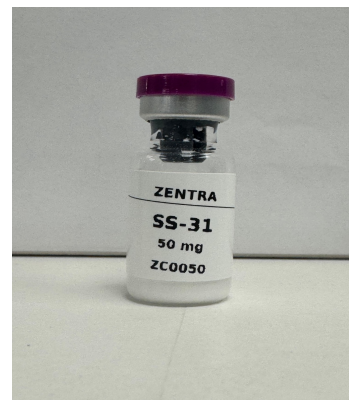


CERTIFICATE OF ANALYSIS

COA #: **SD20260924_019_SS31**

SAMPLE INFORMATION

Client	Zentra Brands Limited	Accession #	SD20260924_019
Compound	SS-31 (Elamipretide)	Date Received	09/24/2026
Molecular Formula	C32H49N9O5	Date Reported	09/27/2026
Appearance	White lyophilized powder	Labeled Quantity	50mg
Sample Form	Lyophilized Vial	Lot / Batch #	ZC0050
Storage	Room Temp	CAS Number	736992-21-5
Cap Color	Purple		



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	SS-31 (Elamipretide)	Pass
Purity	LC-MS/MS	≥ 95.0%	99.54 %	Pass
Net Peptide Content	LC-MS/MS	Report value	52.87 mg	Pass
Observed Molecular Mass	LC-MS	Within ± 1.0 Da	640 [M+H]	Pass
Theoretical Molecular Mass	Reference	—	639.80 Da	Pass
Related Substances / Impurities	LC-MS/MS	Report value	Not Detected	Pass
Residual Solvents	LC-MS/MS	Report value	Not Detected	Pass

John Humes, MS. **John Humes, MS.**
Analyzed by · Laboratory Analyst · 09/27/2026

Chetan Soni, PhD. **Chetan Soni, PhD.**
Approved by · Laboratory Director · 09/28/2026

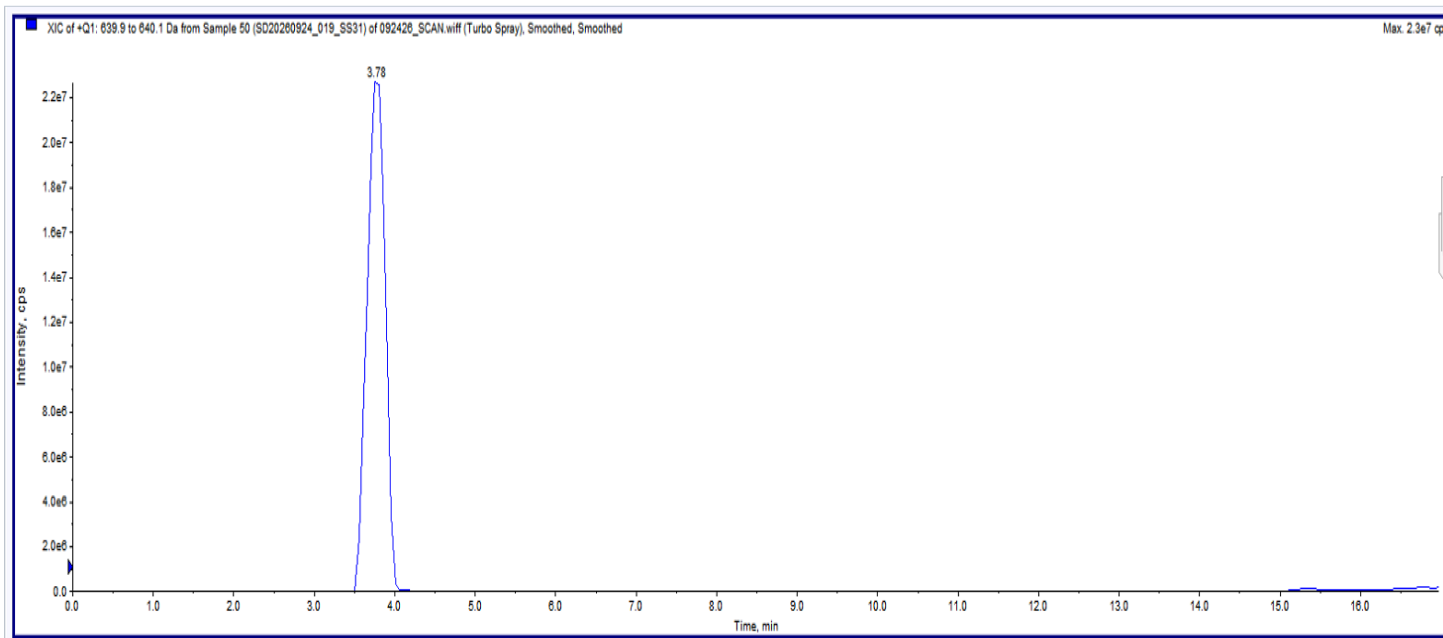
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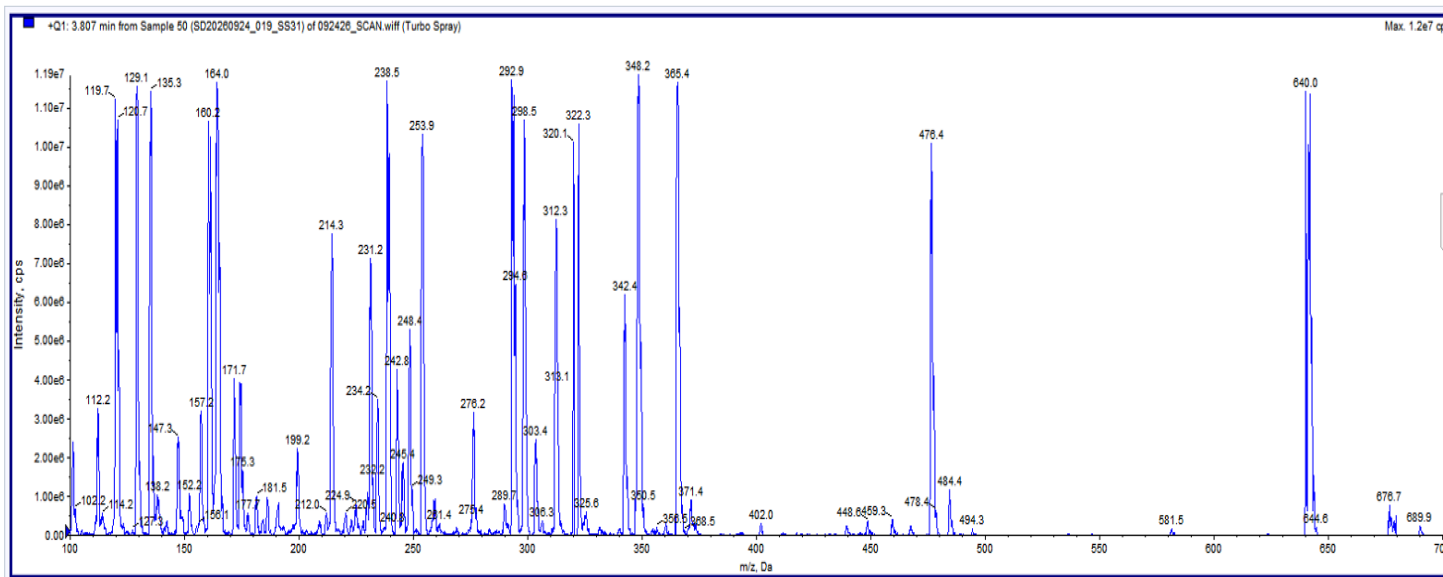
ANALYTICAL DATA

COA #: **SD20260924_019_SS31**

CHROMATOGRAM



MASS SPECTRUM (LC-MS)



John Humes, MS.

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ANALYTICAL INTERPRETATION

Chromatogram

Retention Time Match

Mass Spectrum (LC-MS)

Analyte: SS-31 (Elamipretide)

Sample ID: SD20200924_019_SS31

Method: LC-MS, positive-mode Q1 full scan, TurboSpray ionization

Retention Time: 3.807min

Q1 scan interpretation

The Q1 full-scan spectrum at 3.807min shows a low-mass peptide profile consistent with SS-31, a small tetrapeptide with a protonated molecular ion at ~640m/z. The spectrum contains the expected monoisotopic precursor, sodium/potassium adducts, dimeric species, and characteristic low-mass fragments typical of SS-31 under positive ESI conditions.

Observed charge states (corrected)

640.0m/z – [M+H]

Correct monoisotopic precursor ion for SS-31

662.0m/z – [M+Na]

Sodium adduct of SS-31

678.0m/z – [M+K]

Potassium adduct

320.0m/z – [M+2H]²

Doubly charged precursor ion

1280.0m/z – [2M+H]

Dimeric species (expected for small peptides)

1302.0m/z – [2M+Na]

Sodium-adduct dimer

These ions form the correct charge-state and adduct pattern for SS-31 based on its true molecular weight and observed M+H.

Supporting fragment ions

Consistent SS-31 backbone fragments observed at:

102–253m/z, including 119.7, 129.1, 147.3, 164.0, 171.7, 199.2, 214.3, 231.2, 238.5, 248.6, 253.9m/z.

Mid-mass adduct/cluster ions observed at:

276.2, 292.9, 312.3, 342.4, 365.4, 402.0m/z.

Higher-mass clusters/dimers at:

448.6, 478.4, 581.5, 640.0, 676.7, 689.9m/z.

Identity conclusion

John Humes, MS.

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Identity by LC-MS Q1 full scan — SS-31 confirmed.

The corrected monoisotopic precursor at 640m/z, along with expected sodium/potassium adducts and characteristic fragment ions, matches the validated mass spectral profile for SS-31. No extraneous peptide envelopes or degradation products are present, confirming product identity and integrity.

John Humes, MS.

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