Alpha Tides

CERTIFICATE OF ANALYSIS · LOT RELEASE

alphatides.net

CERTIFICATE NO.
PL-26-00041

VERIFICATION KEY
YCC7W5XC

Scan or enter both at prymalab.net/testing/verify

CERTIFICATE OF ANALYSIS · LOT RELEASE · ISSUED FOR ALPHA TIDES

GKP Blend 70 mg

Lot **PL-2609-041** · Lyophilized co-blend powder · Label claim **70 mg/vial**

TESTED IN-HOUSE BY PRYMALAB

In-house analytical result, not an independent third-party test

LOT / BATCH NUMBER	DATE MADE	DATE OF ANALYSIS	DATE ISSUED
PL-2609-041	2026-09-17	2026-09-19	2026-10-03

RETEST / EXPIRY	UNITS IN LOT / SAMPLED	STORAGE	CERTIFICATE TYPE
2028-09-17	250 / 2	−20 °C, desiccated, dark	Lot COA, 2 pages

COMPOUND	CAS NUMBER	MOLECULAR FORMULA	THEORETICAL MASS (AVG.)
GKP Blend GHK-Cu + KPV + BPC-157 co-lyophilized blend	**89030-95-5 · 67727-97-3 · 137525-51-0**	$C_{14}H_{22}CuN_6O_4$ · $C_{16}H_{30}N_4O_4$ · $C_{62}H_{98}N_{16}O_{22}$	401.9 · 342.4 · 1419.6 Da (GHK-Cu / KPV / BPC-157)

COMPOSITION AND SEQUENCES

GHK-Cu 50 mg: `H-GHK-OH · Cu(II) (1:1 copper complex)` · **KPV 10 mg**: `H-KPV-OH (3 residues; free N- and C-termini)` · **BPC-157 10 mg**: `H-GEPPPGKPADDAGLV-OH (15 residues; free N- and C-termini)`

PURITY · RP-HPLC, AREA %

99.71%

Specification 99.0 % • blend purity — sum of the three component peaks

IDENTITY · OBSERVED MASS

3 / 3

Components confirmed by LC-MS within ± 1.0 Da: 402.1 / 342.6 / 1419.8 Da

OVERALL CONCLUSION

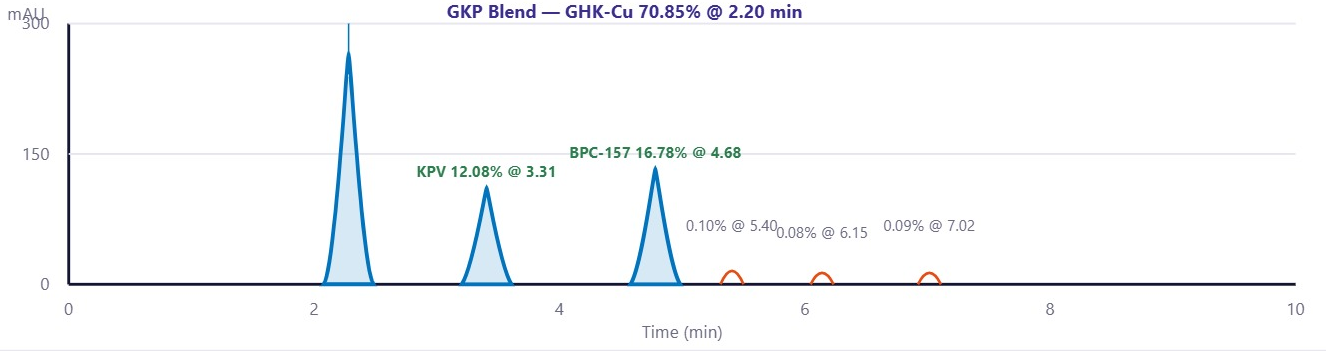
PASS

Meets every specification for the tests performed

TEST	METHOD	SPECIFICATION	RESULT	CONCLUSION
Appearance	Visual inspection	Blue to blue-violet lyophilized cake (GHK-Cu copper complex)	Blue lyophilized cake	**PASS**
Identity (mass)	LC-MS, ESI positive	Theoretical ± 1.0 Da, each component	3/3 components confirmed	**PASS**
Purity	RP-HPLC, UV 214 nm, area%	99.0 % (blend)	99.71%	**PASS**
Largest impurity	RP-HPLC, area%	1.0 %	0.10 % at 5.40 min	**PASS**
Water content	Karl Fischer	5.0 %	2.0 %	**PASS**
Bacterial endotoxin	LAL, kinetic	≤ 5.0 EU/mg	0.05 EU/mg	**PASS**
Sterility / bioburden	USP <71>, membrane filtration	No growth after 14 days	No growth; conforms	**PASS**

1 HPLC CHROMATOGRAM

Data file: GKP_PL-2609-041_20260919_01 · Column C18, 150 × 4.6 mm · UV 214 nm



Baseline uncropped; three component peaks and impurities labeled with retention times. Peak table on page 2.

Verify: prymalab.net/testing/verify · PL-26-00041 · key YCC7W5XC

For laboratory research use only. Not for human or veterinary use.

2 HPLC METHOD · GKP_PL-2609-041_20260919_01

INSTRUMENT
Waters Alliance e2695, SN E2695B742

DATA SYSTEM
Empower 3, Build 3471

DETECTOR
Waters 2998 PDA

DETECTION WAVELENGTH
214 nm

COLUMN
C18, 150 × 4.6 mm, 3.5 µm

COLUMN PART / SERIAL
186003326 / USHX18211

MOBILE PHASE A
0.1% TFA in water

MOBILE PHASE B
0.1% TFA in MeCN

FLOW RATE
1.0 mL/min

COLUMN TEMPERATURE
30 °C

INJECTION VOLUME
20 µL

RUN TIME
10 min

SAMPLE DILUENT
Water, 0.1% TFA

SAMPLE CONCENTRATION
0.5 mg/mL (blend)

BLANK INJECTED
Yes

REFERENCE STANDARD
In-house GKP blend reference, lot PL-RS-GKP-01, component RTs 2.18 / 3.29 / 4.66 min

3 GRADIENT PROGRAM

TIME (MIN)	% A	% B
0.0	95	5
3.0	95	5
7.0	55	45
8.0	20	80
9.0	20	80
10.0	95	5

4 PEAK TABLE

PEAK	RT (MIN)	AREA	AREA %
1 (GHK-Cu)	2.20	3,046,550	70.85
2 (KPV)	3.31	519,440	12.08
3 (BPC-157)	4.68	721,540	16.78
4	5.40	4,300	0.10
5	6.15	3,440	0.08
6	7.02	3,870	0.09
Total		4,300,000	100.00

Threshold 0.05% area · Blank subtracted: Y · Purity = main peak area ÷ total integrated area × 100, to two decimals; main peak shaded.

5 IDENTITY BY MASS SPECTROMETRY

INSTRUMENT
Waters Acquity SQD

IONIZATION / MODE
ESI, positive

OBSERVED M/Z (CHARGE)
402.8 (1+ [M+H], GHK-Cu) · 343.3 (1+ [M+H], KPV) · 1420.3 (1+ [M+H], BPC-157)

DECONVOLUTED MASS
402.1 / 342.6 / 1419.8 Da (by component)

THEORETICAL MASS
401.9 / 342.4 / 1419.6 Da (GHK-Cu / KPV / BPC-157)

DIFFERENCE
≤ +0.2 Da (per component)

DATA FILE
GKP_PL-2609-041_MS_20260919_01

ACCEPTANCE
Within ± 1.0 Da (each component)

6 ADDITIONAL TESTS

TEST	PERFORMED BY	DATE	REPORT / FILE
Water content	PrymaLab	2026-09-20	RPT-KF-PL-2609-041
Endotoxin	PrymaLab	2026-09-21	RPT-ET-PL-2609-041
Sterility	PrymaLab	2026-10-02	RPT-ST-PL-2609-041

A test with no row here was not performed on this lot. Outside-laboratory reports, when used, are attached and named below.

7 REVIEW AND APPROVAL

D. Reynolds
Analyst · performed the testing
Date: 2026-09-19

S. Calloway
Reviewer · checked against raw data
Date: 2026-10-02

M. Phelps
Lab Director · approved for release
Date: 2026-10-03

Raw data retained at: Empower 3 (Build 3471), project PL-2609, archive PL-ARC-2026; 7 years. Outside laboratory reports attached: None

This certificate applies only to the lot named above and describes the units sampled from it; it is not a guarantee for any other lot. Results were obtained by PrymaLab LLC's own laboratory (PrymaLab Analytical) and are not an independent third-party test unless an outside report is attached. This copy is issued for Alpha Tides, a distributor of the lot; the brand shown does not change the laboratory, the method or the results. Reference values (CAS, formula, theoretical mass, sequence) are literature values for the named compound. Authenticity: scan the QR code or enter certificate number PL-26-00041 and key YCC7W5XC at prymalab.net/testing/verify; any copy that does not match the record shown there is not a PrymaLab certificate. PrymaLab LLC products are supplied for laboratory research use only and not for human or veterinary use.