Axiom ANALYTICS

CERTIFICATE OF ANALYSIS · 4X ESSENTIAL PANEL + 1 ADD-ON LAYER (L8)

Axiom Analytics Laboratories
2108 N St Ste N, Sacramento, CA 95816 US

AX-2026-3376-Y53K

Tirzepatide · Lot T-TIR-0011
Issued Oct 2, 2026 · v1
Verify: 6756-96F7-CD3E

SCAN TO VERIFY

PASS — ALL SPECIFICATIONS MET

5 of 5 layers complete

L1	L2	L3	L4	L8
Identity	Purity	Net Peptide Content	Sterility	Fentanyl Screen

Sample & Vial Validation



Vial A: as received & analyzed

MORE VIEWS OF VIAL A



Vial A · right

Client	**Liberty Research Solutions**	Product	**Tirzepatide**
Lot / Batch	**T-TIR-0011**	Label Claim	**30 mg**
Matrix	**lyophilized powder**	Sample Count	**1**
Cap Color	**Black**	Crimp Color	**Silver / Aluminum**
Contents Color	**White**	Seal Intact	**Yes**
Condition	**sealed, intact**	Received	**Sep 24, 2026**
Sampling	**client submitted**		

Test Results

Test	Specification	Result	
Identity research screen	every vial within ±1 Da of 4813.527 Da	4813.469 Da	PASS
Purity research screen	Expected Purity ≥ 99.25 area % · Acceptance NLT 99.25 area % · Units area % · Source Axiom Analytics SPEC-PURITY-001, Revision 1, effective 2026-08-31	99.54%	PASS
Net Peptide Content research screen	every vial within ±10% of 30 mg	Vial A: 31.52 mg	PASS
Sterility · Rapid PCR research screen	Rapid PCR screen	Target DNA not detected	PASS
Fentanyl Screen research screen	no fentanyl or analog at or above 1 ng/mg	none detected	PASS

Layer Results

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1 Identity

LC-MS (ESI+)

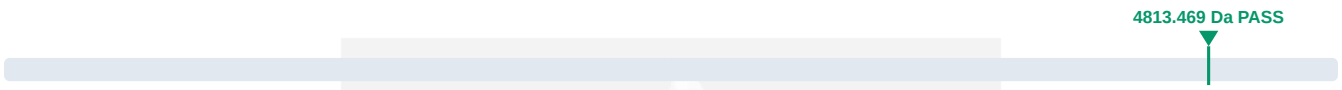
1 physical-vial mass observation
each +/- 1 Da (theor. 4813.527)

PASS

Mass consistent with Tirzepatide

Theoretical mass **4813.527 Da** Acceptance **+/- 1 Da**

Vial	Observed mass	Mass error	Status
Vial A	4813.469 Da	-0.058 Da	PASS



2 Purity

RP-HPLC 214nm (USP 621)

1 physical-vial purity observation
Expected Purity ≥ 99.25 area % · Acceptance NLT 99.25 area % · Units area % · Source Axiom Analytics SPEC-PURITY-001, Revision 1, effective 2026-08-31

PASS

Expected Purity ≥ 99.25 area % · Acceptance NLT 99.25 area % · Units area % · Source Axiom Analytics SPEC-PURITY-001, Revision 1, effective 2026-08-31

Vial	Purity	Status
Vial A	99.54%	PASS

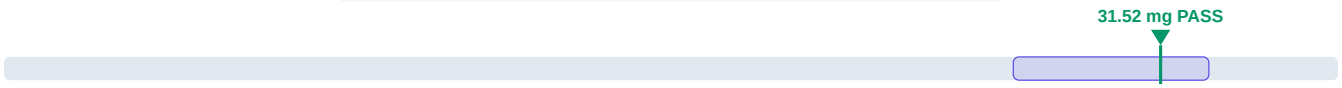


3 Net Peptide Content

Quantitative HPLC vs reference std

31.52 mg
each within +/- 10% of 30 mg

PASS



Vial	Measured	Status
Vial A	31.52 mg	PASS

4 Sterility

Rapid Microbial DNA Screen (qPCR target panel)

Sterility · Rapid PCR: Target DNA not detected
No microbial target DNA detected

PASS

Sterility · Rapid PCR PASS

Result **Target DNA not detected** Specification **Rapid PCR screen**

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8 Fentanyl Screen

LC-MS/MS targeted adulterant screen

Not detected
detection limit 1 ng/mg

PASS

Analytes screened	**Fentanyl, Acetylfentanyl, Acrylfentanyl, Butyrylfentanyl, Carfentanil, Cyclopropylfentanyl, Furanylfentanyl, Methoxyacetylfentanyl, ortho-Fluorofentanyl, Valerylfentanyl, 4-ANPP (despropionyl fentanyl)**	Detection limit	**1 ng/mg**
Source container	**A**		

Reporting Scope & Limitations

`[Sterility · Rapid PCR]` DNA-target research screen only. It detects microbial DNA from viable and non-viable organisms alike, and is neither viable-CFU enumeration under USP <61> nor a batch sterility determination under USP <71>.

`[Fentanyl Screen]` Targeted LC-MS/MS adulterant screen, reported as detected or not detected against its stated detection limit. A harm-reduction research screen, not an exhaustive adulterant panel.

Digital Signatures

Analyst	**Alana Reeves**	Analyst Signature	**ed25519:1739eabb162cd5ec7a0f55be...**
Technical Reviewer	**Michael Niles**	Reviewer Signature	**ed25519:0d7270c1d8f57d208499566a...**
Laboratory Director	**Daniel Brennan**	Director Signature	**ed25519:f7b698c48a3b91a9b46c94e1...**

Physical instrument analysis is performed within Axiom Analytics' laboratory network, allocated at Axiom's discretion based on method, capacity, and order volume. Axiom Analytics performs sample accession, chain of custody, analytical oversight, and data review, and issues and is responsible for this certificate. Where analysis is subcontracted, the method is performed within the partner laboratory's published ISO/IEC 17025 scope of accreditation for that method, not merely at a laboratory holding ISO/IEC 17025 accreditation. Axiom Analytics does not itself currently hold ISO/IEC 17025 accreditation. The method-validation status of each reported result is identified beside that result. Partner laboratory identities are not disclosed: samples are analyzed under double-blind conditions, identified only by an internal lot ID.

Each signature is an ed25519 signature over the SHA-384 hash of this report. Scan the QR on the letterhead or verify independently at https://axiomanalyticslab.com/verify/AX-2026-3376-Y53K.

✓ **CRYPTOGRAPHICALLY SEALED (ed25519 + SHA-384)**

`SHA-384: 08ba4be946ef583843dbd55a1700e5fffd13cf0430505333457328b66f39fe10...`

`Seal: ed25519:3998a507d81b4bb4ee43a34b37d18290c88e2545...`

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