

Investigating Natural Killer Cell Responses to Leukaemia

Project duration:	1 year
Description:	<p>Leukaemia is a blood cancer characterised by uncontrolled expansion of hematopoietic progenitors in the bone marrow. Every year, over 4000 people are diagnosed with Leukaemia in Australia and almost 2000 succumb to this disease.</p> <p>This project will investigate immune responses to leukaemia in order to develop new immunotherapies. We will focus on Natural Killer (NK) cells, a population of lymphocytes that owe their name to their ability to recognise and kill tumour cells. Early studies suggested that NK cells could protect against leukaemia. However, leukaemia tumours have developed an arsenal of mechanisms to escape from NK cell killing. A better understanding of these immune escape mechanisms is a prerequisite to the design of effective NK cell-based therapy.</p> <p>This project will use a state-of-the-art animal model called humanised mice to investigate human NK cell responses to leukaemia. Humanised mice are generated by engrafting immunodeficient mice with human hematopoietic stem cells. These mice develop a functional human immune system, including NK cells, and represent a powerful and unique tool to investigate immune responses in vivo. Humanised mice will be challenged with leukaemia tumours to investigate NK cell responses.</p>
Expected outcomes and deliverables:	<p>Applicants will be trained on fundamental laboratory techniques such as cell culture, cell staining, mouse handling as well as on cutting edge technologies including high-parameter flow cytometry (BD FACSymphony) and humanised mouse models. Applicants will be trained on scientific presentation and writing.</p> <p>Applicants are expected to complete UQ Honours assessments (literature review, project presentation, project report, etc).</p> <p>Applicants will be requested to regularly present their project progression at lab meeting; and will be expected to participate to lab journal clubs.</p> <p>Applicants will be expected to participate to lab duties (TC cleaning, packing tips, etc).</p>
Suitable for:	<p>This project is suitable for Honours or Master students.</p> <p>A good knowledge of Immunology is required.</p>
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