GHK-Cu

Glycyl-L-histidyl-L-lysine Copper Complex | Copper-Binding Signal Peptide

COMPOUND OVERVIEW

GHK-Cu is a naturally occurring copper-binding tripeptide that declines with age in human plasma. It functions as a pleiotropic signal peptide capable of modulating a broad range of gene expression related to tissue remodelling, antioxidant defence, and inflammation. Its characteristic deep blue colour upon reconstitution results from the copper coordination complex.

MECHANISM OF ACTION

GHK-Cu activates dermal fibroblasts to increase production of collagen, elastin, and glycosaminoglycans. Gene expression analysis suggests modulation of over 3,000 human genes, including upregulation of antioxidant pathways and downregulation of inflammatory mediators. It also promotes stem cell activation in hair follicle and skin repair models.

RESEARCH APPLICATIONS

- Dermal fibroblast activation and collagen synthesis studies
- Broad gene expression modulation research
- Hair follicle stem cell and dermal repair research
- Wound healing and dermal barrier integrity models

EVIDENCE STATUS & KNOWN LIMITATIONS

> ***Evidence Status:*** *GHK-Cu has a well-documented in vitro and animal model literature base. Topical application studies show dermal effects. The gene expression breadth cited in some literature is based primarily on in vitro data; in vivo validation at physiological concentrations is ongoing. Systemic injectable research in humans is limited.*

ANALYTICAL & STORAGE DATA

PURITY	**>99.8% by HPLC/MS**	PHYSICAL FORM	**Lyophilised Powder**
STORAGE	**2-8 C. UV sensitive.**	COLOUR ON RECON.	**Deep Royal Blue**
RECONSTITUTION	**Bacteriostatic Water (USP)**	BATCH DOCS	**Available on Request**

RECONSTITUTION NOTE

Introduce reconstitution solvent gently against the interior vial wall. The solution will develop a characteristic deep blue colour as the copper peptide hydrates. Allow complete dissolution without agitation. Protect from UV light at all stages. Refrigerate immediately.

REGULATORY CLASSIFICATION: All BioUnfolding compounds are strictly intended for laboratory evaluation and in-vitro analysis. These materials are not intended for human consumption, veterinary use, or therapeutic application. Researchers are solely responsible for compliance with applicable local regulations including SAHPRA guidelines.

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