

# LICENSING OPPORTUNITIES

with Ulster University



## Peptide YY (PYY) peptides for treatment of diabetes and other related metabolic diseases

**Ulster University is looking for partners to progress an exciting new technology.**

Ulster University researchers have developed novel stable PYY derivatives that have the potential to halt or reverse the gradual loss of insulin secreting pancreatic beta-cells over time, associated with Type I and Type II Diabetes.



### THE PROBLEM

Diabetes is expected to affect 592 million people by 2035. It is estimated that 175 million people have undiagnosed Type II diabetes. Despite the range of currently available anti-diabetes medications there is an urgent need for new and more effective, treatment options.

### THE TECHNOLOGY

Diabetes researchers at Ulster University have previously demonstrated that sequential induction of beta-cell rest and stimulation using a stable GIP inhibitor and a GLP-1 receptor agonist (respectively), significantly improves metabolic control in severely diabetic mice. We believe that the efficacy of this combination therapy could be substantially enhanced through use of a  $\beta$ -cell resting agent that can also simultaneously protect against beta-cell loss.

It has previously been shown that PYY induces  $\beta$ -cell rest, whilst also possessing positive effects on  $\beta$ -cell proliferation and apoptosis via activation of NPY1 (Y1) receptors present on pancreatic beta-cells. However, naturally occurring PYY is unstable due to both N- and C-terminal degradation.



Native piscine-derived PYY is N-terminally stable but C-terminally liable. Our pre-clinical work packages have created two long-acting NPY1 receptor agonists that are enzymatically stable at both the N- and C-termini. These novel enzymatically stable PYY molecules act as pancreatic beta-cell protectors in diabetes.

Results to date have shown:

- The novel Sea Lamprey PYY and Sturgeon PYY have beneficial metabolic and islet architecture effects, linked to  $\beta$ -cell proliferation and protection against apoptosis.
- The novel PYY peptides impart  $\beta$ -cell rest.
- Further modifications to Sea Lamprey PYY have generated long-acting PYY drug candidates. induced diabetic mice by enhancing beta cell proliferation and beta cell mass.

## THE OPPORTUNITY

Further long-term studies are required using our novel Sea Lamprey PYY in larger animal preclinical models. Characterisation studies to bring the peptide closer to in-human use are also required to assess the scientific basis, therapeutic usefulness and disease-modifying actions of this promising novel therapeutic.

We can offer you exclusive licensing to enhance your existing intellectual property pipeline and ensure competitive positioning of this emerging technology. In addition, Ulster University experts along with the inventors of this technology are available to assist in its successful commercialisation.

**If you would like to collaborate with us and progress this technology, please get in touch using the contact details below.**

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