# Certificate of Analysis

LIQUILABS
Analytical services

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**Liquilabs s.r.o.**
Inovační 122
252 41 Zlatníky-Hodkovice
Czechia
www.liquilabs.cz

Verify Results Online

## Sample Identification

| | |
|---|---|
| **Sample Name** | GLP 3 10 mg |
| **Batch Number** | RT102610 |
| **Date Published** | 2026-09-23 06:04 |

## Results for LYO-0951

| Peptides | Result | Unit | Uncertainty | Acceptable Range |
|---|---|---|---|---|
| Retatrutide Assay<br>Peptide Screening 0.1% TFA | 8.91 | *mg* | [± 0.04] | |
| Retatrutide Purity<br>Peptide Screening 0.1% TFA | 99.7 | *%* | [± 0.5] | |
| Retatrutide Identification by Spectrum (FTIR)<br>Peptide Screening 0.1% TFA | 989 | | [± 5] | |
| Retatrutide Identification by RT<br>Peptide Screening 0.1% TFA | 0.999 | | [± 0.005] | |

| Microbiology | Result | Unit | Uncertainty | Acceptable Range |
|---|---|---|---|---|
| Bacterial Endotoxin Chromgenic<br>USP<85>/ Eur. Ph. 2.6.14. Bacterial Endotoxin Chromgenic Test | 0.016 | *EU/mg* | [± 0] | |

| Mass Spectrometry | Result | Unit | Uncertainty | Acceptable Range |
|---|---|---|---|---|
| Molecular Ion Mass Identification (MS Deconvolution)<br>Mass Spectrometry Identity | 4731 | *Da* | [± 1] | |

| LIQUILABS Analytical services | Method Specification | |
|---|---|---|
| Determination of identity, content and purity of Retatrutide | | |
| *Document number* RETA_008_2026 | *Superseded document* - | *Number of pages* 4 |

# 1. Content Assesment

## 1.1. Instrumentation

| Module | Name | Serial Number |
|---|---|---|
| System Controller | Shimadzu CBM-40 Lite | L221226351398 |
| Degassing Unit | Shimadzu DGU-403 | NA |
| Pump | Shimadzu LC-40B XR | L22146350580 |
| Autosampler | Shimadzu SIL-40C XR | L22216351622 |
| Colum Thermostat | Shimadzu CTO-40S | L22236351602 |
| PDA Detector | Shimadzu SPD-M40 | L22276352808 |
| SQ MS Detector | Shimadzu LCMS-2050 | O12476200760 |

## 1.2. Chromatographic conditions

| Chromatographic conditions | |
|---|---|
| Eluent A | 0.1% DFA in Water (HPLC, Gradient Grade) |
| Eluent B | 0.1% DFAin Acetonitrile (HPLC, Gradient Grade) |
| Flow rate | 0.8 mL/min |
| Program | Gradient elution |
| Injection volume | 2 µL |
| Colum Temperature | 60°C |
| Column | Waters XSelect CSH C18, 100x2.1mm 2.5µm |
| Detection wavelength | 280nm |

| Gradient Program | | |
|---|---|---|
| Time [min] | A [%] | B [%] |
| 1 | 98 | 2 |
| 13.99 | 35 | 65 |
| 14 | 5 | 95 |
| 15 | 5 | 95 |
| 15.01 | 98 | 2 |
| 19 | end | |

1



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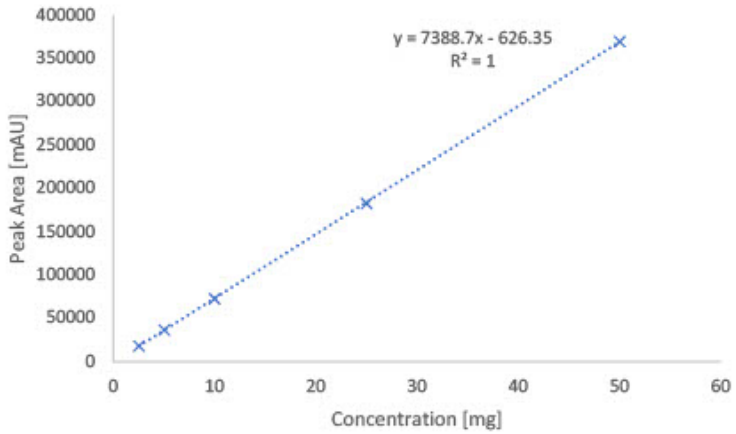
### 1.3. Sample preparation

Whole amount of container was dissolved in 2mL of water (LCMS Grade). 100 µL of sample was transferred to HPLC vial and diluted by 900 µL water (LCMS Grade) and submitted for analysis.

### 1.4. Calibration curve

| Calibration curve detail | |
|---|---|
| Quantitative method | External Standard |
| Calibration Type | Linear |
| Number of calibration points | 5 |
| Force through Zero | Enabled |
| Weighting Method | None |




2



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# 2. Purity assessment

## 2.1 Instrumentation

| Module | Name | Serial Number |
|---|---|---|
| System Controller | Shimadzu CBM-40 Lite | L221226351398 |
| Degassing Unit | Shimadzu DGU-403 | NA |
| Pump | Shimadzu LC-40B XR | L22146350580 |
| Autosampler | Shimadzu SIL-40C XR | L22216351622 |
| Colum Thermostat | Shimadzu CTO-40S | L22236351602 |
| PDA Detector | Shimadzu SPD-M40 | L22276352808 |
| SQ MS Detector | Shimadzu LCMS-2050 | O12476200760 |

## 2.2 Chromatographic conditions

| Chromatographic conditions | |
|---|---|
| Eluent A | 0.1% DFA in Water (HPLC, Gradient Grade) |
| Eluent B | 0.1% DFAin Acetonitrile (HPLC, Gradient Grade) |
| Flow rate | 0.8 mL/min |
| Program | Gradient elution |
| Injection volume | 2 µL |
| Colum Temperature | 60°C |
| Column | Waters XSelect CSH C18, 100x2.1mm 2.5µm |
| Detection wavelength | 225nm |

| Gradient Program | | |
|---|---|---|
| Time [min] | A [%] | B [%] |
| 1 | 98 | 2 |
| 13.99 | 35 | 65 |
| 14 | 5 | 95 |
| 15 | 5 | 95 |
| 15.01 | 98 | 2 |
| 19 | end | |

## 2.3 Purity assesment

Purity of compound assesed by area normalization method, comparing area of each peak to sum of area of all peaks detected at wavelenght of 225 nm.

3



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# 3. Identity Assessment

## 3.1 Instrumentation

| Module | Name | Serial Number |
|---|---|---|
| System Controller | Shimadzu CBM-40 Lite | L221226351398 |
| Degassing Unit | Shimadzu DGU-403 | NA |
| Pump | Shimadzu LC-40B XR | L22146350580 |
| Autosampler | Shimadzu SIL-40C XR | L22216351622 |
| Colum Thermostat | Shimadzu CTO-40S | L22236351602 |
| PDA Detector | Shimadzu SPD-M40 | L22276352808 |
| SQ MS Detector | Shimadzu LCMS-2050 | O12476200760 |

## 3.2 Chromatographic conditions

| Chromatographic conditions | |
|---|---|
| Eluent A | 0.1% DFA in Water (HPLC, Gradient Grade) |
| Eluent B | 0.1% DFAin Acetonitrile (HPLC, Gradient Grade) |
| Flow rate | 0.8 mL/min |
| Program | Gradient elution |
| Injection volume | 2 µL |
| Colum Temperature | 60ºC |
| Column | Waters XSelect CSH C18, 100x2.1mm 2.5µm |
| Detection wavelength | 280nm |

| Gradient Program | | |
|---|---|---|
| Time [min] | A [%] | B [%] |
| 1 | 98 | 2 |
| 13.99 | 35 | 65 |
| 14 | 5 | 95 |
| 15 | 5 | 95 |
| 15.01 | 98 | 2 |
| 19 | end | |

## 3.3 Molecular Ion Mass evaluation

Molecular ion mass was determined by deconvolution of multiply charged ESI-MS spectra to calculate the average neutral (zero-charge) molecular mass by equation:

$$M(neutral) = (z_i((mz_i) - H)) - ME$$

Where:
$mz_i$ - Measured mass of charged particle
$z_i$ - charge
H - proton mass (1.0076 Da)
ME – mass error



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# Analysis Report

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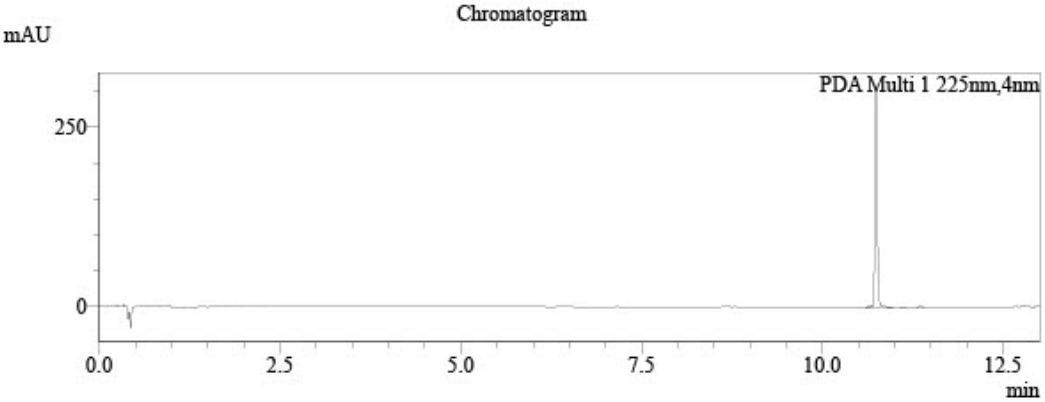
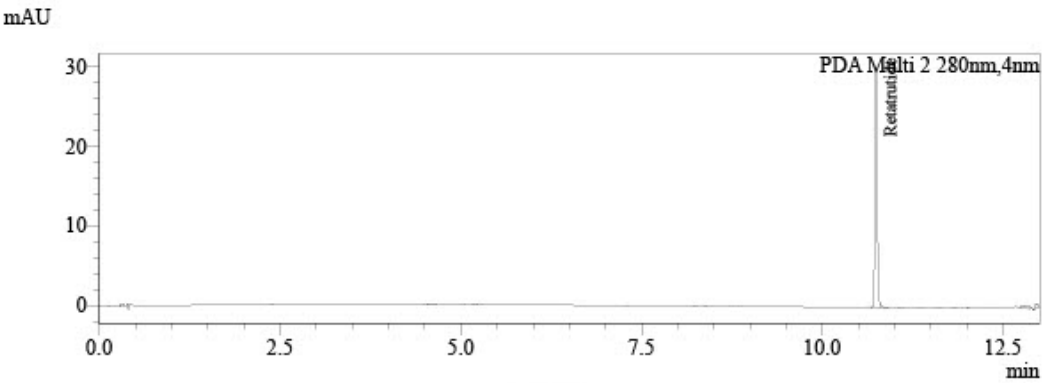
## Analysis of quantity of active ingredient by UHPLC with MS detection

Sample Information

| | |
|---|---|
| Injection Volume | : 2 |
| Data File | : LYO-0951__034.lcd |
| Method File | : Peptide Screening_DFA_Group A.lcm |
| Date Acquired | : 9/19/2026 4:47:45 AM |

Chromatogram




Peak Table

PDA Ch1 225nm

| Peak# | Name | Ret. Time | Area | Area% | Conc. | Unit |
|---|---|---|---|---|---|---|
| 1 | | 10.643 | 592 | 0.088 | 0.000 | |
| 2 | | 10.742 | 673847 | 99.678 | 0.000 | |
| 3 | | 10.924 | 104 | 0.015 | 0.000 | |
| 4 | | 11.110 | 319 | 0.047 | 0.000 | |
| 5 | | 11.356 | 1165 | 0.172 | 0.000 | |
| Total | | | 676026 | 100.000 | | |

Peak Table

PDA Ch2 280nm

| Peak# | Name | Ret. Time | Area | Area% | Conc. | Unit |
|---|---|---|---|---|---|---|
| 1 | Retatrutide | 10.742 | 65188 | 88.743 | 8.907 | mg |
| 2 | | 12.774 | 1830 | 2.491 | 0.000 | |
| 3 | | 12.961 | 2161 | 2.942 | 0.000 | |
| 4 | | 14.233 | 4279 | 5.825 | 0.000 | |



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| Peak# | Name | Ret. Time | Area | Area% | Conc. | Unit |
|---|---|---|---|---|---|---|
| Total | | | 73458 | 100.000 | | |





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# Analysis Report

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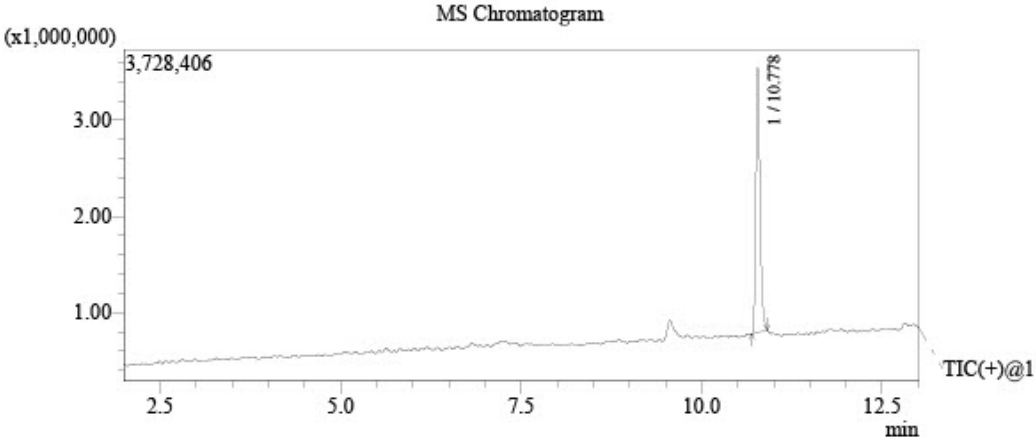
## Identification of active ingredient by UHPLC Mass Spectrometr

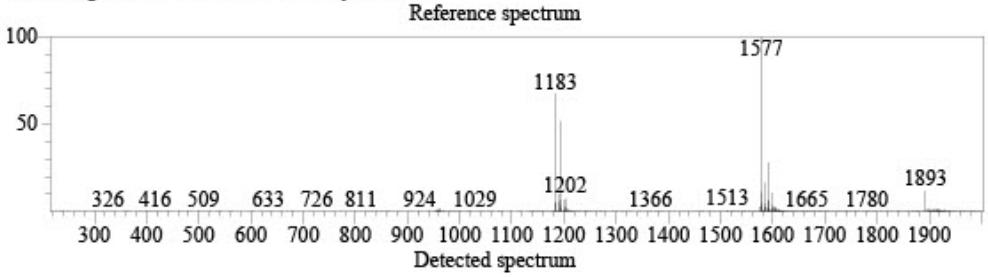
MS Chromatogram




Library Search

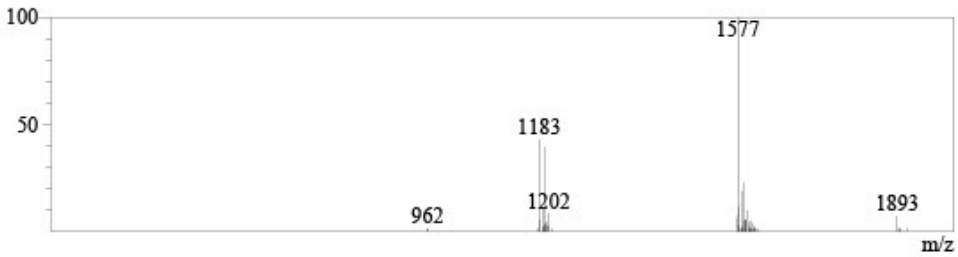
Base Peak: 1577(624642)
Scan Range: 220.00 - 2000.00 Porality: Positive

Reference spectrum




Detected spectrum

Library: Peptide Screening_DFA.lib
Formula: C221H342N46O68 CAS: 238189-83-2 Mol.Weight: 4731(0!=)
Compound Name: Retatrutide




3 / 3



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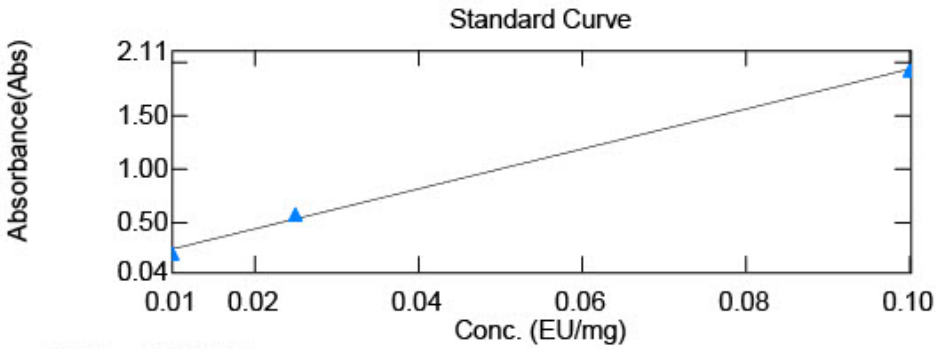
# Endotoxin Determination Report

File Information
Filename: C:\UVVis-Data\Data\File_260918-2_154452.vqud
Date/Time: 09/18/2026 04:54:59 PM

Instrument Information
Instrument Type: UV-1900 Series
Model (S/N): UV-1900i (A12536253123)




y = 18.7714 x + 0.0637890
r2 = 0.99801

| | Sample Name | Conc | Raw_WL545.0 | Dilution Rate |
|---|---|---|---|---|
| 1 | LYO-0926 | 0.022 | 0.0847 | 20.00 |
| 2 | LYO-0927 | 0.022 | 0.0840 | 20.00 |
| 3 | LYO-0628 | 3.762 | 1.8295 | 40.00 |
| 4 | LYO-0929 | 0.146 | 0.2004 | 20.00 |
| 5 | LYO-0930 | 0.031 | 0.0928 | 20.00 |
| 6 | LYO-0931 | 3.089 | 1.5134 | 40.00 |
| 7 | LYO-0932 | 2.149 | 1.0724 | 40.00 |
| 8 | LYO-0933 | 0.428 | 0.4655 | 20.00 |
| 9 | LYO-0934 | 0.251 | 0.2992 | 20.00 |
| 10 | LYO-0935 | 0.037 | 0.0986 | 20.00 |
| 11 | LYO-0936 | 0.171 | 0.2243 | 20.00 |
| 12 | LYO-0937 | 0.036 | 0.0974 | 20.00 |
| 13 | LYO-0938 | 1.105 | 0.5824 | 40.00 |
| 14 | LYO-0939 | 3.203 | 1.5670 | 40.00 |
| 15 | LYO-0940 | 2.518 | 1.2455 | 40.00 |
| 16 | LYO-0941 | 2.266 | 1.1272 | 40.00 |
| 17 | LYO-0942 | 0.079 | 0.1380 | 20.00 |
| 18 | LYO-0943 | 0.034 | 0.0959 | 20.00 |
| 19 | LYO-0944 | 0.031 | 0.0928 | 20.00 |
| 20 | LYO-0945 | 0.022 | 0.0849 | 20.00 |



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| | Sample Name | Conc | Raw_WL545.0 | Dilution Rate |
|---|---|---|---|---|
| 21 | LYO-0946 | 0.042 | 0.1031 | 20.00 |
| 22 | LYO-0947 | 0.106 | 0.1637 | 20.00 |
| 23 | LYO-0948 | 0.019 | 0.0820 | 20.00 |
| 24 | LYO-0949 | 0.013 | 0.0763 | 20.00 |
| 25 | LYO-0950 | 0.079 | 0.1382 | 20.00 |
| 26 | LYO-0951 | 0.087 | 0.1458 | 20.00 |
| 27 | LYO-0952 | 0.045 | 0.1057 | 20.00 |
| 28 | LYO-0953 | 0.045 | 0.1062 | 20.00 |
| 29 | LYO-0954 | 0.036 | 0.0976 | 20.00 |
| 30 | LYO-0966 | 3.815 | 1.8541 | 40.00 |
| 31 | LYO-0967 | 0.057 | 0.1169 | 20.00 |
| 32 | LYO-0955 | 20.436 | 1.2626 | 320.00 |
| 33 | LYO-0956 | 23.200 | 1.1525 | 400.00 |
| 34 | LYO-0957 | 1.027 | 0.5456 | 40.00 |
| 35 | LYO-0958 | 3.753 | 1.8249 | 40.00 |
| 36 | LYO-0959 | 4.137 | 2.0051 | 40.00 |
| 37 | LYO-0960 | 0.014 | 0.0770 | 20.00 |
| 38 | LYO-0961 | 0.013 | 0.0757 | 20.00 |
| 39 | LYO-0962 | 0.046 | 0.1069 | 20.00 |
| 40 | LYO-0963 | 0.059 | 0.0748 | 100.00 |



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| | Sample Name | Conc | Raw_WL545.0 | Dilution Rate |
|---|---|---|---|---|
| 41 | LYO-0964 | 0.132 | 0.0885 | 100.00 |
| 42 | LYO-0965 | 0.274 | 0.1153 | 100.00 |



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**Responsibles**



**Mr. Ján Galbavý**
*CEO*

Analysis results relate only to the samples tested.
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