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Print Date: Jun 25th 2020

Certificate of Analysis

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Product Name: **Liraglutide** **Catalog No.: 6517** **Batch No.: 4**

CAS Number: 204656-20-2

1. PHYSICAL AND CHEMICAL PROPERTIES

Batch Molecular Formula: $C_{172}H_{265}N_{43}O_{51}$

Batch Molecular Weight: 3751.24

Physical Appearance: White lyophilised solid

Net Peptide Content: 84%

Counter Ion: TFA

Solubility: Soluble to 1 mg/ml in 0.01M PBS (pH 7.4)

Storage: Store at -20°C

Peptide Sequence: His-Ala-Glu-Gly-Thr-Phe-Thr-Ser-Asp-Val-Ser-Ser-Tyr-Leu-Glu-Gly-Gln-Ala-Ala-Lys-(γ-Glu-palmitoyl)-Glu-Phe-Ile-Ala-Trp-Leu-Val-Arg-Gly-Arg-Gly

2. ANALYTICAL DATA

HPLC: Shows 99% purity

Mass Spectrum: Consistent with structure

3. AMINO ACID ANALYSIS DATA

Amino Acid	Theoretical	Actual	Amino Acid	Theoretical	Actual
Ala	4.00	3.84	Lys	1.00	1.01
Arg	2.00	2.01	Met		
Asx	1.00	1.02	Phe	2.00	1.99
Cys			Pro		
Glx	5.00	4.97	Ser	3.00	2.96
Gly	4.00	4.06	Thr	2.00	1.99
His	1.00	1.05	Trp	1.00	Detected
Ile	1.00	0.97	Tyr	1.00	1.02
Leu	2.00	2.10	Val	2.00	2.02

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Product Name: **Liraglutide** **Catalog No.: 6517** **Batch No.: 4**

CAS Number: 204656-20-2

Description:

Highly potent, long-acting GLP-1 receptor agonist (EC_{50} = 61 pM). Acylated derivative of GLP-1 (7-37) (Cat. No. 5374). Inhibits food and water intake, causing lasting and reversible weight loss in normal and obese rats.

Physical and Chemical Properties:

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His-Ala-Glu-Gly-Thr-Phe-Thr-Ser-Asp-Val-Ser-Ser-Tyr-Leu-Glu-Gly-Gln-Ala-Ala-Lys-(γ-Glu-palmitoyl)-Glu-Phe-Ile-Ala-Trp-Leu-Val-Arg-Gly-Arg-Gly

Storage: Store at -20°C

Solubility & Usage Info:

Soluble to 1 mg/ml in 0.01M PBS (pH 7.4)

This product is supplied as a lyophilized solid and may be very hard to visualize. Solutions should be made by adding solvent directly to the vial. The vial should then be vortexed vigorously to ensure the product has completely dissolved.

Net Peptide Content: 84% (Remaining weight made up of counterions and residual water).

Counter Ion: TFA

Stability and Solubility Advice:

Some solutions can be difficult to obtain and can be encouraged by rapid stirring, sonication or gentle warming (in a 45-60°C water bath).

Peptides in solution are much less stable than in lyophilized form. This is especially true for peptides whose sequences contain amino acids such Cys, Met,Trp, Asn, Gln, and N-terminal Glu.

Therefore we recommend storing peptides in solution for as short a time as possible. Avoid repeated freeze thaw cycles by dividing the peptide solution into aliquots and storing the aliquots at -20°C. Any portion of an aliquot unused after thawing should be discarded.

Peptides stored in solution can occasionally be susceptible to bacterial degradation. We recommend using sterile solutions or passing the peptide solution through a 0.2 µm filter to remove potential bacterial contamination whenever possible.

References:

Larsen *et al* (2001) Systemic administration of the long-acting GLP-1 derivative NN2211 induces lasting and reversible weight loss in both normal and obese rats. Diabetes ***50*** 2530. PMID: 11679431.

Knudsen *et al* (2000) Potent derivatives of glucagon-like peptide-1 with pharmacokinetic properties suitable for once daily administration. J.Med.Chem. ***43*** 1664. PMID: 10794683.