# PRODUCT INFORMATION

## GHK

*Item No. 27168*

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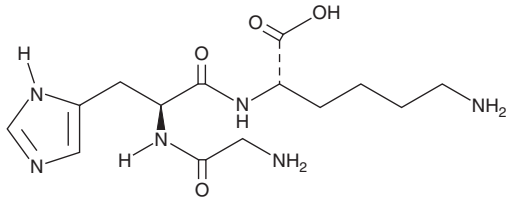
| **CAS Registry No.:** | 49557-75-7 |
| **Formal Name:** | glycyl-L-histidyl-L-lysine |
| **Synonyms:** | Gly-His-Lys, NSC 379527 |
| **MF:** | $C_{14}H_{24}N_6O_4$ |
| **FW:** | 340.4 |
| **Purity:** | ≥95% |
| **Supplied as:** | A solid |
| **Storage:** | -20°C |
| **Stability:** | ≥4 years |



*Information represents the product specifications. Batch specific analytical results are provided on each certificate of analysis.*

### Laboratory Procedures

GHK is supplied as a solid. A stock solution may be made by dissolving the GHK in the solvent of choice, which should be purged with an inert gas. GHK is soluble in the organic solvent DMSO at a concentration of approximately 2.5 mg/ml.

Further dilutions of the stock solution into aqueous buffers or isotonic saline should be made prior to performing biological experiments. Ensure that the residual amount of organic solvent is insignificant, since organic solvents may have physiological effects at low concentrations. Organic solvent-free aqueous solutions of GHK can be prepared by directly dissolving the solid in aqueous buffers. The solubility of GHK in PBS, pH 7.2, is approximately 10 mg/ml. We do not recommend storing the aqueous solution for more than one day.

### Description

GHK is a peptide released during extracellular matrix (ECM) protein degradation following tissue injury.[1] It binds to copper to form GHK-Cu, a complex with diverse biological activities, including roles in tissue remodeling and wound healing, hair growth, and suppression of inflammation. GHK (1 µM) increases keratinocyte proliferation *in vitro*, as well as the number of cells positive for the keratinocyte stem cell marker p63 and the protein levels of integrin α6 and β1 in a skin equivalent model.[2] It also reduces infiltration of inflammatory cells and decreases TNF-α and IL-6 protein levels in bronchoalveolar lavage fluid (BALF) in a mouse model of pulmonary fibrosis induced by bleomycin (Item No. 13877).[3]

### References


1. Pickart, L. The human tri-peptide GHK and tissue remodeling. *J. Biomater. Sci. Polym. Ed.* **19(8)**, 969-988 (2008).
2. Choi, H.-R., Kang, Y.-A., Ryoo, S.-J., *et al.* Stem cell recovering effect of copper-free GHK in skin. *J. Pept. Sci.* **18(11)**, 685-690 (2012).
3. Zhou, X.-M., Wang, G.-L., Wang, X.-B., *et al.* GHK peptide inhibits bleomycin-induced pulmonary fibrosis in mice by suppressing TGFβ1/Smad-mediated epithelial-to-mesenchymal transition. *Front. Pharmacol.* **8**, 904 (2017).





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