Analytical Testing Laboratory
7271 Engle Rd Unit 201A, Middleburg Heights, OH 44130
www.sonic-laboratories.com
COA inquiries: info@sonic-laboratories.com
Verify at sonic-laboratories.com/coa-lookup **Code: RPZUJJ45**

CERTIFICATE OF ANALYSIS

COA #: **SD20261109_029_TZ10**

SAMPLE INFORMATION

Client	First Standard Peptides	**Accession #**	SD20261109_029
Compound	Tirzepatide	**Date Received**	11/09/2026
Molecular Formula	C225H348N48O68	**Date Reported**	11/11/2026
Appearance	White lyophilized powder	**Labeled Quantity**	10mg
Sample Form	Lyophilized Vial	**Lot / Batch #**	TR10-26-B001
Storage	Room Temp	**CAS Number**	2023788-19-2
Cap Color	Pink		



All Chemical Analysis Performed by LC-MS/MS

ANALYTICAL RESULTS

Test / Analysis	Method	Specification	Result	Status
Identity (Mass Confirmation)	LC-MS/MS	Matches reference mass	Tirzepatide	**Pass**
Purity	LC-MS/MS	≥ 95.0%	99.37%	**Pass**
Net Peptide Content	HPLC	Report value	10.11mg	**Pass**
Observed Molecular Mass	LC-MS	Within ± 1.0 Da	1204 [M+4H]	**Pass**
Theoretical Molecular Mass	Reference	—	4813.45 Da	**Pass**
Related Substances / Impurities	LC-MS/MS	Report value	Not Detected	**Pass**
Residual Solvents	LC-MS/MS	Report value	Not Detected	N/A

John Humes, MS. **John Humes, MS.**
Analyzed by · Laboratory Analyst · 11/11/2026

Chetan Soni, PhD. **Chetan Soni, PhD.**
Approved by · Laboratory Director · 11/11/2026

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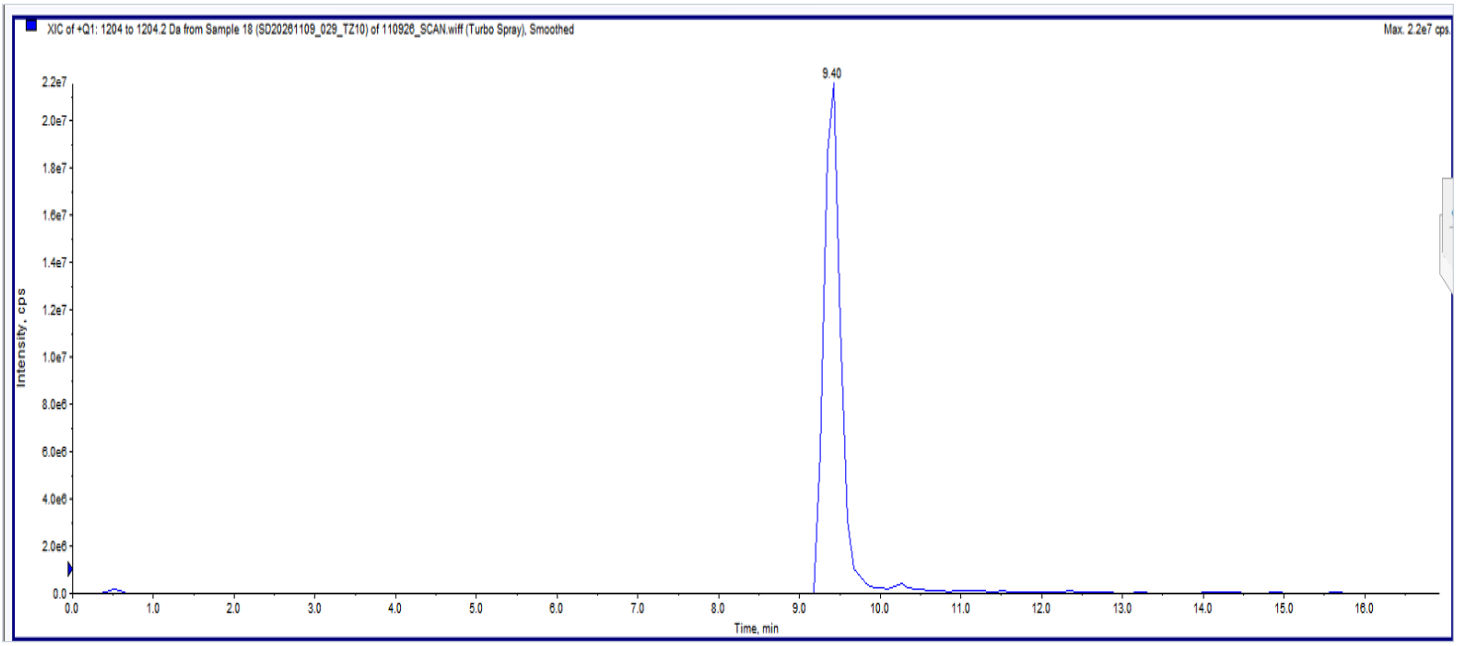
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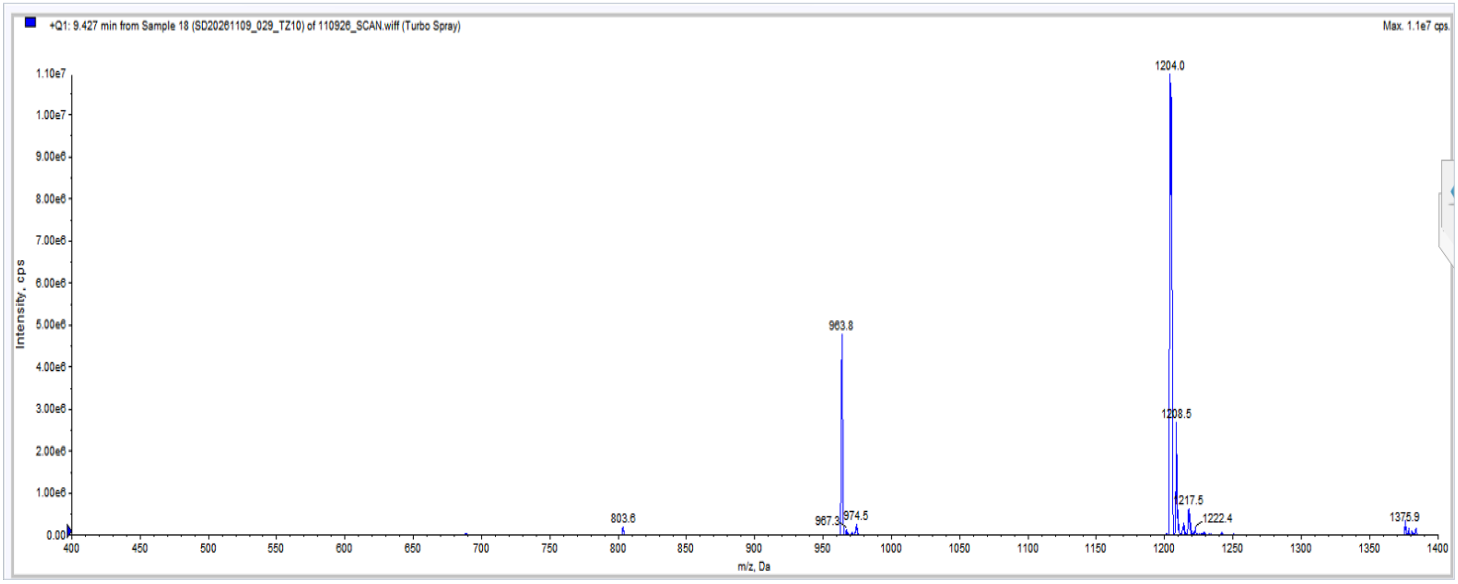
ANALYTICAL DATA

COA #: **SD20261109_029_TZ10**

CHROMATOGRAM



MASS SPECTRUM (LC-MS)



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ANALYTICAL INTERPRETATION

Chromatogram

Retention Time Match for Tirzepatide

Mass Spectrum (LC-MS)

Sample ID: SD20261109_029_TZ10
Label Claim: Tirzepatide

Observed Ions
m/z 963.8, assigned as [M+5H] Tirzepatide
m/z 1204.0, assigned as $[M+4H]^4$ Tirzepatide
m/z 1217.5, isotope/adduct associated with the 4+ charge state
m/z 1375.9, minor adduct/associated species
m/z 803.6, low-abundance fragment species
m/z 1208.5, isotope/adduct associated with the 4+ charge state
m/z 974.5, isotope/adduct associated with the 5+ charge state
Expected Mass

Tirzepatide

Neutral mass ≈ 4813.5 Da

Expected charge states:

[M+5H] ≈ 963.9
$[M+4H]^4$ ≈ 1204.4
Deconvoluted Mass Calculations

m/z 963.8 ([M+5H])

(963.8×5)−5=4814.0 Da(963.8 \times 5)-5 = 4814.0\ \text{Da}(963.8×5)−5=4814.0 Da

m/z 1204.0 ($[M+4H]^4$)

(1204.0×4)−4=4812.0 Da(1204.0 \times 4)-4 = 4812.0\ \text{Da}(1204.0×4)−4=4812.0 Da
Interpretation

The spectrum contains the characteristic Tirzepatide charge-state distribution:

m/z 963.8, assigned as [M+5H] Tirzepatide, deconvoluting to 4814.0 Da
m/z 1204.0, assigned as $[M+4H]^4$ Tirzepatide, deconvoluting to 4812.0 Da

Additional observed ions include:

m/z 1217.5, isotope/adduct associated with the 4+ charge state
m/z 1375.9, minor adduct/associated species
m/z 803.6, low-abundance fragment species

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m/z 1208.5, isotope/adduct associated with the 4+ charge state
m/z 974.5, isotope/adduct associated with the 5+ charge state

The spectrum exhibits:

Strong 5+ and 4+ precursor ions
Excellent agreement between independent deconvoluted masses
Clean baseline with minimal interference
Expected Tirzepatide charge-state distribution
No significant ions indicative of an alternate peptide identity
Conclusion

The observed precursor ions at m/z 963.8 and 1204.0 form the expected Tirzepatide charge-state distribution and deconvolute to approximately 4812-4814 Da, consistent with the theoretical molecular mass of Tirzepatide.

Result: PASS – Identity Consistent with Tirzepatide.

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