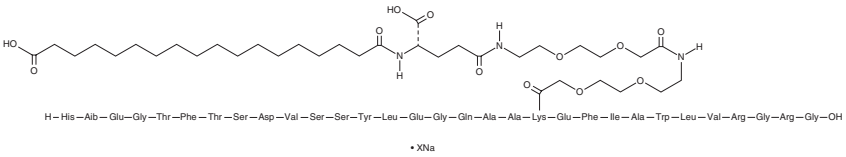
PRODUCT INFORMATION

Semaglutide (sodium salt)

Item No. 40170

CAS Registry No.: 2924330-56-1
Formal Name: L-histidyl-2-methylalanyl-L-α-glutamylglycyl-L-threonyl-L-phenylalanyl-L-threonyl-L-seryl-L-α-aspartyl-L-valyl-L-seryl-L-seryl-L-tyrosyl-L-leucyl-L-α-glutamylglycyl-L-glutaminyl-L-alanyl-L-alanyl-N^6-[N-(17-carboxy-1-oxoheptadecyl)-L-γ-glutamyl-2-[2-(2-aminoethoxy) ethoxy]acetyl-2-[2-(2-aminoethoxy) ethoxy]acetyl]-L-lysyl-L-α-glutamyl-L-phenylalanyl-L-isoleucyl-L-alanyl-L-tryptophyl-L-leucyl-L-valyl-L-arginylglycyl-L-arginyl-glycine, sodium salt
MF: $C_{187}H_{291}N_{45}O_{59}$ • XNa
FW: 4,113.6
Purity: ≥98%
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

Semaglutide (sodium salt) is supplied as a solid. A stock solution may be made by dissolving the semaglutide (sodium salt) in the solvent of choice, which should be purged with an inert gas. Semaglutide (sodium salt) is slightly soluble in acetonitrile.

Semaglutide (sodium salt) 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

Semaglutide is an agonist of glucagon-like peptide 1 receptor (GLP-1R; EC_{50} = 6.2 pM in a reporter assay using BHK cells expressing the human receptor).[1] It decreases blood glucose levels in the *db/db* mouse model of type 2 diabetes (ED_{50} = <2 nmol/kg). Semaglutide (25 nmol/kg) prevents decreases in the number of dopaminergic neurons in the substantia nigra and increases in lipid peroxidation in the substantia nigra and striatum, as well as improves motor coordination in the rotarod and footprint tests in a mouse model of Parkinson's disease induced by MPTP.[2] It decreases neuronal loss in the hippocampal dentate gyrus and CA1 and CA3 regions and improves motor coordination and grip strength in the beam-walking and hanging wire tests, respectively, in a rat model of stroke induced by permanent middle cerebral artery occlusion (MCAO) when administered at a dose of 10 nmol/kg every other day.[3] Formulations containing semaglutide have been used in the treatment of type 2 diabetes, obesity, and non-cirrhotic metabolic dysfunction-associated steatohepatitis (MASH), formerly known as non-alcoholic steatohepatitis (NASH).

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References

1. Lau, J., Bloch, P., Schäffer, L., *et al.* Discovery of the once-weekly glucagon-like peptide-1 (GLP-1) analogue semaglutide. *J. Med. Chem.* **58(18)**, 7370-7380 (2015).
2. Zhang, L., Zhang, L., Li, L., *et al.* Neuroprotective effects of the novel GLP-1 long acting analogue semaglutide in the MPTP Parkinson's disease mouse model. *Neuropeptides* **71**, 70-80 (2018).
3. Yang, X., Feng, P., Zhang, X., *et al.* The diabetes drug semaglutide reduces infarct size, inflammation, and apoptosis, and normalizes neurogenesis in a rat model of stroke. *Neuropharmacology* **158**, 107748 (2019).

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