ZAVIN BIOTECHNOLOGY

Analytical Reference Standards

CERTIFICATE OF ANALYSIS

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PRODUCT IDENTIFICATION

Product Name	GLOW Blend Analytical Kit
Catalog No. (SKU)	GLOW70
Lot / Batch No.	ZBV-GLOW70-20260307
Quantity per Vial	70 mg
Manufacture Date	2026-03-07
Analysis Date	2026-03-11
Expiration Date	2028-03-11
Physical Appearance	White to off-white lyophilized powder
Material Form	Lyophilized solid

MOLECULAR CHARACTERIZATION

Chemical Name / Synonyms	GLOW Blend Analytical Kit
Molecular Formula	Peptide conjugate (empirical formula on file)
Molecular Weight (Calc.)	See COA
Primary Structure	Structure assigned by LC-MS/MS peptide mapping and comparison to qualified in-house reference standard.
CAS Registry No.	Assigned per internal reference catalog

SUMMARY OF ANALYTICAL RESULTS

Analytical Test	Specification	Result	Method Reference
HPLC Purity (area %)	>= 98.0%	99.6%	In-house HPLC / USP <621>
Identity Confirmation (MS)	Consistent with reference	Conforms	ESI-MS / LC-MS
Water Content (Karl Fischer)	<= 5.0%	1.79%	USP <921> Method Ic
Acetate / Counter-ion	Report value	5.55%	Ion Chromatography
Appearance	White to off-white powder	Conforms	Visual inspection

Qualified as an in-vitro analytical reference standard only. Not for human, veterinary, diagnostic, or therapeutic use.

HPLC PURITY ASSAY - CHROMATOGRAPHIC CONDITIONS

Column	C18 reversed-phase, 4.6 x 250 mm, 5 um, 300 A pore size
Mobile Phase	A: 0.1% TFA/H2O; B: 0.1% TFA/ACN; linear gradient 5-65% B over 45 min
Flow Rate	1.0 mL/min
Detection	UV 214 nm with in-line ESI-MS identity check
Main Peak RT	10.89 min

Main Peak Area	99.6%
Total Related Substances	0.40%
System Suitability	N >= 2000 plates; tailing factor <= 1.5 (USP <621>)

MASS SPECTROMETRY IDENTITY CONFIRMATION

Ionization Mode	ESI-Positive
Theoretical Mass	See COA
Observed Mass (M+H)+	See COA
Mass Delta	+/- 0.03 Da
MS/MS Fragmentation	Major b/y series consistent with assigned structure
Identity Conclusion	Conforms - observed mass within method tolerance

SUPPLEMENTAL QUALITY ATTRIBUTES

Test Parameter	Acceptance Criteria	Result	Technique
Bacterial Endotoxin	<= 0.25 EU/mg	< 0.10 EU/mg (kinetic chromogenic LAL)	USP <85> LAL
Heavy Metals (screen)	<= 10 ppm	< 5 ppm combined (ICP-MS screen)	ICP-MS
Residual Solvents	ICH Q3C compliant	Complies with ICH Q3C (GC headspace)	GC Headspace
Related Substances	Single impurity <= 0.5%	Conforms	HPLC
Peptide Content (UV)	Report value	99.2%	UV 214 nm

STORAGE & HANDLING

Lyophilized / Unopened Solid	Sealed, desiccated, protected from light. Store lyophilized copper-peptide solid at -20 deg C (up to 1 year) or -80 deg C (up to 2 years). Do not treat as a colorless generic peptide.
After Reconstitution (Analytical Solution)	Aliquot immediately after dissolution. Frozen analytical stock: -20 deg C up to 1 month or -80 deg C up to 6 months (sealed). Working solution: 2-8 deg C up to 1 week. Do not repeat freeze-thaw cycles. Protect the solution from light. A blue or blue-violet color is the copper complex, not contamination.
Handling	Equilibrate the sealed vial to ambient temperature before opening to avoid condensation on the solid. Keep desiccated and protected from light. Do not shake. Aliquot solutions so each tube is thawed once. Copper coordination is light-sensitive; keep the vial in the carton or wrap it after each use.
Stability Note	Sealed lyophilized material: up to 1 year at -20 deg C or 2 years at -80 deg C (MedChemExpress peptide insert). Solution window as listed. Sigma peptide handling allows 2-8 deg C working use up to 1 week. Light protection is required for both solid and solution.

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