

# PRODUCT INFORMATION



## Liraglutide

Item No. 45521

CAS Registry No.: 204656-20-2

Formal Name: L-histidyl-L-alanyl-L- $\alpha$ -glutamylglycyl-L-threonyl-L-phenylalanyl-L-threonyl-L-seryl-L- $\alpha$ -aspartyl-L-valyl-L-seryl-L-seryl-L-tyrosyl-L-leucyl-L- $\alpha$ -glutamylglycyl-L-glutamyl-L-alanyl-L-alanyl-N<sup>6</sup>-[N-(1-oxohexadecyl)-L- $\gamma$ -glutamyl]-L-lysyl-L- $\alpha$ -glutamyl-L-phenylalanyl-L-isoleucyl-L-alanyl-L-tryptophyl-L-leucyl-L-valyl-L-arginylglycyl-L-arginyl-glycine

Synonyms: NN 2211, NNC 90-1170

Peptide Sequence: H-HAEGTFTSDVSSYLEGQAAK[ $\gamma$ -Glu-C16]

EFIAWLVRGRG-OH

MF: C<sub>172</sub>H<sub>265</sub>N<sub>43</sub>O<sub>51</sub>

FW: 3,751.3

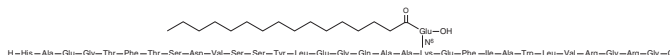
Purity:  $\geq$ 98%

Supplied as: A solid

Storage: -20°C

Stability:  $\geq$ 4 years

Information represents the product specifications. Batch specific analytical results are provided on each certificate of analysis.



### Laboratory Procedures

Liraglutide is supplied as a solid. Aqueous solutions of liraglutide can be prepared by directly dissolving the solid in aqueous buffers. Liraglutide is sparingly soluble (1-10 mg/ml) in PBS (pH 7.2). We do not recommend storing the aqueous solution for more than one day.

### Description

Liraglutide is an agonist of the glucagon-like peptide 1 receptor (GLP-1R) and a synthetic derivative of GLP-1 (7-37; Item No. 24887).<sup>1</sup> It increases cAMP accumulation in BHK cells expressing GLP-1R (EC<sub>50</sub> = 61 pM). Liraglutide (100-1,000 nM) inhibits cytokine- and free fatty acid-induced apoptosis of primary neonatal rat pancreatic  $\beta$ -cells by greater than 95 and 50%, respectively, effects that can be blocked by the GLP-1 receptor antagonist exendin-3 (9-39) (Item No. 19890) or the PI3 kinase inhibitor wortmannin (Item No. 10010591).<sup>2</sup> In a rat model of obesity induced by supplemental dietary candy, liraglutide (0.2 mg/kg, s.c., twice per day) decreases calorie intake, shifts food preference to a higher ratio of chow to candy, reverses weight and fat gains, and increases insulin sensitivity.<sup>3</sup> Formulations containing liraglutide have been used as adjuncts in the treatment of type 2 diabetes and for chronic weight management in overweight or obese adults.

### References

1. Knudsen, L.B., Nielsen, P.F., Huusfeldt, P.O., *et al.* Potent derivatives of glucagon-like peptide-1 with pharmacokinetic properties suitable for once daily administration. *J. Med. Chem.* **43**(9), 1664-1669 (2000).
2. Bregenholt, S., Møldrup, A., Blume, N., *et al.* The long-acting glucagon-like peptide-1 analogue, liraglutide, inhibits beta-cell apoptosis in vitro. *Biochem. Biophys. Res. Commun.* **330**(2), 577-584 (2005).
3. Raun, K., von Voss, P., Gotfredsen, C.F., *et al.* Liraglutide, a long-acting glucagon-like peptide-1 analog, reduces body weight and food intake in obese candy-fed rats, whereas a dipeptidyl peptidase-IV inhibitor, vildagliptin, does not. *Diabetes* **56**(1), 8-15 (2007).

#### WARNING

THIS PRODUCT IS FOR RESEARCH ONLY - NOT FOR HUMAN OR VETERINARY DIAGNOSTIC OR THERAPEUTIC USE.

#### SAFETY DATA

This material should be considered hazardous until further information becomes available. Do not ingest, inhale, get in eyes, on skin, or on clothing. Wash thoroughly after handling. Before use, the user must review the complete Safety Data Sheet, which has been sent via email to your institution.

#### WARRANTY AND LIMITATION OF REMEDY

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#### CAYMAN CHEMICAL

1180 EAST ELLSWORTH RD

ANN ARBOR, MI 48108 · USA

PHONE: [800] 364-9897

[734] 971-3335

FAX: [734] 971-3640

CUSTSERV@CAYMANCHEM.COM

WWW.CAYMANCHEM.COM