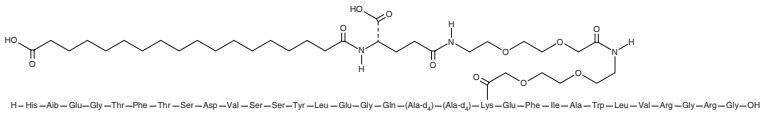
PRODUCT INFORMATION

Semaglutide-d_8

Item No. 45916

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-d_4-L-alanyl-d_4-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



MF:	$C_{187}H_{283}D_8N_{45}O_{59}$
FW:	4,121.7
Chemical Purity:	≥90% (Semaglutide)
Deuterium Incorporation:	≥99% deuterated forms (d_1-d_8); ≤1% d_0
Supplied as:	A lyophilized powder
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-d_8 is intended for use as an internal standard for the quantification of semaglutide (Item Nos. 40231 | 29969 | 40170) by GC- or LC-MS. The accuracy of the sample weight in this vial is between 5% over and 2% under the amount shown on the vial. If better precision is required, the deuterated standard should be quantitated against a more precisely weighed unlabeled standard by constructing a standard curve of peak intensity ratios (deuterated *versus* unlabeled).

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).

References

1. Lau, J., Bloch, P., Schäffer, L., *et al. J. Med. Chem.* **58(18)**, 7370-7380 (2015).
2. Zhang, L., Zhang, L., Li, L., *et al. Neuropeptides* **71**, 70-80 (2018).
3. Yang, X., Feng, P., Zhang, X., *et al. Neuropharmacology* **158**, 107748 (2019).

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