 Laboratory Handling, Reconstitution, and Storage

LYOPHILIZED SOLID STORAGE AT $-18\text{ }^{\circ}\text{C}$, DESICCATED. RECONSTITUTION IN STERILE WATER FOR INJECTION OR bacteriostatic water at neutral pH is standard practice. Reconstituted solutions held refrigerated $2\text{--}8\text{ }^{\circ}\text{C}$ for short-term work; aliquoted long-term storage at $-18\text{ }^{\circ}\text{C}$ with minimised freeze–thaw. The internal Met6 residue of Thymosin β -4 is oxidation-susceptible; air-exposure minimisation is recommended. Working concentrations are determined by the investigator's experimental design.

05 References

- 1 Sikiric P, Seiwerth S, Rucman R, Turkovic B, Rokotov DS, Brcic L, Sever M, Klicek R, Radic B, Drmic D, Ilic S, Kolenc D, Stambolija V, Zoricic Z, Vrcic H, Sebecic B. Stable gastric pentadecapeptide BPC 157: novel therapy in gastrointestinal tract. *Curr Pharm Des.* 2011;17(16):1612–1632. PMID: 21548867
- 2 Low TL, Hu SK, Goldstein AL. Complete amino acid sequence of bovine thymosin beta 4: a thymic hormone that induces terminal deoxynucleotidyl transferase activity in thymocyte populations. *Proc Natl Acad Sci USA.* 1981;78(2):1162–1166. PMID: 6940133
- 3 Goldstein AL, Hannappel E, Sosne G, Kleinman HK. Thymosin β 4: a multi-functional regenerative peptide. *Expert Opin Biol Ther.* 2012;12(1):37–51. PMID: 22074294
- 4 Crockford D, Turjman N, Allan C, Angel J. Thymosin beta4: structure, function, and biological properties supporting current and future clinical applications. *Ann N Y Acad Sci.* 2010;1194:179–189. PMID: 20536467

RESEARCH USE ONLY · NOT FOR HUMAN OR VETERINARY CONSUMPTION

BIOMOD Labs is a research chemical supplier. BIOMOD Labs is not a compounding pharmacy as defined under section 503A of the Federal Food, Drug, and Cosmetic Act, nor an outsourcing facility as defined under section 503B. The compounds described in this document have not been evaluated by the U.S. Food and Drug Administration. The statements in this monograph are not intended to diagnose, treat, cure, or prevent any disease. The material is supplied for laboratory and in-vitro experimental use only. Customers are responsible for compliance with all applicable local, state, and federal regulations governing the handling of research chemicals.