

The Link Between Cellular Stress and Antigen Presentation

Project Description

Project duration:	Honours/PhD
Description:	<p>The endoplasmic reticulum (ER) plays a crucial role in the production and presentation of MHC Class II antigens, which are essential for the immune system to recognize and eliminate foreign invaders. When proteins are misfolded or improperly assembled in the ER, it can trigger a cellular stress response known as ER stress. This stress can impact the generation and presentation of MHC Class II antigens in several ways. Our focus has been on antigen presentation by non-professional antigen presenting cells like epithelial cells. Project Aim: To investigate the complex relationship between protein misfolding, ER stress, and MHC Class II antigen presentation, with a focus on understanding how these factors influence the development of immune responses, particularly those involving CD4+ T cells.</p>
Expected outcomes and deliverables:	<p>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.</p>
Suitable for:	<p>Highly motivated individual with an interest in immunology and a willingness to progress work with further studies (PhD) after completing the Honours.</p>
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