BIOMOD LABS · RESEARCH PEPTIDE CO.

RESEARCH COMPOUND MONOGRAPH · SERIES 1 · NO. SOF-002

BPC-157 Arginate + KPV + Vitamin E (Softgel Preparation)

A three-component enteric-coated SEDDS softgel preparation combining BPC-157 in the arginate salt form, the α-MSH-derived anti-inflammatory tripeptide KPV, and Vitamin E as a lipid-soluble antioxidant excipient — supplied in a frosted-white shell with pH > 5.5 enteric coating for proximal small intestine release.

CATALOG REFERENCE	FORM FACTOR	PACK SIZE	DATE OF ISSUE
BM-SOF-002	Enteric-coated softgel · pH > 5.5	60 capsules · 150 mL bottle	May 2026

*This research preparation is a three-component enteric-coated softgel formulation combining **BPC-157** (in the arginate salt form, conferring improved solubility relative to the acetate salt), **KPV** (the C-terminal tripeptide of α-melanocyte-stimulating hormone), and **Vitamin E** (as a lipid-soluble antioxidant excipient). The softgel employs a pH > 5.5 enteric coating, releasing the active components in the proximal small intestine while bypassing the gastric environment. The combination engages the angiogenic and tissue-repair pharmacology of BPC-157 with the anti-inflammatory chemistry of KPV in a SEDDS lipid-based vehicle. **This monograph summarises published cellular pharmacology and preclinical findings for laboratory research reference only.***

01 Component Composition

COMPONENT A — BPC-157 ARGINATE	750 µg · Pentadecapeptide GEPPPGKPADDAGLV in arginate salt form · CAS 137525-51-0 · improved aqueous solubility vs. acetate salt
COMPONENT B — KPV	1 mg · Lys-Pro-Val tripeptide · CAS 67727-97-3 · α-MSH(11-13) C-terminal anti-inflammatory pharmacophore
COMPONENT C — VITAMIN E	5 mg · α-tocopherol antioxidant excipient supporting SEDDS oxidative stability
PACK SIZE	60 softgels per 150 mL bottle
SHELL	Frosted white softgel
ENTERIC COATING	pH > 5.5 trigger — releases contents in proximal small intestine
VEHICLE	SEDDS lipid-based fill
ANALYTICAL SPECIFICATION	Component-level peptide ≥ 95 % purity by HPLC; Vitamin E ≥ 95 %; content uniformity per softgel verified to USP standards

02 Rationale for Combined Composition

The three-component combination engages complementary tissue-repair and anti-inflammatory axes. **BPC-157** contributes angiogenesis and growth-factor pathway engagement; the arginate salt form (BPC-157 ion-paired with L-arginine) confers improved aqueous solubility compared with the acetate salt that is more commonly available in research supply chains. **KPV** contributes anti-inflammatory activity through both partial MC1R engagement and receptor-independent IL-1β-pathway interaction; the molecule is additionally a PepT1 transporter substrate in intestinal epithelium, supporting uptake from the gut lumen after enteric-coat dissolution. **Vitamin E** (α-tocopherol) functions as a lipid-soluble antioxidant excipient supporting the oxidative stability of the SEDDS lipid vehicle and protecting the peptide actives from oxidative degradation during shelf life.

03 Critical Chemistry-Handling Notes

MULTI-COMPONENT HANDLING CONSIDERATIONS

Both peptide components are relatively handling-tolerant. BPC-157 is exceptionally stable. KPV is among the smallest peptides in the BIOMOD catalog and lacks oxidation- or photo-sensitive residues. **The arginate salt form of BPC-157** is selected specifically for SEDDS softgel formulation — the L-arginine ion-pairing improves aqueous solubility and supports peptide dissolution upon enteric-coat dissolution and SEDDS emulsion formation. The pH > 5.5 enteric coat is selected to release contents in the proximal small intestine, bypassing the gastric environment.

F Softgel Formulation Considerations

SEDDS-CLASS SOFTGEL CHEMISTRY

The softgel form factor employs a self-emulsifying drug delivery system (SEDDS) lipid-based vehicle inside a gelatin or modified-gelatin shell. SEDDS formulations consist of isotropic mixtures of oils, surfactants, co-surfactants, and the active compound, which spontaneously form fine oil-in-water emulsions upon contact with aqueous gastrointestinal fluids. This formulation strategy is particularly useful for poorly water-soluble actives, supporting dissolution and absorption from the gastrointestinal lumen. Key softgel-formulation considerations are (a) **shell composition** — gelatin shells are sensitive to moisture and temperature; modified-gelatin and plant-based shell alternatives are sometimes used; (b) **enteric coating** — pH-dependent polymer coatings (e.g., methacrylic acid copolymers) delay capsule disintegration until passage through the acidic stomach, releasing the contents in the more neutral environment of the small intestine; (c) **shell colour** — opacifiers and colourants protect light-sensitive actives and provide product identification; (d) **fill volume** — typical softgel fill volumes range from 0.3 to 1.5 mL per capsule, with corresponding shell sizes selected for the formulation.

04 Laboratory Handling and Storage

Sealed softgels held at controlled room temperature (15–25 °C), protected from moisture and direct light. The enteric coating is sensitive to mechanical damage; intact softgels should be preserved until use. Working quantities are determined by the investigator's experimental design.

05 References

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4. Pouton CW. Lipid formulations for oral administration of drugs: non-emulsifying, self-emulsifying and 'self-microemulsifying' drug delivery systems. *Eur J Pharm Sci.* 2000;11(Suppl 2):S93–S98. PMID: 11033431

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