

CERTIFICATE OF ANALYSIS

Product Name	Tirzepatide (LY3298176), TFA removed, Cat.# 318942
Lot No.	MTFA30985-0202
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	4813.45
(MW)Storage	-20°C

	Specifications	Results
Appearance	White to off-white lyophilized powder	Conforms
MW by MS	4813.5±1Da	4813.4Da
Dissolution	Tested: Water Acetonitrile DMSO	Water: soluble (100mg/ml) Acetonitrile: insoluble (<0.1mg/ml) DMSO: soluble (100mg/ml)
pH value	6.0-8.0	7.6
TFA	≤0.5%	0%, undetectable
Acetate	≤5.0%	0%, undetectable
Sodium salt	≤5.0%	1.90%
Purity	≥98.0%	99.38%
Impurity	Single Impurity ≤1.0%	0.4%
	Total Impurity ≤2.0%	0.6%
Polymer	≤5.0%	0%, undetectable
Net peptide content (NPC)	≥80.0%	91.8%
Water	≤10.0%	2.8%

Certified by:



Quality Assurance Department

Feb/22/2024

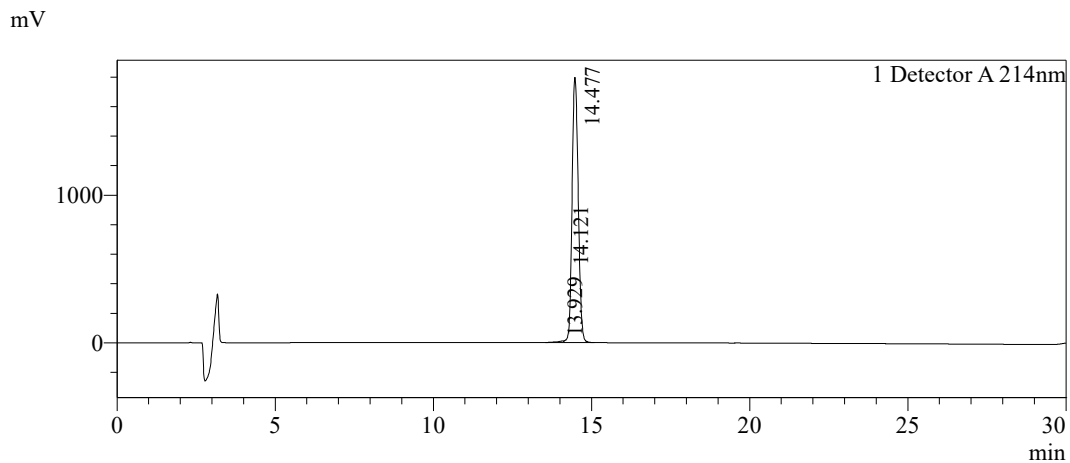


Sample Information

Order ID :MTFA30985
 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 :MTFA30985-0202
 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 :100%H2O
 Inj. Volume : 30ul

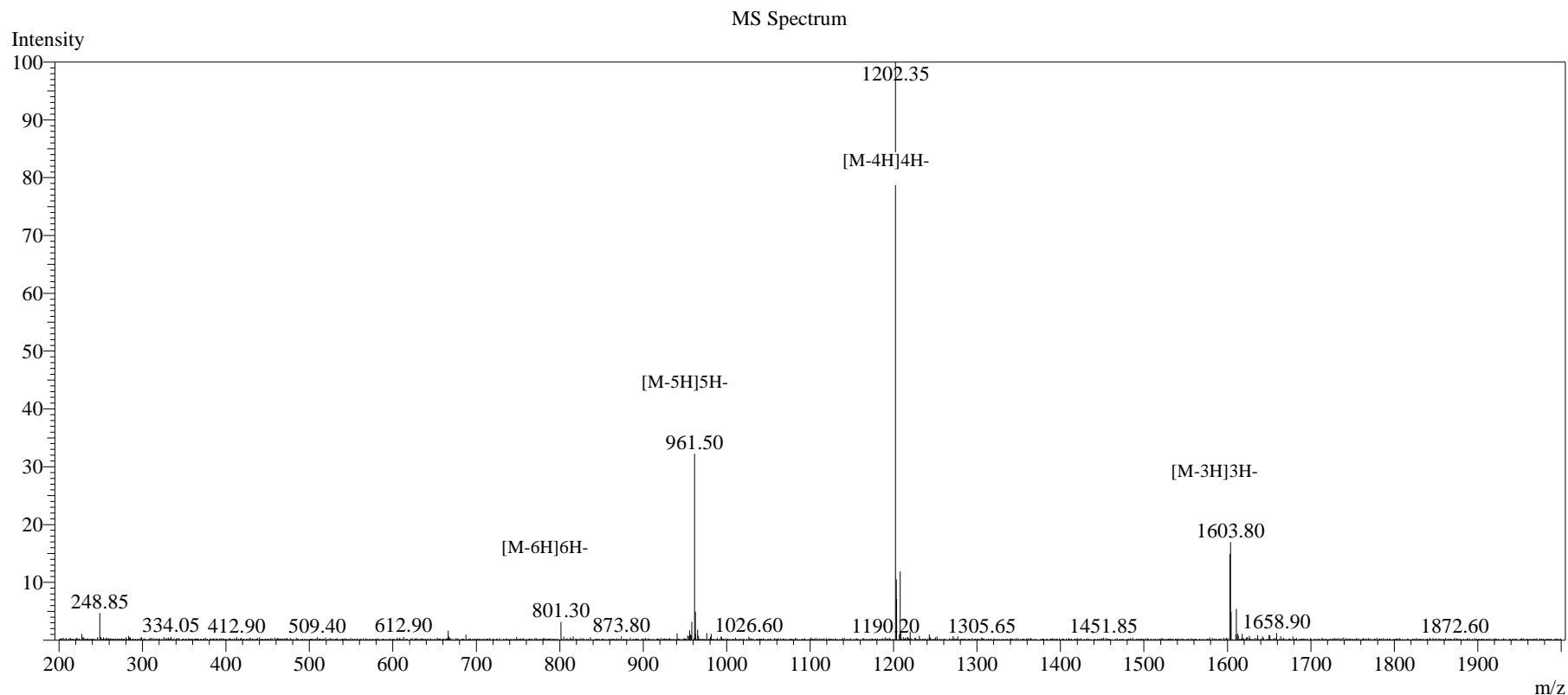
Time	Module	Action	Value
0.01	Pumps	B.Conc	45
30.00	Pumps	B.Conc	75
33.00	Pumps	B.Conc	100
38.00	Pumps	B.Conc	100
40.00	Pumps	B.Conc	45
50.00	Controller	Stop	

Chromatogram



Peak Table

Detector A 214nm				
Peak#	Ret. Time	Area	Height	Area%
1	13.929	52536	4526	0.214
2	14.121	99156	11295	0.405
3	14.477	24359806	1796701	99.381
Total		24511499	1812522	100.000



Sample Information

Dissolution method	:15% ACN+85% H ₂ O	Interface	:ESI	Prerod Bias	:+4.5kv
Date Acquired	:2024/02/20 16:42:44	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	:MTFA30985				
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	:MTFA30985-0202				
Theoretical	:4813.45				
Observed	:4813.40				

Instructions for dissolving Tirzepatide (LY3298176) 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 μm membrane filter for a particle-free and bacteria-free tirzepatide solution.

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