

## CERTIFICATE OF ANALYSIS

<b>Product Name:</b>	<b>Tirzepatide</b>	<b>CAS No.</b>	2023788-19-2
<b>Molecular Formula</b>	$C_{225}H_{348}N_{48}O_{68}$	<b>Molecular Weight</b>	4813.45
<b>Structural formula</b>	Tyr-Aib-Glu-Gly-Thr-Phe-Thr-Ser-Asp-Tyr-Ser-Ile-Aib-Leu-Asp-Lys-Ile-Ala-Gln-Lys(PEG2-PEG2- $\gamma$ -Glu- Eicosanedioi acid)-Ala-Phe-Val-Gln-Trp-Leu-Ile-Ala-Gly-Gly-Pro-Ser-Ser-Gly-Ala-Pro-Pro-Pro-Ser-N		
<b>Batch No.</b>	TZP-231125	<b>Quantity</b>	25g
<b>Manufacturing Date</b>	November 25, 2023	<b>Retest TO</b>	November 24, 2025
<b>Analytical results</b>			
<b>Items</b>	<b>Specifications</b>		<b>Results</b>
<b>Appearance</b>	White or off-white powder		White powder
<b>Solubility</b>	Can be dissolved to 5mg/ml in pure water		Conform
<b>Molecular Ion Mass</b>	4813.45		Conform
<b>pH</b>	7.0~9.0(C=5mg/ml)		7.4
<b>Water Content(K.F)</b>	NMT 8.0%		4.1%
<b>Purity (HPLC)</b>	NLT 98.0%		99.45%
<b>Related substances (HPLC)</b>	The largest individual impurity test NMT 1.0%		0.25%
	The total impurities test NMT 2.0%		0.55%
<b>Residual solvent(GC)</b>	Methylene chloride: NMT 600ppm		N.D
	Acetonitrile: NMT 410ppm		25ppm
	Methanol: NMT 3000ppm		N.D
	NN-Dimethylformamide: NMT 800ppm		N.D
	Isopropyl ether: NMT 5000ppm		N.D
<b>Acid group ions(HPLC)</b>	TFA Content: NMT 1.0%		N.D
	Acetic acid Content: NMT 15.0%		N.D
<b>Bacterial Endotoxins</b>	NMT 10 EU/mg		Conform
<b>Microbial Limits</b>	TAMC: NMT 50 cfu/0.1g		Conform
	TYMC: NMT 50 cfu/0.1g		Conform
<b>Sodium ion</b>	NMT 5.0%		4.20%
<b>High molecular protein</b>	NMT 0.5%		N.D
<b>Peptide Content</b>	NLT 80.0%		91.40%
<b>Conclusion</b>	This product conforms to the standard.		
<b>Stonge Conditions:</b>	Keep in tight container, protect from light, store at a temperanure of -20±5°C.		

Inspector: Carlifor Wu

Verifier: Jack He