

CERTIFICATE OF ANALYSIS

| | |
|------------------------------|--|
| Product Name | Tirzepatide (LY3298176) peptide (TFA removed), Cat.#: 318942 |
| Lot No. | MTFA30563-1007 |
| Sequence | Tyr- { Aib } -Glu-Gly-Thr-Phe-Thr-Ser-Asp-Tyr-Ser-Ile- { Aib } -Leu-Asp-Lys-Ile-Ala-Gln- { diacid-C20-gamma-Glu-(AEEA)2-Lys } -Ala-Phe-Val-Gln-Trp-Leu-Ile-Ala-Gly-Gly-Pro-Ser-Ser-Gly-Ala-Pro-Pro-Pro-Ser-NH ₂ |
| Dissolution condition | 100% H ₂ O |
| Length | 39AA |
| Modification | sodium salt |
| Molecular Weight (MW) | 4813.45 |
| Storage | -20°C |

| Test Items | Specifications | Results |
|----------------------------|---------------------------------------|-----------------------------------|
| MW by MS | 4812.75 | Conforms |
| Purity by HPLC | >95% | 97.390% |
| Peptide Content | N/A | N/A |
| Moisture content | N/A | N/A |
| Acetic acid content | N/A | N/A |
| Appearance | White to off-white lyophilized powder | Conforms |
| Quantity | 1g | 15.0mg*22 +10.0mg*20 +5.0mg*94 |

NovoPro Bioscience Inc. (hereafter NovoPro) warrants material of said quality at the time of sale. It is the sole responsibility of the customers to determine the adequacy of all materials for any intended or specific purpose or use. NovoPro's sole obligation is to replace the material up to the extent of the purchase price. This warranty applies only to products in original packaging and does not apply to a product which has been tampered with or altered in any way in or which has been misused or damaged by accident or negligence. All claims must be received writing (by fax or email) within 30 days from date when product arrive at the destination city and failure to do so shall constitute a waiver by customers for any and all such claims.

Certified by:



Quality Assurance Department

Oct/19/2023



Net Peptide Content Test Results

Third Party Inspection Institution:

Shanghai Institute of Organic Chemistry, Chinese Academy of Sciences
Platform: Thermo Flash EA 1112 Flash 2000

| | |
|---------------------------------|--|
| Sample | Tirzepatide (LY3298176) peptide Cat.#: 318942 Lot#: MTF A30563-1007 |
| N, C, H contents | |
| Tirzepatide (LY3298176) peptide | Test1 and test2 N(%)=13.15, 13.17 C(%)=51.70, 51.70 H(%)=6.886, 6.885 |
| Net Peptide Content(NPC) | |
| Tirzepatide (LY3298176) peptide | 91.80% |
| Molecular Formula | |
| Tirzepatide (LY3298176) peptide | $C_{225}H_{348}N_{48}O_{68}$ |

Certified by: Hong YUAN

Date: Oct-19-2023

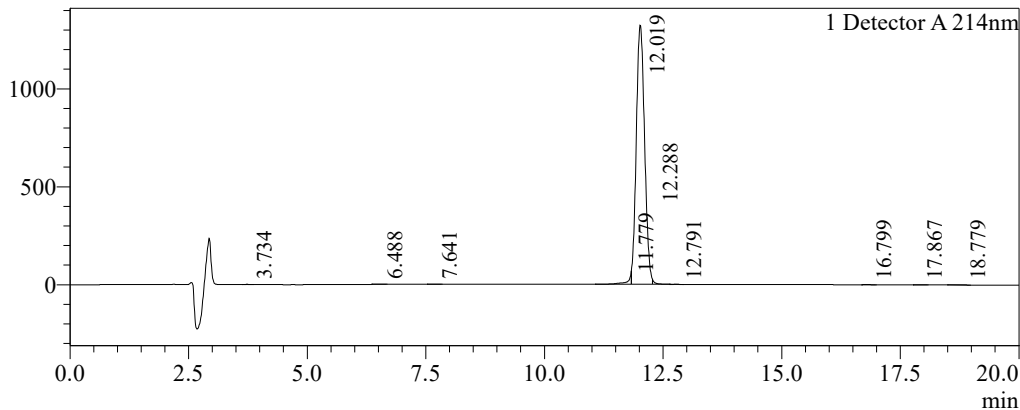
Sample Information

Order ID : MTF30563
 Name : Tirzepatide
 Sequence : Tyr- {Aib}-Glu-Gly-Thr-Phe-Thr-Ser-Asp-Tyr-Ser-Ile- {Aib}-Leu
 -Asp-Lys-Ile-Ala-Gln- {diacid-C20-gamma-Glu-(AEEA)2-Lys}-Ala
 -Phe-Val-Gln-Trp-Leu-Ile-Ala-Gly-Gly-Pro-Ser-Ser-Gly-Ala-Pro
 -Pro-Pro-Ser-NH2
 Lot. No : MTF30563-1007
 Pump A : 0.1% Trifluoroacetic in 100% water
 Pump B : 0.1% Trifluoroacetic in 100% acetonitrile
 Total Flow : 1ml/min
 Wavelength : 214nm
 Analytical column type : Phenomenex Luna® 5 µm C18 (2) (4.6*250mm*5 µm)
 Dissolution method : 30% ACN+70% H2O
 Inj. Volume : 30ul

| Time | Module | Action | Value |
|-------|------------|--------|-------|
| 0.01 | Pumps | B.Conc | 45 |
| 20.00 | Pumps | B.Conc | 65 |
| 33.00 | Pumps | B.Conc | 100 |
| 38.00 | Pumps | B.Conc | 100 |
| 40.00 | Pumps | B.Conc | 45 |
| 50.00 | Controller | Stop | |

Chromatogram

mV

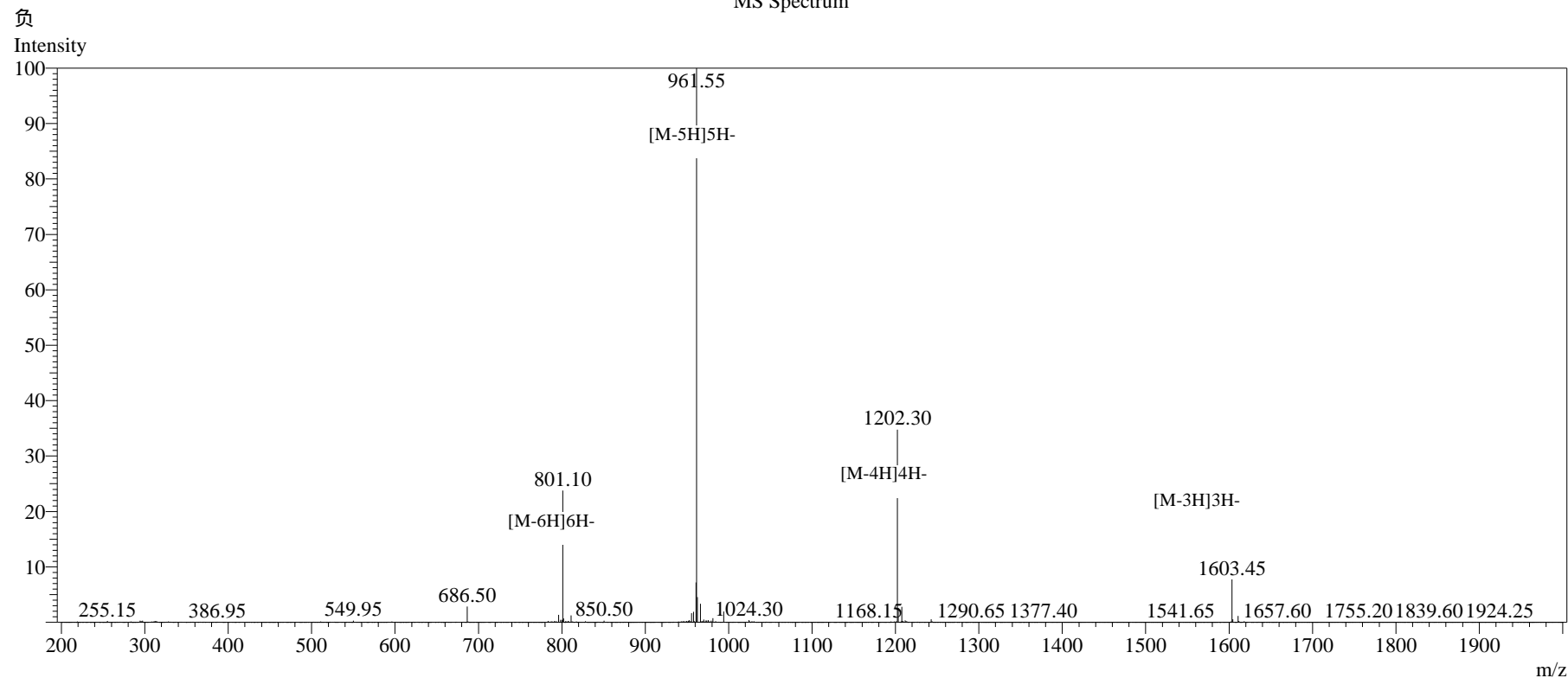


Peak Table

Detector A 214nm

| Peak# | Ret. Time | Area | Height | Area% |
|-------|-----------|----------|---------|---------|
| 1 | 3.734 | 8195 | 1823 | 0.050 |
| 2 | 6.488 | 2624 | 265 | 0.016 |
| 3 | 7.641 | 2395 | 336 | 0.014 |
| 4 | 11.779 | 317769 | 19175 | 1.921 |
| 5 | 12.019 | 16107102 | 1322065 | 97.390 |
| 6 | 12.288 | 81021 | 22544 | 0.490 |
| 7 | 12.791 | 1806 | 264 | 0.011 |
| 8 | 16.799 | 7424 | 891 | 0.045 |
| 9 | 17.867 | 3688 | 496 | 0.022 |
| 10 | 18.779 | 6765 | 648 | 0.041 |
| Total | | 16538789 | 1368506 | 100.000 |

MS Spectrum



Sample Information

| | | | | | |
|--------------------|---|---------------------|------------|-------------|--------------------------------|
| Dissolution method | :30% ACN+70% H ₂ O | Interface | :ESI | Prerod Bias | :+4.5kv |
| Date Acquired | :2023/10/16 15:04:44 | Nebulizing Gas Flow | :1.50L/min | Detector | :-0.2kv |
| Injection Volume | :0.2ul | CDL Temp | :250°C | T.Flow | :0.2ml/min |
| Block Temp | :200 | CDL Volt | :0v | B.conc | :50% H ₂ O/50% MEOH |
| Order ID | :MTFA30563 | | | | |
| Name | :Tirzepatide | | | | |
| Sequence | :Tyr-{Aib}-Glu-Gly-Thr-Phe-Thr-Ser-Asp-Tyr-Ser-Ile-{Aib}-Leu-Asp-Lys-Ile-Ala-Gln-{diacid-C20-gamma-Glu-(AEEA)2-Lys}-Ala-Phe-Val-Gln-Trp-Leu-Ile-Ala-Gly-Gly-Pro-Ser-Ser-Gly-Ala-Pro-Pro-Pro-Ser-NH ₂ | | | | |
| Lot.No | :MTFA30563-1007 | | | | |
| Theoretical | :4813.45 | | | | |
| Observed | :4812.75 | | | | |

Instructions for dissolving tirzepatide peptide

The tirzepatide is soluble in 100% H₂O or 1xPBS. The maximum concentration is 5.0 mg/ml.

The steps are as below:

1. Adding 1.0 ml ultrapure water to the 1.5 ml screw cap tube of tirzepatide;
2. Wait about 5 minutes at room temperature until the solution is clear, which indicates the peptide is fully dissolved;
3. Use a sterile 0.22 μ m membrane filter for a particle-free and bacteria-free tirzepatide solution.

For example, Catalog# SLGPR33RB, Millipore Millex-GP Syringe Filter Unit, 0.22 μ m, polyethersulfone, 33 mm, gamma sterilized.