

Product Data Sheet

Product Name: Survodutide sodium

Cat. No.: GC79209

Chemical Properties

Cas. No.

Formula $C_{192}H_{289}N_{47}O_{61} \cdot xNa$ M.Wt 4231.63

Solubility H_2O : 100 mg/mL (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.

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

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Structure



Background

Survodutide (BI 456906) sodium is a potent, selective glucagon receptor/GLP-1 receptor (GCGR/GLP-1R) dual agonist with EC₅₀s of 0.52 nM and 0.33 nM in CHO-K1 cells, respectively. Survodutide sodium, a 29-amino-acid peptide, is a potent acylated peptide containing a C18 fatty acid. Survodutide sodium has robust anti-obesity efficacy achieved by increasing energy expenditure and decreasing food intake [1].

In Vivo, Survodutide (BI 456906; 3, 10, 20, 30 nmol/kg; SC; daily; 30 days) sodium achieves a greater bodyweight-lowering efficacy in diet-induced obese mice compared with maximally effective doses of Semaglutide (; 20, 100 nmol/kg). Survodutide sodium dose-dependently reduces plasma glucagon[1]. Survodutide (1, 3, 10, 30, 100 nmol/kg; SC; single dose) sodium dose-dependently reduces acute food intake in WT but not in GLP-1R KO mice (Three-week-old, male, lean NMRI

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outbred mice)^[1]. Survodutide (1, 3, 10, 30, 100 nmol/kg; SC; single dose) sodium engages the glucagon receptor in vivo upon single dosing, increases liver nicotinamide N-methyltransferase mRNA, and reduces plasma serine and glutamine^[1]. Survodutide (SC injection) sodium causes mean residence times of 44 and 140 h and Tmax values of 7 and 51 h obtained in mice and dogs, respectively^[1]. Pharmacokinetic Parameters of Survodutide (BI 456906) in mice and dogs ^[1]. Mice (20 nmol/kg; SC) Dogs (10 nmol/kg; SC) Tmax (h) 7 50.7 Cmax (nM) 84.9 62.0 AUC0-∞ (nM h) 4640 9540

In Vitro, The EC50 is 0.36 nM for Survodutide (BI 456906) sodium in the endogenous mouse GLP-1R in the insulinoma cell line MIN6, and the EC50 is 60 pM for GLP-1. In 0.5% human and mouse plasma, Survodutide sodium shows a similar potency to that of endogenous GLP-1. For the GCGR, in 0.5% human and mouse plasma, Survodutide sodium is 6-fold less potent (0.29 and 0.17 nM, respectively) in relation to endogenous glucagon (47 and 30 pM, respectively)^[1]. Proteolytic stability of Survodutide sodium is helped by C-terminal amidation and the introduction of a non-coded amino acid 1-aminocyclobutane-1-carboxylic acid (Ac4c) in position 2, well established as the site of proteolytic activity for dipeptidyl peptidase-4. The desired extended terminal half-life of Survodutide sodium is achieved by the introduction of a glycine-serine linker in position 24, carrying a C18 di-acid^[1].

References:

[1]. Tina Zimmermann, et al. BI 456906: Discovery and preclinical pharmacology of a novel GCGR/GLP-1R dual agonist with robust anti-obesity efficacy. Mol Metab. 2022 Dec;66:101633.

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