

# PRODUCT INFORMATION

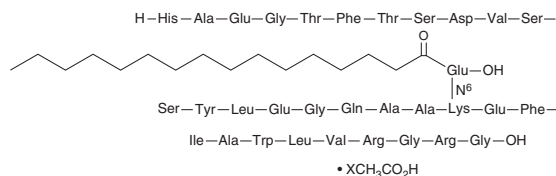


## Liraglutide (acetate)

Item No. 24727

**CAS Registry No.:** 1997361-86-0  
**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-glutaminyll-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, acetate

**Synonym:** NN 2211  
**MF:** C<sub>172</sub>H<sub>265</sub>N<sub>43</sub>O<sub>51</sub> • XC<sub>2</sub>H<sub>4</sub>O<sub>2</sub>  
**FW:** 3,811.3  
**Purity:** ≥95%  
**Supplied as:** A solid  
**Storage:** -20°C  
**Stability:** ≥4 years



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

### Laboratory Procedures

Liraglutide (acetate) is supplied as a solid. A stock solution may be made by dissolving the liraglutide in the solvent of choice, which should be purged with an inert gas. Liraglutide (acetate) is slightly soluble in DMSO.

Liraglutide (acetate) is slightly soluble in aqueous solutions. To enhance aqueous solubility, dilute the organic solvent solution into aqueous buffers or isotonic saline. If performing biological experiments, ensure the residual amount of organic solvent is insignificant, since organic solvents may have physiological effects at low concentrations. We do not recommend storing the aqueous solution for more than one day.

### Description

Liraglutide is a potent agonist of the glucagon-like peptide 1 (GLP-1) receptor and a synthetic derivative of GLP-1 (7-37) (Item No. 24887) that contains a palmitic acid group.<sup>1</sup> It increases cAMP accumulation in CHO cells expressing the human GLP-1 receptor (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 *in vitro* by greater than 95 and 50%, respectively, effects that are blocked by the GLP-1 receptor antagonist exendin-3 (9-39) (Item No. 19890) and 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., Gøtfredsen, 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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