

PROJECT DETAILS

Project Title:

Understanding how new gut hormone-based diabetic treatments affect the nervous system to improve heart and kidney health in metabolic syndrome.

Project Summary:

MetS-associated cardiorenal disease (known as cardiovascular-kidney-metabolic or CKM syndrome) are rising in Australia, often coexisting and driven by sympathetic nervous system (SNS) overactivation. Novel drugs GLP-1 and GIP receptor agonists (RA) show promise in treating MetS, diabetes, and cardiorenal disease. We hypothesise that SNS inhibition is a critical mediator of these benefits. Using our unique BPH/2J mouse model with increased SNS activity, we will (1) characterise MetS-related cardiorenal disease, and (2) assess dose-dependent GLP-1/GIP RA effects on SNS activity and organ protection. This work will reveal key mechanisms, inform personalised medicine, and provide preclinical data for translation into human trials.

Preferred Applicant Skillset:

Experience with ultrasound and interest in liver pathology. Keen student wishing to pursue master's by Research degree to investigate how to improve heart and kidney health in mice with hypertension.

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