

Making cancer therapy safer – new strategies to alleviate cancer therapy side-effects

Project Title:	<p>Making cancer therapy safer - new strategies to alleviate cancer therapy side-effects -</p>
Project duration:	HDR 3 year project
Availability:	Start date late 2020 or early 2021
Description:	<p>Most organs contain Stem cells—yet we still do not fully understand how Stem Cells are normally controlled in the body, or what stops them from becoming malignant.</p> <p>Our team's focus is on how the micro-environment (or niche) tells stem cell what they can and cannot do in the body. We believe the identification and targeting of such niche factors will lead towards the discovery of novel therapeutics to further enhance the efficacy of cancer therapy and alleviate cancer therapy side-effects.</p> <p>Our teams research has already been recognised among ten of the best research projects in Australia (NHMRC) and led to publications in Nature series journals, 5 patents and clinical trials (two phase III trials underway with commercial industry partners).</p> <p>Background. Over 1/3 of cancer patients suffer potentially life-threatening side-effects from their cancer therapy. Treating these cancer therapy side-effects add an extra 5 days hospitalisation per patient per round of therapy and mean Australians must often travel away from home and family for cancer treatment. The risk of side-effects (treatment-related mortality) also mean many Australians do not receive the cancer therapy dose needed for potential cure.</p> <p>Using preclinical models of leukaemia therapy, our team has found that some of the conventional thinking about how cancer therapy side-effects occur may need revision and open the door to potential new treatment strategies – explored in this research project.</p> <p>Our team has two potential research projects suitable for HDR student– one on understanding cancer therapy side-effects while the other on normal and malignant stem cell regulation.</p> <p>Research Project 1: <u>New strategy to alleviate cancer therapy side-effects (mucosal, neurological and immune side-effects)</u></p> <p>Anticipated outcomes of this research project will include strategies to alleviate the life-threatening side-effects of cancer therapy. This project is based on our vascular stem cell niche research and</p>

	<p>preclinical mouse models of mucositis, neuropathy and chemotherapy-induced immune suppression.</p> <p>Research Project 2: <u>Haematopoietic Stem Cell self-renewal, oncogenic transformation and ageing</u></p> <p>Anticipated outcomes of this research project will include strategies to improve cancer therapy outcomes and/or dampen chronic diseases of ageing.</p>
<p>Expected outcomes and deliverables:</p>	<p>Anticipated Gains:</p> <ul style="list-style-type: none"> - In-depth expertise in Stem Cell Biology and malignant transformation - New ideas and collaborators including stem cell researchers, clinicians, immunologists and industry partners - Mentorship and supportive lab team environment - Expertise using preclinical mouse models of disease and bridging between basic biological research discoveries and translational clinical research - Mastering a wide range of technologies including immunological, serological and molecular.
<p>Suitable for:</p>	<p>These research projects involve preclinical mouse models of disease and treatment. Although preclinical research is highly rewarding and clinically relevant, they also require commitment to ensuring your animals are fine as well as strong creative thinking and critical evaluation skills.</p>
<p>Primary Supervisor:</p>	<p>A/Prof Ingrid Winkler</p>
<p>Further info:</p>	<p>e: i.winkler@uq.edu.au Lab visits welcome – please contact for more details.</p>