Impact Case Study

UoA 3B: Allied Health Professions, Dentistry, Nursing and Pharmacy (Biomedical Sciences)

Peptide Therapeutics

Summary

Ulster University's Diabetes Research Group, located in the purpose-built SAAD Centre for Pharmacy & Diabetes, has a strong track record of preclinical drug discovery and development.

Research was undertaken to address the need for more effective approaches to diabetes therapy. The specific focus was on the development of compounds that affect key hormones, which can decrease blood glucose levels.

Ulster University research has resulted in a new class of innovative peptide therapeutics resulting in a strong portfolio of intellectual property (IP), significant international recognition, financial investment and job creation, with commercialisation through the university's technology transfer company, Innovation Ulster (IUL), and a start-up, Diabetica Ltd.

Impact

The Ulster University research in this study has led to 12 patents being granted since 2008.

The outcomes led to funding being secured to establish a start-up company, Diabetica Ltd and the creation of three jobs, together with substantial productive and on-going interactions with industry.

The university's activities have influenced drug discovery programmes and the development of clinical product pipelines in major pharmaceutical companies worldwide. Additionally, a significant amount of research has been delivered on a contracted basis with leading global drug development companies.

The IP on Gastric Inhibitory Polypeptide (GIP) agonists (compounds which boost key hormones in the upper intestine and can decrease blood glucose levels) was previously licensed to a world leading pharmaceutical company in 2006. This includes two patent families covering GIP analogues as treatments of diabetes, obesity and related metabolic disease. GIP agonists are now pipeline products of a number of global health and pharmaceutical manufacturers targeted for full clinical development.

Ulster has also executed six further separate evaluation licenses on GIP antagonists for treatment of obesity-insulin resistance.

More recently, the university has focused on preclinical development of therapeutics for obesity and associated metabolic disease. The data has been replicated independently and Ulster's researchers have engaged with more than 30 potential industry partners.

Drug development is an inherently lengthy process, with a low success rate. The outcomes recorded by Ulster University researchers underscore the achievements outlined above in terms of their biomedical, economic and commercial impacts. These accomplishments have also been widely recognised, attracting many awards and international expressions of esteem.

This university's interactions with industry have resulted in the licensing and further development of international patents on stable incretin peptides for diabetes and, through Ulster University's discovery of their positive effects on cognition, for treatment of Alzheimer's disease.

This work has provided new and commercially viable approaches to significantly improve the lives of people with diabetes and related neurodegenerative disease.