

GHK-Cu

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HK-Cu is a naturally occurring peptide-copper complex found in human blood, saliva, and urine. It is being studied primarily for wound healing, skin regeneration, and anti-aging applications, and is available in topical formulations.

What Is GHK-Cu?

GHK-Cu (Copper Peptide) is a widely discussed research peptide within studies of skin quality, tissue processes and cell communication. The peptide consists of the GHK tripeptide coupled with copper and is being studied in research settings for its role within natural repair mechanisms.

GHK-Cu occurs naturally in the human body and decreases with age. This is precisely why it is an interesting research object within studies on skin aging, regeneration and structural support of tissues.

Key Characteristics:

Naturally occurring – found in human plasma, saliva, and urine; declines with age (200 ng/mL in youth, dropping to 80 ng/mL by age 60)

Copper delivery – binds and delivers copper ions, which are essential cofactors for enzymes involved in tissue repair, including superoxide dismutase and lysyl oxidase

Collagen synthesis – stimulates production of collagen types I and III, decorin, elastin, and glycosaminoglycans

Wound healing – accelerates wound closure, attracts immune cells, and promotes angiogenesis (new blood vessel formation)

Anti-inflammatory – reduces inflammatory cytokines including TNF-alpha and IL-6

Gene modulation — studies show GHK-Cu affects expression of over 4,000 genes, resetting many toward a healthier expression profile associated with younger tissue

Dual routes — effective both systemically (injectable) and locally (topical) — one of the few peptides with established protocols for both

Standard Dosing Protocol

Important: The information below describes schedules used in research on GHK-Cu. It is provided for scientific and informational purposes and does not constitute a recommendation for individual use, medical advice or administration instructions. The research-grade GHK-Cu offered by PurePepHub is not a registered medicine.

Most people run GHK-Cu subQ (subcutaneous injection), though topical formulations exist and are commonly used for localized skin applications.

Typical injectable dosing:

Starting dose: 1 mg/day for the first week (tolerance check)

Maintenance: 1–2 mg/day

Upper end: Some protocols use up to 3 mg/day for injury recovery or aggressive anti-aging stacks

Injection site: Most people inject in the abdomen or upper thigh. For wound healing or localized tissue repair, injecting near the target area may improve local bioavailability.

Daily vs. cycled: GHK-Cu can be run daily without significant tolerance concerns at standard doses. Some protocols use 5 days on / 2 days off — this is optional, not required. Daily dosing tends to produce more consistent results.

Cycle length: 8–12 weeks is the standard cycle, followed by a 4–6 week break. This is a reasonable conservative approach. Some users run longer cycles without issues, but the break helps reset receptor sensitivity.

What to Expect Week-by-Week

Results don't show up overnight. Here's a realistic timeline:

Weeks 1–2: Body adjusting. Some users notice temporary skin dryness in the first week — this is common and clears up as collagen remodeling begins. Don't panic if your skin feels slightly different early on.

Weeks 3–5: First noticeable changes. Skin texture tends to improve — more elasticity, less roughness. Existing scars may begin to look less pronounced. Wound healing speed may become noticeably faster.

Weeks 6–8: More consistent improvements. Hair density and thickness is an area some users report improvement — GHK-Cu has clinical research around hair follicle regeneration. Collagen changes become more apparent.

Full cycle (8–12 weeks): The compound builds up systemic benefit over the full cycle. Don't judge results at week 3. The first 2–3 weeks are really the adjustment phase.

Common reconstitution scenarios clinicians use:

50 mg vial + 2.5 ml water → 20 mg/ml - 1 mg = 0.05 ml (5 units on a U-100 insulin syringe); 2 mg = 0.10 ml (10 units)

50 mg vial + 2 ml water → 25 mg/ml - 1 mg = 0.04 ml (4 units); 2 mg = 0.08 ml (8 units)

Safety and Side Effects

Safety Profile: GHK-Cu has demonstrated a favorable safety profile across decades of research. Topical formulations are widely used in over-the-counter cosmetics with minimal adverse effects. Injectable protocols are supported by animal studies and community experience, though formal human clinical trial data for injectable use is limited.

Side Effects

Mild and generally transient (reported by a minority of users):

Injection site irritation, mild redness, or minor swelling

Headache – occasionally reported, typically mild

Nausea – rare, usually transient

Contraindications

Active cancer or history of cancer – GHK-Cu promotes angiogenesis and tissue remodeling. While no studies have demonstrated tumor-promoting effects, the theoretical concern exists that enhanced angiogenesis could support tumor growth. Avoid use with active malignancies.

Wilson's disease or copper metabolism disorders – GHK-Cu delivers copper ions. Individuals with disorders of copper metabolism (Wilson's disease, copper toxicosis) should not use GHK-Cu in any form.

Pregnancy and breastfeeding – no safety data exists for GHK-Cu during pregnancy or nursing. Avoid use entirely.

Allergy to copper compounds – individuals with known copper sensitivity or allergy should avoid GHK-Cu.