KPV/GHK-Cu/BPC-157/TB-500 — Research Summary

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1. What It Is

KPV/GHK-Cu/BPC-157/TB-500 is a four-peptide research blend combining GHK-Cu, BPC-157, and TB-500 with **KPV** added, aimed at layering in KPV's anti-inflammatory research profile alongside the other three peptides' tissue-repair focus. As with other blends, exact ratios vary by supplier; confirm the specific split on your product's COA.

The four components:

Component	Class	Structure
KPV	Anti-inflammatory tripeptide	Lys-Pro-Val (K-P-V) — the C-terminal fragment (residues 11-13) of alpha-melanocyte-stimulating hormone (α-MSH); MW 342.43 g/mol, CAS 67727-97-3
GHK-Cu	Copper-binding tripeptide	Glycyl-L-histidyl-L-lysine (GHK) complexed with a Cu(II) ion; naturally occurring
BPC-157	Pentadecapeptide (gastric-derived)	15-amino-acid synthetic fragment (GEPPPGKPADDAGLV); MW ~1,419 Da
TB-500	Actin-binding synthetic fragment	Commonly a 17-amino-acid fragment of thymosin beta-4 (Ac-LKKTETQ-OH)

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2. Reported Effects in Research Literature

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No published human data exists for this four-component blend as a combined formulation. Component-level evidence (GHK-Cu, BPC-157, TB-500 summarized briefly here — see the dedicated GLOW blend and standalone research summaries for fuller detail):

- **GHK-Cu:** The most clinically documented component — accelerated wound healing, anti-inflammatory and antioxidant activity, and human RCT-level data on dermal collagen density and hair growth (vs. minoxidil).
- **BPC-157:** Extensive preclinical GI/soft-tissue repair evidence, but very thin published human trial data (no completed RCTs as of 2026).
- **TB-500:** Preclinical wound-healing and cytoskeletal-remodeling evidence; most human trial data pertains to full-length thymosin beta-4, not the shorter TB-500 fragment specifically.
- **KPV (the added component):** A tripeptide fragment of α-MSH, first identified as retaining anti-inflammatory activity independent of melanocortin receptor binding by Hiltz and Lipton (1989). Preclinical research reports KPV inhibits NF-κB signaling (a master regulator of inflammatory gene expression) and reduces pro-inflammatory cytokine production (TNF-α, IL-1β, IL-6), with efficacy

demonstrated in animal models of inflammatory bowel disease, contact dermatitis, and bronchial inflammation. Notably, KPV retains α-MSH's anti-inflammatory activity while lacking the pigmentation and appetite effects of the parent hormone. KPV is orally active in preclinical models, generating research interest in gut-inflammation applications specifically. As of a July 2026 regulatory review cited in industry sources, KPV was named alongside BPC-157, TB-500, and MOTS-c among peptides under FDA review for inflammation/wound-related research use — check current status before referencing in customer materials.

PCAC update (July 23, 2026): The FDA's Pharmacy Compounding Advisory Committee voted to recommend KPV, BPC-157, and TB-500 for inclusion on the 503A Bulk Drug Substances List (8–6, one abstention, for each), overriding FDA staff's own recommendation against inclusion. GHK-Cu was not part of this review; a separate PCAC session on GHK-Cu (non-injectable routes) is expected before the end of February 2027. This is a non-binding advisory recommendation only — it does not add these substances to the list, does not authorize compounding, and does not change RUO sale status for this blend. A formal rulemaking process, expected to take 8–12 months, would be required before any actual change takes effect.

Research limitations to note: - KPV, like BPC-157, has essentially no published controlled human trial data — its evidence base is preclinical (in vitro and animal models). - No combined-formulation studies exist for any subset of these four peptides together, let alone all four. - None of the four components is FDA-approved for any indication.

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3. Clinical & Preclinical Study References

GHK-Cu: - Pickart L, Margolina A. "Regenerative and Protective Actions of the GHK-Cu Peptide in the Light of the New Gene Data." *Int J Mol Sci*. 2018;19(7):1987. PMID: 29986520

BPC-157: - Sikiric P, et al. "Stable gastric pentadecapeptide BPC 157: novel therapy in gastrointestinal tract." *Curr Pharm Des*. 2011;17(16):1612-32. PMID: 21548867

TB-500: - Ehrlich HP, Hazard SW 3rd. "Thymosin beta4 enhances repair by organizing connective tissue…" *Ann N Y Acad Sci*. 2010;1194:118-24. PMID: 20536458

KPV: - Kannengiesser K, Maaser C, et al. "Alpha-MSH and its tripeptide fragment KPV in inflammatory bowel disease." *Gut*. 2008. PMID: 19124017 - Catania A, Gatti S, et al. "ACTH and melanocortin peptides: structure and therapeutic implications." *Pharmacol Rev*. 2004. PMID: 16460689 - Hiltz ME, Lipton JM. "Anti-inflammatory activity of a COOH-terminal fragment of the neuropeptide alpha-MSH." *FASEB J*. 1989. (Foundational discovery paper.)

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4. Reconstitution Process

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1. **Materials needed:** lyophilized (freeze-dried) blend powder, bacteriostatic water, alcohol swabs, syringe with needle.
2. **Bring the vial to room temperature** before reconstitution.
3. **Sanitize** the rubber stopper of both vials with an alcohol swab.
4. **Add the water slowly** down the *inside wall* of the vial, to reduce shear/foaming.
5. **Do not shake.** Gently swirl or roll between palms until fully dissolved. GHK-Cu's copper content gives the solution a light blue tint — expected, not a sign of contamination. With four components in one vial, thorough mixing is especially important to avoid concentration gradients between draws.
6. **Inspect the solution** — should be a clear, light blue solution free of particulates.
7. **Label the vial** with the blend name, reconstitution date, and concentration.
8. **Storage:** refrigerate (2–8°C), or freeze at ≤ –20°C for longer-term aliquot storage; avoid repeated freeze-thaw cycles.

Reference: Bacteriostatic Water Volume by Vial Size

The order sheet lists this blend at an 80mg total fill — larger than the standard 5mg/10mg reference sizes. Reference table below covers both the standard sizes and a scaled 80mg example.

Vial Size (Total Blend)	BAC Water Added	Resulting Total Concentration
5 mg	1 mL	5 mg/mL
5 mg	2 mL	2.5 mg/mL
10 mg	1 mL	10 mg/mL
10 mg	2 mL	5 mg/mL
10 mg	4 mL	2.5 mg/mL
80 mg	2 mL	40 mg/mL
80 mg	4 mL	20 mg/mL
80 mg	8 mL	10 mg/mL

Notes: Higher water volume = more dilute solution; lower volume = more concentrated. Follow supplier COA guidance on the specific four-component ratio and fill weight for your lot. Always use bacteriostatic water (0.9% benzyl alcohol) for multi-draw vials; sterile water without preservative should be discarded within 24 hours.

Document created: July 16, 2026. **Revision 1:** July 29, 2026. Regulatory status (FDA compounding lists, WADA lists) is actively shifting; re-verify against current sources before any customer-facing use.
