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Document No.
**KERUIHK-QC-ET0067**

CERTIFICATE OF ANALYSIS

# Retatrutide

CAS No. 2381272-77-9

| Batch No. | Grade | Issue Date |
|---|---|---|
| PB-2026-RET-0067 | GMP | Apr 10, 2026 |

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ISO 9001:2015 GMP Certified

| Purity (HPLC) | Molecular Weight | Test Method | Endotoxin |
|---|---|---|---|
| 99.2% | 4731.39 Yes | RP-HPLC / ESI-MS | < 0.4 EU/mg |

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

## Amino Acid Sequence (39 residues)

Tyr-Aib-Glu-Gly-Thr-Phe-Thr-Ser-Asp-Tyr-Ser-Ile-Ala-Leu-Asp-Lys-Ile-Ala-Gln-Gln-Ala-Phe-Val-Gln-Trp-Leu-Ile-Ala-Gly-Gly-Pro-Ser-Ser-Gly-Ala-Pro-Pro-Pro-Ser-$NH_2$

Formula: $C_{223}H_{342}N_{46}O_{66}$ Length: **39 aa**

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

AUTHORIZED & RELEASED BY

**Dr. Amelia R. Foster**
**Head of GMP Quality Systems**
KeruiHk · Hong Kong
Issue Date: Apr 10, 2026

| QC Laboratory | Certification |
|---|---|
| Analytical Testing Dept. | ISO 9001:2015 • GMP |

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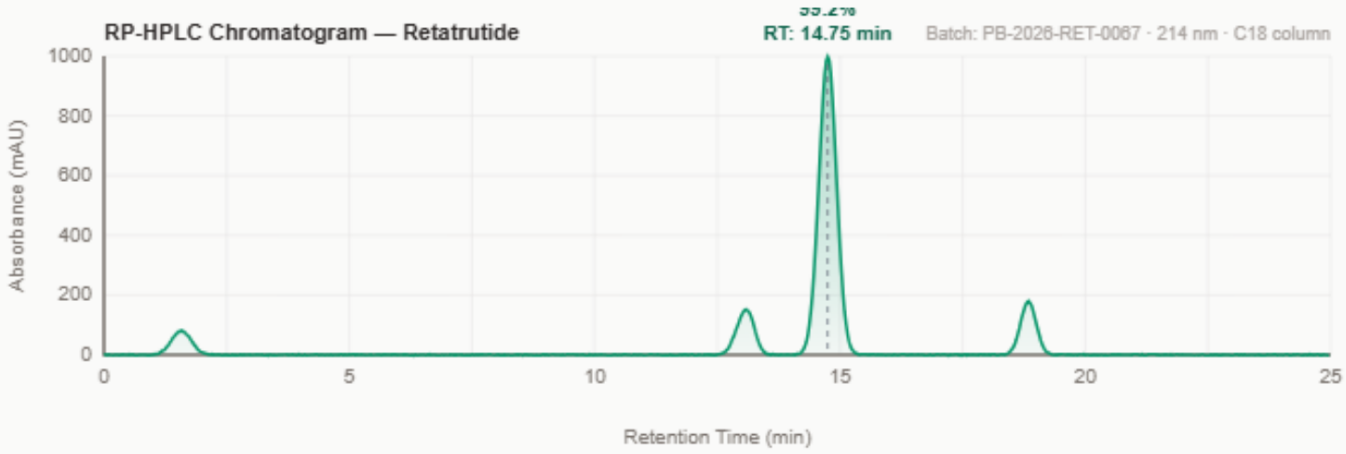
## RP-HPLC Purity Analysis

Reversed-phase HPLC · UV detection at 214 nm

**Purity: 99.2%**




### INSTRUMENT & METHOD PARAMETERS

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

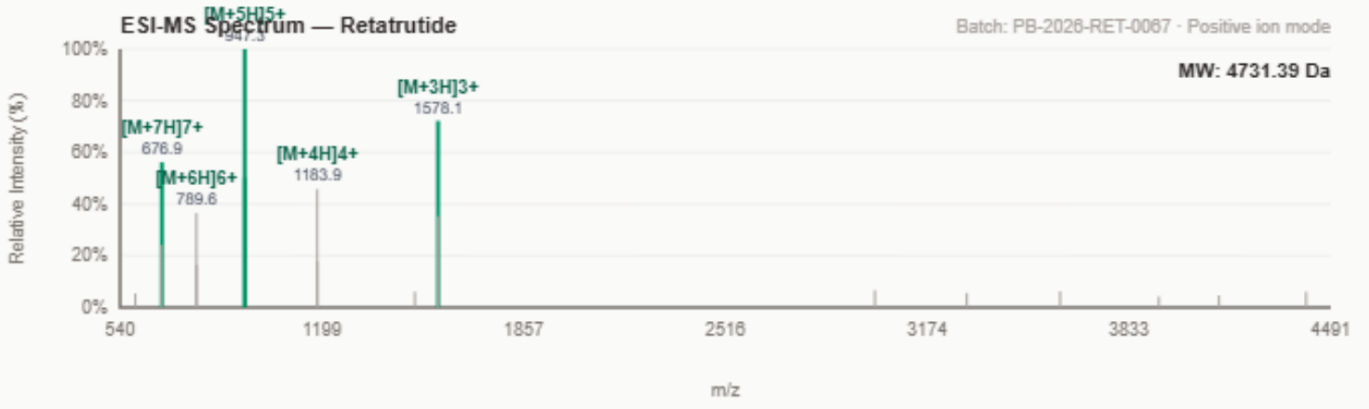
### PEAK INTEGRATION TABLE

| Peak # | RT (min) | Area | Area % | Assignment |
|---|---|---|---|---|
| 1 | 13.42 | 2,847,391 | 99.2% | **Retatrutide (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: 4731.39 Da**




Multiply charged ions [M+nH]n+ | Background / fragments ESI+ mode · Orbitrap

## MS INSTRUMENT PARAMETERS

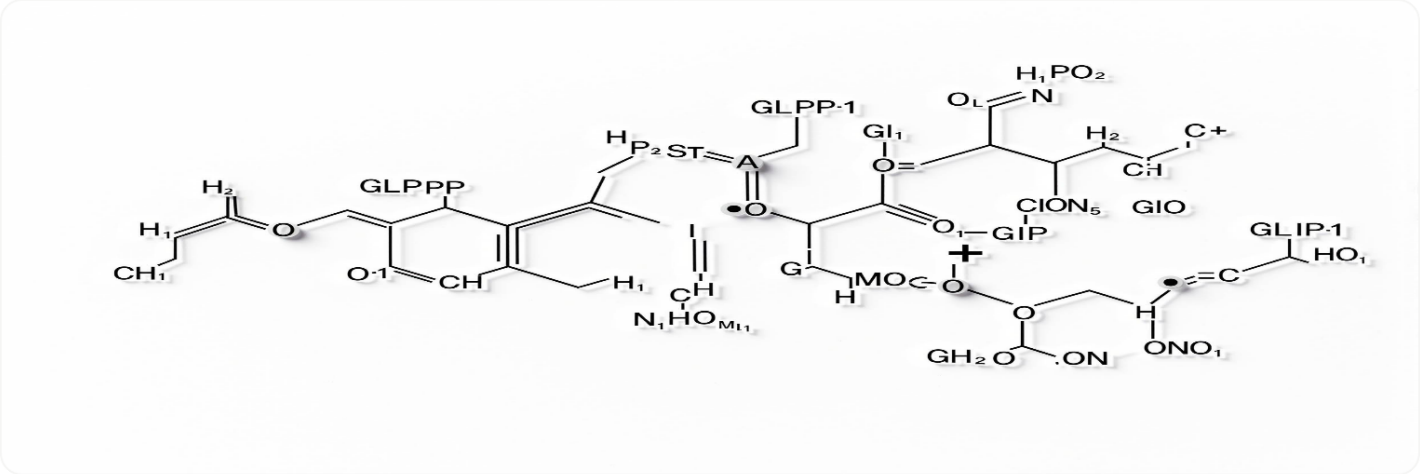
| | | |
|---|---|---|
| Instrument<br>**Thermo Scientific Q Exactive** | Ionization<br>**ESI (Electrospray)** | Ion Mode<br>**Positive [M+nH]n+** |
| Mass Range<br>**200 – 2000 m/z** | Resolution<br>**70,000 FWHM** | Capillary Voltage<br>**3.5 kV** |
| Source Temp.<br>**320°C** | Sheath Gas<br>**$N_2$,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

## DECONVOLUTED MASS RESULT

| Theoretical MW | Observed MW | Mass Error |
|---|---|---|
| **4731.39 Yes** | **4731.28 Yes** | **< 2 ppm** |

**Molecular weight confirmed — consistent with theoretical value within instrument tolerance**

## MOLECULAR STRUCTURE — RETATRUTIDE




2D structural representation · Retatrutide · CAS 2381272-77-9

### PHYSICOCHEMICAL PROPERTIES

| | | |
|---|---|---|
| CAS Number<br>**2381272-77-9** | Molecular Weight<br>**4731.39 Yes** | Molecular Formula<br>**$C_{223}H_{342}N_{46}O_{66}$** |
| Chain Length<br>**39 amino acids** | Isoelectric Point (pI)<br>**5.8 – 6.4** | LogP (calc.)<br>**-2.1 (hydrophilic)** |
| H-Bond Donors<br>**78** | H-Bond Acceptors<br>**117** | Rotatable Bonds<br>**158** |

### Primary Sequence (39 residues)

Tyr – Aib – Glu – Gly – Thr – Phe – Thr – To be – Asp – Tyr – To be – With – Land – Leu – Asp – Light – With – Land – Gln – Gln – Land – Phe – Val – Gln – Trp – Leu – With – Land – Gly – Gly – Pro – To be – To be – Gly – Land – Pro – Pro – Pro – To be – $NH_2$

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