GLP-1SG
Research Applications

US Peptide Co

Mechanism of Action

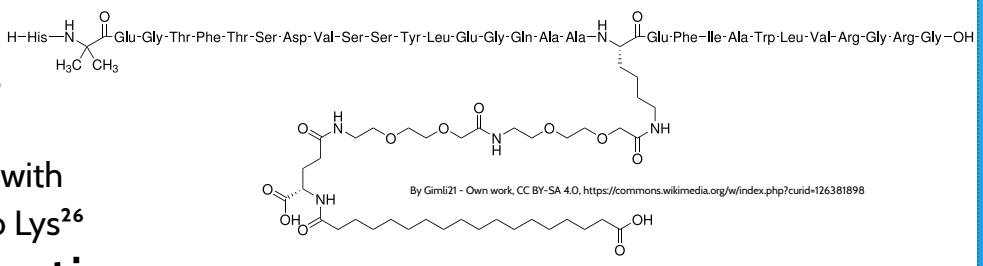
GLP-1SG is a synthetic glucagon-like peptide-1 (GLP-1) receptor agonist with structural modifications that enhance stability and extend half-life. In research models, it binds to and activates the GLP-1 receptor, stimulating adenylyl cyclase and increasing intracellular cAMP. This activation triggers multiple signaling pathways that influence glucose-dependent insulin secretion, glucagon suppression, and central appetite regulation, making it valuable for studying incretin biology and metabolic signaling.

Research Applications

- GLP-1 receptor signaling pathway research
- Investigation of incretin hormone mechanisms
- Models examining glucose homeostasis regulation
- Research on cellular pathways influencing appetite regulation

Molecular Profile

- Chemical Formula: $C_{187}H_{291}N_{45}O_{59}$
- Molecular Weight: 4,113.6 Da
- Structure: Modified GLP-1 analog with C-18 fatty diacid chain attached to Lys^{26}



Laboratory Considerations

- Store lyophilized powder at -20°C
- Reconstituted solutions should be stored at 2-8°C
- Avoid repeated freeze-thaw cycles

References

1. Lau J, et al. Discovery of the once-weekly glucagon-like peptide-1 (GLP-1) analogue GLP-1SG. J Med Chem. 2015;58(18):7370-7380.
2. Kapitza C, et al. GLP-1SG, a once-weekly human GLP-1 analog, does not reduce the bioavailability of the combined oral contraceptive, ethinylestradiol/levonorgestrel. J Clin Pharmacol. 2015;55(5):497-504.
3. Blundell J, et al. Effects of once-weekly GLP-1SG on appetite, energy intake, control of eating, food preference and body weight in subjects with obesity. Diabetes Obes Metab. 2017;19(9):1242-1251.
4. Andersen A, et al. GLP-1SG is effective and provides biochemical control in patients with prostate cancer: a case series. Front Oncol. 2020;10:1419.