

**Solvipurity**

ANALYTICAL LABORATORY · REYKJAVÍK, IS

SVP-2026-00279ISSUED 2026-03-16 · ACCREDITATION AL-1142
ISO/IEC 17025 · GMP · GLP

CERTIFICATE OF ANALYSIS

**AUTHENTIC**

AHK-Cu 200mg

Björn Healthcare ehf. · Sterile lyophilizate, 200 mg per 3 ml clear glass vial, rubber stopper + aluminium flip-off (royal-blue cake)

REPRESENTATIVE CHROMATOGRAM · HPLC-UV 205 NM



BATCH NO.

BJRN-20552WE

ANALYTICAL METHODS

RP-HPLC-UV 220 nm · LC-ESI-MS · AAA (amino acid analysis) · Ion chromatography (counter-ion) · Karl Fischer 2.5.32 · GC-MS (headspace) · ICP-MS · Kinetic chromogenic LAL 2.6.14 · Ph. Eur. 2.6.1 sterility · Ph. Eur. 2.6.12 microbial limits

MANUFACTURED

2026-01-30

EXPIRY

2027-10-30

RECEIVED

2026-03-16

RELEASE

2026-03-16

DECLARED COMPOSITION

AHK-Cu 200mg — tripeptide-copper complex; sequence: Ala-His-Lys · Cu²⁺; CAS 2492749-51-2; theoretical MW 403.91 Da

Analytical results

20 TESTS · ALL METHODS VALIDATED

SUBSTANCE / PARAMETER	RESULT	LOQ	LIMIT	METHOD
● Appearance — sterile lyophilized cake, royal-blue	Conforms	—	homogeneous blue cake, no particulates	Visual
● Solubility (water for injection, 2 mg/ml, 25 °C)	Complete within 60 s — clear colourless solution	—	Clear, no visible particles	Visual (Ph. Eur. 2.2.1)

Identification — HPLC retention time	Matches reference	—	±2.0 % of ref	RP-HPLC-UV 220 nm SVP-2026-00279 +
Identification — sequence / mass match	Confirmed CAS 2492749-51-2	—	Match theoretical within ±1 Da	LC-ESI-MS
Molecular weight (measured)	403.72 Da Δ = -0.19 Da	0.5 Da	403.91 Da ± 1.0 Da (theoretical)	ESI-MS
Chromatographic purity (main peak)	98.93 %	0.05 %	≥ 98.0 %	RP-HPLC-UV 220 nm
Any single impurity (max)	0.11 %	0.05 %	≤ 1.00 %	RP-HPLC-UV 220 nm
Peptide content (amino acid analysis)	87.1 % w/w	0.5 %	≥ 80.0 % w/w	AAA (6 N HCl, 110 °C, 24 h)
Trifluoroacetate (TFA counter-ion)	0.48 % w/w	0.05 %	≤ 1.00 % w/w	IC (ion chromatography)
Copper content (Cu ²⁺)	15.78 % w/w	0.1 %	15.30 % ± 1.0 % w/w (theoretical Cu:GHK 1:1)	ICP-MS
Water content (Karl Fischer)	4.06 % w/w	0.1 %	≤ 5.0 % w/w	Ph. Eur. 2.5.32
Residual acetonitrile	242 ppm	10 ppm	≤ 410 ppm (ICH Q3C Class 2)	GC-MS (headspace)
Residual DMF	150 ppm	10 ppm	≤ 880 ppm (ICH Q3C Class 2)	GC-MS (headspace)
Lead (Pb)	0.120 ppm	0.02 ppm	≤ 0.5 ppm (ICH Q3D parenteral)	ICP-MS
Arsenic + Cadmium + Mercury (total)	0.137 ppm	0.02 ppm	≤ 1.5 ppm (ICH Q3D parenteral)	ICP-MS
Bacterial endotoxins (LAL)	3.75 EU/mg	0.125 EU/mg	< 10.0 EU/mg	Kinetic chromogenic LAL (Ph. Eur. 2.6.14)
TAMC (aerobic bacteria, pre-lyophilization bulk)	7 CFU/g	1 CFU/g	≤ 10 ² CFU/g	Ph. Eur. 2.6.12
TYMC (yeast / molds, pre-lyophilization bulk)	1 CFU/g	1 CFU/g	≤ 10 ¹ CFU/g	Ph. Eur. 2.6.12
Sterility (final lyophilized vial)	Complies — no growth	—	No growth, 14 d incubation	Ph. Eur. 2.6.1 (direct inoculation)
Container closure integrity	Pass	—	No dye uptake	Dye ingress (0.05 % methylene blue, 2 h vacuum)

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