

Product Data Sheet

Product Name: Semaglutide-d 8 tetraTFA

Cat. No.: GC80407

Chemical Properties

Cas. No.

Formula $C_{195}H_{287}D_8F_{12}N_{45}O_{67}$ M.Wt 4577.72

Solubility DMSO: 50 mg/mL (10.92 mM; Need ultrasonic) Storage Sealed storage, away from moisture

General tips For obtaining a higher solubility, please warm the tube at 37 °C and shake it in the ultrasonic bath for a while. Stock solution can be stored below -20°C for several months.

Shipping Condition Evaluation sample solution: ship with blue ice All other available size: ship with RT, or blue ice upon request.

Structure

His-{Aib}-Glu-Gly-Thr-{Phe-d8}-Thr-{d-Ser}-Asp-Val-Ser-Ser-Tyr-Leu-Glu-Gly-Gln-Ala-Ala-{Lys-AEEAc-AEEAc-γ-Glu-17-carboxy heptadecanoyl}-Glu-Phe-Ile-Ala-Trp-Leu-Val-Arg-Gly-Arg-Gly (TFA salt)

Background

Semaglutide -d 8 tetraTFA is the deuterium labeled Semaglutide. Semaglutide is a long-acting, selective, competitive GLP-1R agonist that can penetrate the blood-brain barrier. After activating GLP-1R, Semaglutide promotes insulin secretion, inhibits gastric emptying and appetite, and at the same time enhances autophagy, inhibits oxidative stress and apoptosis. Semaglutide also regulates mitochondrial function and lipid metabolism (such as reducing de novo lipogenesis in the liver).

Caution: Product has not been fully validated for medical applications. For research use only.

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Semaglutide has activities such as lowering blood sugar, reducing weight, neuroprotection (such as improving motor function in Parkinson's disease models, reducing α -synuclein aggregation) and improving hepatic steatosis. Semaglutide can be used for the study of neurodegenerative diseases and liver diseases such as type 2 diabetes, obesity, Parkinson's disease, metabolic associated fatty liver disease (MASLD), and cancer [1] [2] [3] [4] [5].

In Vitro, Stable heavy isotopes of hydrogen, carbon, and other elements have been incorporated into drug molecules, largely as tracers for quantitation during the drug development process. Deuteration has gained attention because of its potential to affect the pharmacokinetic and metabolic profiles of drugs.

References:

- [1]. Chang YF, et al. Semaglutide-mediated protection against A β correlated with enhancement of autophagy and inhibition of apoptosis. J Clin Neurosci. 2020 Nov;81:234-239.
- [2]. Liu DX, et al. Semaglutide Protects against 6-OHDA Toxicity by Enhancing Autophagy and Inhibiting Oxidative Stress. Parkinsons Dis. 2022 Jul 13;2022:6813017.
- [3]. Wang C, et al. Semaglutide, a glucagon-like peptide-1 receptor agonist, inhibits oral squamous cell carcinoma growth through P38 MAPK signaling pathway. J Cancer Res Clin Oncol. 2025 Mar 7;151(3):103.
- [4]. Zhang L, et al. Semaglutide is Neuroprotective and Reduces α -Synuclein Levels in the Chronic MPTP Mouse Model of Parkinson's Disease. J Parkinsons Dis. 2019;9(1):157-171.
- [5]. Soto-Catalán M, et al. Semaglutide Improves Liver Steatosis and De Novo Lipogenesis Markers in Obese and Type-2-Diabetic Mice with Metabolic-Dysfunction-Associated Steatotic Liver Disease. Int J Mol Sci. 2024 Mar 4;25(5):2961.

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