



pH SOLUTIONS

pH Solutions, LLC  
181 W. Huntington Dr. #106, Monrovia, CA 91016  
(626) 734-6620 · www.phsolutionslab.com  
ISO/IEC 17025:2017 Accredited · IILac-MRA · PJLA #84351

Certificate of Analysis  
COA PLB-COA-GHK-20260817-11  
Lot PLB-GHK-20260817-11 · Issued Sep15,2026

# GHK-Cu

50 mg/vial · PLB-V-GHK-50 · Prepared for Peptology Labs

DRAFT

CAS 89030-95-5 Formula C14H24CuN6O4 MW 403.9 g/mol

## SAMPLE INFORMATION

|                     |                   |             |
|---------------------|-------------------|-------------|
| SAMPLE NAME         | MANUFACTURED      | REPORT DATE |
| GHK-Cu 50 mg vial   | 17-Aug-2026       | Sep15,2026  |
| LOT NUMBER          | EXPIRATION        |             |
| PLB-GHK-20260817-11 | 17-Aug-2027       |             |
| SAMPLE MATRIX       | VIALS IN LOT      |             |
| Lyophilized peptide | 700               |             |
| INTENDED USE        | TARGET FILL       |             |
| Research use only   | 50.00 mg per vial |             |

### PURITY

99%  
TESTED · HPLC

### RESIDUAL SOLVENTS

Pass  
PASS · GC headspace

### HEAVY METALS

Pass  
PASS · ICPMS

### WATER ACTIVITY

0.43 aw  
PASS · aw

### MICROBIALS

Not detected  
PASS · qPCR

## I. Results Summary

ALL PARAMETERS CONFORM

| TEST                                                   | METHOD               | SPECIFICATION                                                        | RESULT                     | STATUS |
|--------------------------------------------------------|----------------------|----------------------------------------------------------------------|----------------------------|--------|
| Purity                                                 | HPLC, area %         | ≥99%                                                                 | 99%                        | TESTED |
| Microbials                                             | qPCR                 | Aerobic count, Enterobacteriaceae, yeast & mold: not detected in 1 g | Not detected · 10 analytes | PASS   |
| Water Activity                                         | Water Activity Meter | <0.65 aw (threshold for microbial growth)                            | 0.43 aw                    | PASS   |
| Residual Solvents<br>Tested on the API lot             | GC headspace         | ICH Q3C Class 2/3 limits                                             | Below ICH limits           | PASS   |
| Heavy Metals<br>As, Cd, Pb, Hg · tested on the API lot | ICPMS                | USP <232>                                                            | Below USP limits           | PASS   |

## 2. Panel Detail

Per-analyte readings behind the panel verdicts above

Heavy Metals ICPMS · LOD, LOQ and limit in ppm as stated by the lab

PASS

| ANALYTE | LOD | LOQ | LIMIT | RESULT | STATUS |
|---------|-----|-----|-------|--------|--------|
|---------|-----|-----|-------|--------|--------|

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ND = Not Detected · NT = Not Tested · LOD = Limit of Detection · LOQ = Limit of Quantitation · TESTED = result reported, no acceptance limit applied · PASS / FAIL = judged against the stated limit. Results relate only to the lot tested.



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# Certificate of Analysis

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|      |        |      |   |        |      |
|------|--------|------|---|--------|------|
| Lead | 0.0167 | 0.05 | — | 0.0853 | Pass |
|------|--------|------|---|--------|------|

**Residual Solvents** GC headspace · LOD, LOQ and limit in ppm as stated by the lab PASS

| ANALYTE      | LOD  | LOQ | LIMIT | RESULT | STATUS |
|--------------|------|-----|-------|--------|--------|
| Acetonitrile | 0.33 | 1   | —     | ND     | Pass   |
| Ethanol      | 0.33 | 1   | —     | ND     | Pass   |
| Methanol     | 0.33 | 1   | —     | 17.2   | Pass   |

**Microbials** qPCR, per gram PASS

| ANALYTE            | RESULT    | STATUS | ANALYTE               | RESULT    | STATUS | ANALYTE             | RESULT    | STATUS |
|--------------------|-----------|--------|-----------------------|-----------|--------|---------------------|-----------|--------|
| Aerobic Bacteria   | ND in 1 g | Pass   | E. Coli               | ND in 1 g | Pass   | Aspergillus niger   | ND in 1 g | Pass   |
| Yeast & Mold       | ND in 1 g | Pass   | Salmonella spp.       | ND in 1 g | Pass   | Aspergillus terreus | ND in 1 g | Pass   |
| Coliforms          | ND in 1 g | Pass   | Aspergillus flavus    | ND in 1 g | Pass   |                     |           |        |
| Enterobacteriaceae | ND in 1 g | Pass   | Aspergillus fumigatus | ND in 1 g | Pass   |                     |           |        |

## 3. Methods and Notes

### Purity · HPLC, area %

Measures what fraction of the material is the complete target peptide vs. synthesis byproducts, truncated sequences, or degradation products. High purity ensures the results reflect the intended compound and ensures identity by confirming retention time during this test aligns with a certified reference standard.

### Water Activity · Water Activity Meter

Lyophilized peptides absorb atmospheric moisture, which dilutes the active content per mg and accelerates degradation. Knowing water content allows researchers to calculate the true peptide mass when preparing solutions for experiments.

### Heavy Metals · ICPMS

Heavy metals accumulate in biological systems and can interfere with enzyme activity, receptor binding, and cell viability. Even trace levels of arsenic, cadmium, lead, and mercury can confound in vitro and in vivo research outcomes.

### Microbials · qPCR

Confirms the finished vial is free of viable bacteria, Enterobacteriaceae, yeast, and mold. Microbial contamination in reconstituted peptide solutions can invalidate cell-based and in vivo research results.

### Residual Solvents · GC headspace

Organic solvents such as DMF, DCM, and acetonitrile are used during synthesis and purification. Residual traces can interfere with biological assays, affect cell viability, and indicate incomplete purification of the final product. This test was performed on the bulk API lot during incoming raw material inspection prior to manufacturing.

What each test measures and why it is on this certificate

## 4. Authorization and Release

**DRAFT**

TESTED AND CERTIFIED BY

**Raquel Keledjian**

**Raquel Keledjian**

Laboratory Director, pH Solutions, LLC

ISO/IEC 17025:2017 · Accreditation #84351



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