CRAFA
PEPTIDE & COMPOUND ANALYSIS

Independent Peptide & Research-Compound Testing
14 Mill Lane, Cambridge, United Kingdom

CERTIFICATE OF ANALYSIS

Certificate of Analysis (COA)

No. CRF-2026-2080
Issued: 2026-10-16

PRODUCT IDENTIFICATION

PRODUCT		SKU / INTERNAL CODE
GHK-Cu 50 mg		CRF-2026-2080
PRESENTATION		BATCH NUMBER
Lyophilised powder, 50 mg vial		LOT-2610-2080
CLIENT	SAMPLE RECEIVED	ANALYSIS DATE
veltispeptides.mx	2026-10-11	2026-10-14
PRODUCTION DATE	ISSUED	EXPIRY / RETEST
2026-10-09	2026-10-16	2028-10-16

MOLECULAR FORMULA
C14H22N6O4.Cu

MOLECULAR WEIGHT	CAS NUMBER
401.91	89030-95-5

ANALYTICAL METHOD

PANEL
SILVER - HPLC-UV + LC-MS/MS + ICP-MS (Pb/As/Cd/Hg) + LAL endotoxin

METHOD
RP-HPLC-UV 214 nm · LC-MS/MS ESI Q-TOF · ICP-MS · LAL kinetic chromogenic (USP <85>)

INSTRUMENT
Agilent 1290 · Agilent 7900 ICP-MS · Charles River Endosafe nexgen-PTS

Column: C18 4.6×150mm | Temperature: 35°C | Mobile phase: 0.1% TFA H2O / ACN | Flow: 1.0 mL/min | Retention time: 6.1 min

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1. PURITY & ASSAY - RP-HPLC-UV (214 nm)

Test	Specification	Result	Status
HPLC Purity	≥98.0%	99.7%	PASS
Quantity	95.0-105.0%	50.1 mg (100.2%)	PASS
Copper Content (ICP-MS)	15.0-16.5%	15.8%	PASS

2. LC-MS/MS STRUCTURAL CONFIRMATION

Test	Reported data	Status
Free peptide - Theoretical [M+H]+	340.2 | Observed: 340.3 | Δ +0.10 Da	PASS
Cu complex - Theoretical [M+Cu-H]+	402.1 | Observed: 402.3 | Δ +0.20 Da	PASS
Sequence Coverage (MS/MS)	≥95% | 100% (Gly-His-Lys)	PASS
Key fragments	b2 212.1 · b3 340.2 · y1 147.1 · y2 275.2	PASS
Modifications	Cu(II) coordinated via His imidazole N and Lys/Gly amide nitrogens - confirmed by characteristic isotope pattern (63Cu/65Cu at 69:31)	PASS

RESEARCH USE ONLY - NOT FOR HUMAN OR VETERINARY USE

3. HEAVY METALS - ICP-MS (USP <232>/<233>)

Test	Specification	Result	Status
Pb	≤5.0 µg/g	<0.05 µg/g	PASS
As	≤15.0 µg/g	<0.10 µg/g	PASS
Cd	≤2.0 µg/g	<0.02 µg/g	PASS
Hg	≤3.0 µg/g	<0.01 µg/g	PASS

4. ENDOTOXIN - LAL kinetic chromogenic (USP <85>)

Test	Reported data	Status
Result	<1.0 EU/mg limit | 0.19 EU/mg | PPC recovery 91%	PASS

FINAL BATCH RESULT

PASS - Conforms to specifications

ANALYST NOTES

Glycyl-L-histidyl-L-lysine copper(II). Characteristic blue tint, λmax 605 nm. Free uncomplexed peptide <0.5% by LC-MS. Cu isotope pattern confirms genuine complex, not physical mixture.

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