A new anti-obesity drug candidate

First-in-class conjugate molecule that targets synaptic plasticity to deliver a sustained weight loss

Novel mode of action

Unparalleled weight loss efficacy

Therapeutic concept and market outlook

- First-in-class peptide-directed inhibition of a ligand-gated ion channel
- Extensive pre-clinical studies confirm weight loss efficacy in animal models of diet-induced obesity and genetic obesity
- Estimates suggest that < 5% of adults with obesity are treated with drugs
- Prescriptions are rapidly growing. Estimated market value is 20bn (2026)

Technology Description

To safely harvest the appetite-modulating effect of N-methyl-D-aspartate receptor (NMDAR) antagonism, we have developed a first-in-class therapeutic concept, in which peptide conjugation is exploited to selectively target NMDAR antagonists exclusively to CNS feeding regions via GLP-1. Thus, our strategy harvests all the virtues of GLP-1 receptor agonism and at the same time – like a Trojan horse – delivers potent site-directed inhibition of NMDAR signalling via small molecule targeting.

The optimized lead compound, a GLP1R agonist/NMDAR antagonist, is a first-in-class dual acting GPCR/ion channel conjugate, with superior weight loss efficacy in obese rodents. The compound has a unique mode-of-action and is deficient of classical adverse behavioural effects of NMDAR antagonism.

Intellectual Property Rights


Current State

We have demonstrated excellent efficacy in multiple animal models of common and genetic variants of obesity. In addition, we are currently performing pharmaco kinetic and biodistribution studies before acquiring independent toxicity studies (We have encouraging preliminary safety data from in-house experiments). Our ambition is to reach a clinical phase 1b trial in 2023.

Current TRL level is 5/6.

Figure

Diet-induced obese mice were treated daily by subcutaneous injections with either vehicle, an NMDA receptor (NMDAR) antagonist, a GLP-1 analogue, co-administration or the conjugate drug. N=8 mice/group. Data represent means ± SEM.

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Business opportunity and Call to action

In addition to the Team, a series of highly experienced project advisors and collaborators with entrepreneurial experience are connected to the project and support the ongoing ambition to progress our lead candidate into clinical trials. Following completion of our ongoing pre-clinical program (enabled by competitive seed funding from the BioInnovation Institute), a spin-out company will be created (anticipated: Q1-2022). Toward this end, we will be looking to expand out team with business development and clinical development professionals and to attract investors to financially enable the transition to clinical testing.