

GHK-Cu

COLLAGEN & AESTHETIC PEPTIDE

MOLECULAR FORMULA $C_{28}H_{52}CuN_{12}O_8$

MOLECULAR WEIGHT 748.346 g/mol

SEQUENCE Gly-His-Lys(cu2+)

PROTOCOL



CONTENT & POTENCY

INJECTABLE: 10 mg/mL subcutaneous injection provided in a 5 mL vial.

TRANSDERMAL (SCALP): 5 mg/mL (0.5%) topical foam provided in a 50 mL foaming applicator.

TRANSDERMAL (FACIAL): 5 mg/mL (0.5%) facial cream provided in a 15 gm pump.



SUGGESTED DOSAGE

INJECTABLE: Inject 0.2 mL subcutaneously once daily.

TRANSDERMAL (SCALP): Apply 2-3 pumps to scalp once daily at night.

TRANSDERMAL (FACIAL): Apply 1-2 pumps to face and rub in at night.

DESCRIPTION

GHK-Cu is a naturally occurring copper complex that was first identified in human plasma, but has since been found in multiple locations such as saliva and urine. Copper peptides are small, naturally occurring protein fragments that have high affinity for copper ions, which evidence suggests are critical to normal body function. Clinical studies indicate that GHK-Cu has a variety of roles in the human body including, but not limited to, promoting activation of wound healing, attracting immune cells, antioxidant and anti-inflammatory effects, stimulating collagen and glycosaminoglycan synthesis in skin fibroblasts, and promoting blood vessel growth. There has been some clinical evidence that has shown that GHK-Cu acts as a feedback signal generated after tissue injury and it may act as a potent protector of tissue and anti-inflammatory agent possibly by reducing the oxidative damage that occurs post-tissue injury. Further, GHK-Cu has been found to be involved in signaling tissue remodeling by removing damaged/scarred tissue and generating healthy tissue. It has been shown in studies that GHK concentration decreases with age because the concentration of GHK-Cu in the body decreases with age which may result in an increase in inflammation, cancerous activity, and tissue destruction.

CLINICAL RESEARCH



Pickart L, Vasquez-Soltero JM, Margolina A.

GHK Peptide as a Natural Modulator of Multiple Cellular Pathways in Skin Regeneration. *Biomed Res Int* 2015;2015:648108. doi: 10.1155/2015/648108. Epub 2015 Jul 7.



GHK (glycyl-L-histidyl-L-lysine) is present in human plasma, saliva, and urine but declines with age. It is proposed that GHK functions as a complex with copper 2+ which accelerates wound healing and skin repair. GHK stimulates both synthesis and breakdown of collagen and glycosaminoglycans and modulates the activity of both metalloproteinases and their inhibitors. It stimulates collagen, dermatan sulfate, chondroitin sulfate, and the small proteoglycan, decorin. It also restores replicative vitality to fibroblasts after radiation therapy. The molecule attracts immune and endothelial cells to the site of an injury. It accelerates wound-healing of the skin, hair follicles, gastrointestinal tract, bony tissue, and foot pads of dogs. It also induces systemic wound healing in rats, mice, and pigs. In cosmetic products, it has been found to tighten loose skin and improve elasticity, skin density, and firmness, reduce fine lines and wrinkles, reduce photodamage, and hyperpigmentation, and increase keratinocyte proliferation. GHK has been proposed as a therapeutic agent for skin inflammation, chronic obstructive pulmonary disease, and metastatic colon cancer. It is capable of up- and downregulating at least 4,000 human genes, essentially resetting DNA to a healthier state. The present review revisits GHK's role in skin regeneration in the light of recent discoveries.

"This statement has not been evaluated by the Food and Drug Administration. This product is not intended to diagnose, treat, cure, or prevent any disease."



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