Decoding the IL-22RA1-Insulin Biosynthesis Link: A New Target for Diabetes

Project Description

Project duration:	Honours/PhD
Description:	The IL-22RA1 receptor is abundant in the pancreas, and external IL-22 has been shown to improve pancreatic islet health and insulin secretion. However, the natural function of IL-22RA1 signalling within these cells is incompletely understood. Our recent work has shown that endogenous IL-22RA1 signalling in regulating insulin secretion, islet regeneration, and overall metabolic health. Understanding the specific mechanisms involved in IL-22RA1-mediated regulation of pancreatic beta cell function could lead to novel therapeutic strategies for diabetes and other metabolic disorders. This project will focus on investigating the exact mechanisms by which IL-22 regulates these processes, with a particular focus on calcium storage and cytoskeletal changes.
Expected outcomes and deliverables:	This project will be undertaken at UQ (Mater Research Institute) within the Translational Research Institute (TRI) which is a collaborative building that incorporates over 1200 research scientists and students. TRI also provides an exceptional research environment with access to state-of-art facilities including flow cytometry, microscopy and a strong network of research support professionals. There is support for PhD students, through UQ as well as Mater Student Committee (sMater). The honours student will learn a range of techniques, in particular, flow cytometry, histology, Confocal Microscopy and pre-clinical animal work. There is a potential of extending the honours project into a PhD project.
Suitable for:	Highly motivated individual with an interest in immunology and a willingness to progress work with further studies (PhD) after completing the Honours.
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