Technical Information

GHK-Cu

INCI Name Copper tripeptide-1
CAS 89030-95-5
Sequence Gly-His-Lys.Cu.xHAc

Specifications:

<table>
<thead>
<tr>
<th>Property</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Appearance</strong></td>
<td>Blue Powder</td>
</tr>
<tr>
<td><strong>SKU No.</strong></td>
<td>AP103002</td>
</tr>
<tr>
<td><strong>Purity (by HPLC)</strong></td>
<td>&gt; 99%</td>
</tr>
<tr>
<td><strong>Water (k.F)</strong></td>
<td>&lt; 5%</td>
</tr>
<tr>
<td><strong>Molecular Formula</strong></td>
<td>C14H23CuN6O4</td>
</tr>
<tr>
<td><strong>Storage</strong></td>
<td>2 ~ 8°C, dry and dark place</td>
</tr>
<tr>
<td><strong>Package</strong></td>
<td>Plastic bottles or glass bottles of varied sized, or customized packages based on special requests</td>
</tr>
</tbody>
</table>

Properties and benefits
GHK-Cu exhibits a broad range of anti-aging, reparative, and protective actions. It can increase production of key skin proteins such as collagen as well as other important components of dermal matrix. GHK-Cu modulates the skin remodeling process, being able to stimulate both breakdown and synthesis of dermal matrix components.

This product is pure powder with purity >99%. No excipients, preservatives, anti-oxidants present, or used during the manufacturing process. It is 100% synthesized in laboratory so not involved with plant, vegetable, or marine. It is neither palm derived nor sustainably sourced.

Cosmetic Applications:
1. Slowing down aging, reducing wrinkles
2. Reducing inflammation and redness and other reparative formulations
3. Sun-protective formulations
4. Stimulation of Hair Growth

Tips for formulation:
1. Avoid strong oxidation ingredients
2. Avoid ingredients that can form a complex with Cu ion. For example, carnosine has a similar structure to GHK thus so it may compete with Copper ion and change the solution’s color to purple. Another example is
that EDTA sometimes is used in the formula to remove trace amount heavy metal ion. It may grab copper ion from GHK-Cu and change the solution's colour to green.

3. GHK-Cu is very water soluble (1g GHK-Cu can be easily solved in 5ml water). We suggest taking it as the final step to add GHK-Cu to the solution, which means adding all other ingredients (including preservatives) before adding GHK-Cu. Because too low or too high pH may cause a breakdown of GHK-Cu, and an acid base has more possibility of changing the solution’s color, the pH should be adjusted close to 7 (neutral) before having GHK-Cu added in the final step. All process should be done under 40°C.

4. When color change happens, you may want to figure out the responsible ingredient (usually the ingredient is acid-based). Try to mix GHK-Cu with each ingredient and observe the reaction, then consider having this responsible ingredient adjusted or changed.

Additional Information:

FACIAL STUDIES: Copper peptide GHK-Cu is widely used in anti-aging cosmetics (INCI name: Copper tripeptide-1). Several controlled facial studies confirmed anti-aging, firming and anti-wrinkle activity of copper peptide GHK-Cu. Abdulghani et al. established that facial cream containing GHK-Cu increased collagen in photoaged skin of 20 female volunteers, performing better than vitamin C and retinoic acid. Leyden et al. conducted 12 weeks facial study of GHK-Cu containing face and eye cream, reporting significant improvement of skin laxity, clarity and appearance, reduced fine lines and the depths of wrinkles and increased skin density and thickness comparing to placebo. GHK-Cu eye cream performed better than vitamin K cream. Finkley et al. conducted 12 week facial study on 67 women and reported that GHK-Cu cream applied twice daily improved aged skin appearance, increased thickness, reduced wrinkles and strongly stimulated dermal keratinocyte proliferation as determined by histological analysis of biopsies. The same study found copper peptide GHK-Cu to be non-toxic and non-irritating.

HAIR GROWTH BENEFITS: Copper peptide GHK-Cu and its analogues were found to strongly stimulate hair growth. The efficiency of synthetic analog of GHK-Cu was similar to that of 5% minoxidil.


Applications Policy

The product from Essential Chem Inc., is not intended for human ingestion or for use in products that may be ingested. It must not be used for in vitro and in vivo diagnostic purposes, in foods, drugs, and medical devices for humans or animals. Essential Chem Inc. expects customers to comply with the rules, regulations and patent laws. Dealing with the company’s products or services does not grant license or permission to work under or to infringe any patent(s).

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