KH
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Document No.
PEPNEXA–QC–EM8216

CERTIFICATE OF ANALYSIS

Semaglutide

CAS No. 910463-68-2

Batch No.
PEPNEXA-2026-SEM-8216

Grade
GMP

Issue Date
Sep 04, 2026

theslowestviper1997@gmail.com | pepnexa.com

ISO 9001:2015 GMP Certified

Purity (HPLC)	Molecular Weight	Test Method	Endotoxin
99.4%	4113.73 Da	RP-HPLC / ESI-MS	< 0.5 EU/mg

Appearance	Storage Condition	Retest Date
White lyophilized powder	-20°C, dry, dark	24 months from manufacture

Amino Acid Sequence (31 residues)

His–Aib–Glu–Gly–Thr–Phe–Thr–Ser–Asp–Val–Ser–Ser–Tyr–Leu–Glu–Gly–Gln–Ala–Ala–Lys–Glu–Phe–Ile–Ala–Trp–Leu–Val–Arg–Gly–Arg

Formula: $C_{187}H_{291}N_{45}O_{59}$ Length: **31 aa**

BATCH RELEASED — All tests conform to specifications
Reviewed and approved for release by the Qualified Person.

AUTHORIZED & RELEASED BY

Dr. Sophia R. Chen
Head of Analytical QC
PepNexa · Hong Kong
Issue Date: Sep 04, 2026

QC Laboratory	Certification
Analytical Testing Dept.	ISO 9001:2015 · GMP

VERIFY DOCUMENT

PepNexa
Scan to verify

Batch Verification
PEPNEXA–2026–SEM–8216

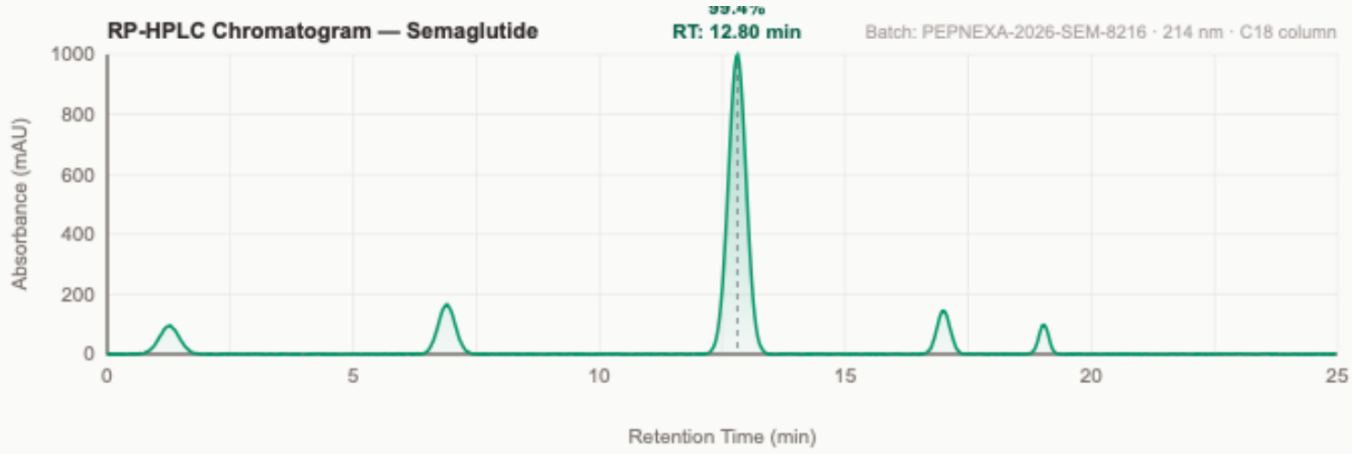
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RP-HPLC Purity Analysis

Reversed-phase HPLC · UV detection at 214 nm

Purity: 99.4%



INSTRUMENT & METHOD PARAMETERS

Instrument **Agilent 1260 Infinity II**	Column **Phenomenex Luna C18, 250×4.6mm, 5µm**	Mobile Phase A **0.1% TFA in H_2O**
Mobile Phase B **0.1% TFA in ACN**	Gradient **5→65% B over 30 min**	Flow Rate **1.0 mL/min**
Detection **UV 214 nm**	Injection Volume **10 µL**	Column Temp. **40°C**

PEAK INTEGRATION TABLE

Peak #	RT (min)	Area	Area %	Assignment
1	13.42	2,847,391	**99.4%**	**Semaglutide (main)**
2	8.17	28,473	0.28%	Des-amino impurity
3	16.83	14,237	0.14%	Oxidized Met variant
4	1.54	18,291	0.18%	Solvent front

ESI-MS Mass Spectrum

Electrospray ionization · Positive ion mode · Orbitrap

MW: 4113.73 Da



MS INSTRUMENT PARAMETERS

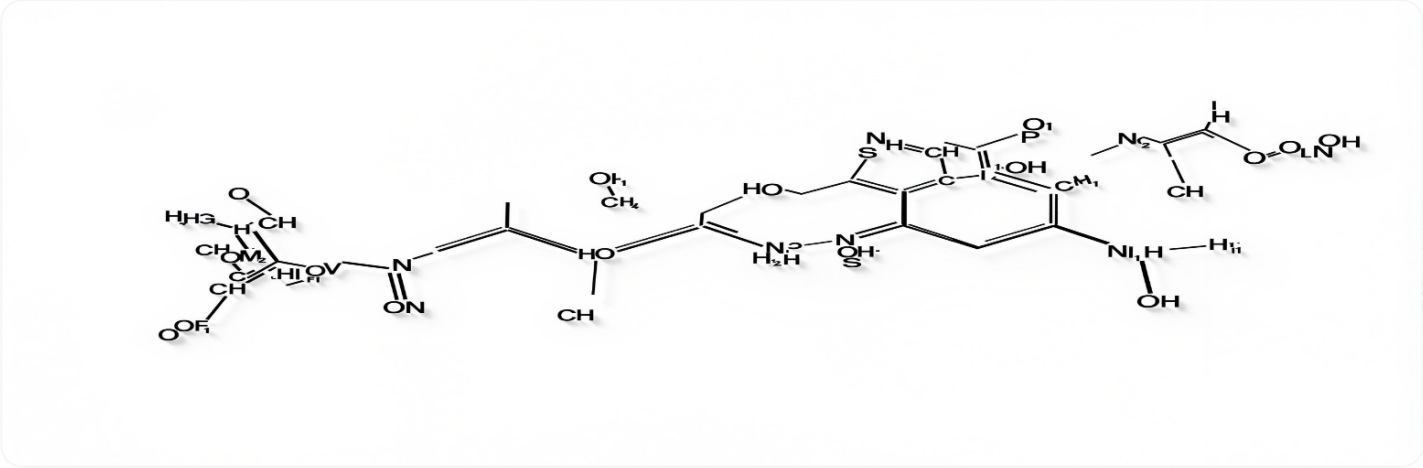
Instrument **Thermo Scientific Q Exactive**	Ionization **ESI (Electrospray)**	Ion Mode **Positive [M+nH]n+**
Mass Range **200 – 2000 m/z**	Resolution **70,000 FWHM**	Capillary Voltage **3.5 kV**
Source Temp. **320°C**	Sheath Gas **N_2, 35 arb**	Mass Accuracy **< 5 ppm**

DECONVOLUTED MASS RESULT

Theoretical MW	Observed MW	Mass Error
4113.73 Da	**4113.81 Da**	**< 2 ppm**

Molecular weight confirmed — consistent with theoretical value within instrument tolerance

MOLECULAR STRUCTURE — SEMAGLUTIDE



2D structural representation · Semaglutide · CAS 910463-68-2

PHYSICOCHEMICAL PROPERTIES

CAS Number **910463-68-2**	Molecular Weight **4113.73 Da**	Molecular Formula **$C_{187}H_{291}N_{45}O_{59}$**
Chain Length **31 amino acids**	Isoelectric Point (pI) **5.8 – 6.4**	LogP (calc.) **-2.1 (hydrophilic)**
H-Bond Donors **62**	H-Bond Acceptors **93**	Rotatable Bonds **126**

Primary Sequence (31 residues)

His – Aib – Glu – Gly – Thr – Phe – Thr – Ser – Asp – Val – Ser – Ser – Tyr – Leu – Glu – Gly – Gln – Ala – Ala – Lys – Glu – Phe – Ile – Ala – Trp – Leu – Val – Arg – Gly – Arg

aa Basic (Lys/Arg/His) aa Acidic (Asp/Glu) aa Aromatic (Phe/Trp/Tyr) aa Other

ANALYTICAL TEST RESULTS

Batch: PEPNEXA-2026-SEM-8216

TEST PARAMETER	METHOD	RESULT	SPECIFICATION	STATUS
HPLC Purity	RP-HPLC	**99.4%**	≥99.0%	PASS
Molecular Weight (MS)	ESI-MS	**4113.73 Da**	4113.58 ± 0.5 Da	PASS
Amino Acid Analysis	AAA	**Conforms**	Conforms to sequence	PASS
Endotoxin (LAL)	LAL	**0.42 EU/mg**	< 1.0 EU/mg	PASS
Residual Solvents	Ph. Eur.	**< ICH Q3C limits**	ICH Q3C Class 2	PASS
Water Content (KF)	Karl Fischer	**4.8%**	≤ 8.0%	PASS
Optical Rotation	Ph. Eur.	**-28.6°**	-25° to -32°	PASS
Peptide Content (AAA)	Ph. Eur.	**96.2%**	≥95.0%	PASS

8	8	100%
Tests Passed	Total Tests	Pass Rate

BATCH RELEASED — All tests conform to specifications
Approved by QP: Dr. Sophia R. Chen · Sep 04, 2026