

CERTIFICATE OF ANALYSIS

Product Name:	Liraglutide		
Batch No.	231101		
Quantity	2.0g	Manufacturing Date	November 25, 2025
Expiry Date	November 24, 2023	Report Date	November 30, 2023
Analytical Results			
Items	Specifications		Results
Appearance	White or almost white powder or loose solid substance, hygroscopic		White powder, hygroscopic
Solubility	Freely soluble in water and 0.1 mol/L sodium hydroxide solution, practically insoluble in acetonitrile.		Conforms
Specific optical rotation	-15°~-25° (calculated with reference to the anhydrous substance)		-23.9°
Identification (1)	The retention time of the principal peak of the test solution should be consistent with that of the reference solution.		Conforms
Identification (2) Mass Spectrometry	3751.2±1		3751.6
Amino acid analysis	Asp: 0.8~1.2		Asp: 1.0
	Ser: 2.4~3.6		Ser: 2.5
	Glu: 4.0~6.0		Glu: 4.6
	Gly: 3.2~4.8		Gly: 3.7
	His: 0.8~1.2		His: 0.9
	Arg: 1.6~2.4		Arg: 1.9
	Thr: 1.6~2.4		Thr: 1.8
	Ala: 3.2~4.8		Ala: 3.8
	Tyr: 0.8~1.2		Tyr: 0.8
	Val: 1.6~2.4		Val: 1.9
	Lys: 0.8~1.2		Lys: 0.9
	He: 0.8~1.2		He: 1.0
	Leu: 1.6~2.4		Leu: 1.9
Phe: 1.6~2.4		Phe: 1.9	
pH	6.5~7.5		6.7
Clarity and color of solution	Clear and colorless		Conforms
Related substance	Largest single unspecified impurity: ≤0.5%		0.07%
	Total impurities: ≤3.0%		0.2%
Residual solvents	Methanol: ≤3000ppm		Conforms
	Dichloromethane: ≤600ppm		Conforms
	Acetonitrile: ≤410ppm		Conforms
	N,N-Dimethylformamide: ≤880ppm		Conforms
	Methyl tert-butyl ether: ≤5000ppm		Conforms
Water	≤5.0%		3.0%
Bacterial endotoxins	<10EU/mg		<5.0EU/mg
Assay	95.0%~105.0% (calculated with reference to the anhydrous substance)		97.9%
Conclusion	Complies with the in house standard		Conforms

Inspector: Carlifor Wu

Verifier: Jack He

