Mechanisms of anaemia in inflammatory bowel diseases

Project Description

Project duration:	Honours
Description:	Inflammatory bowel diseases (IBD), which include ulcerative colitis (UC) and Crohn's disease (CD), are chronic inflammation of the gastrointestinal tract. Anemia represents the most common complication in IBD, prevailing in 27% of patients with CD and 21% of patients UC. Anemia is associated with poor quality of life, increased rate of hospitalization and deaths in IBD. Anemia in patients with IBD arise due to iron deficiency anemia (IDA) and anemia of inflammation (AI). Most anaemic IBD patients are treated with iron supplementation, but half do not respond to iron supplementation therapies. In this project, we aim to explore the mechanisms of AI to identify possible interventions to treat AI in IBD. The project will involve mouse model of IBD including experiment colitis and mouse lacking cytokine interleukin-10 and sepsis. The markers of anaemia and erythropoiesis will be analysed by flow cytometry, blood cell count and qRT-PCR.
Expected outcomes and deliverables:	Please highlight what applicants can expect to gain/learn from participating in the project, and what they will be expected to complete as a part of the project. This project will provide insights on the mechanisms causing AI in IBD, which will help us to identify better treatments to anaemic IBD patients who do not respond to current treatments. The research will be conducted at Mater Research-UQ based in Translational Research Institute (TRI). Student will have access to work class core facilities. As part of this project, student will learn mouse model of anaemia, mouse model of colitis, tissue harvest, mouse injections, techniques such as flow cytometry, quantitative real time PCR, ELISA. At the end of the project student will gain experience working with small animals and Haematology/Immunology techniques.
Suitable for:	Please highlight any particular qualities that individual supervisors are looking for in applicants to assist with the selection process. • Strong organisational and management and record keeping skills • Ability to learn news practical skills in animal research, immunology techniques, sophisticated flow cytometry instruments, new software to analyse multidimensional data. • Ability to work collaboratively with colleagues • Possess analytical and problem-solving skills

	• Advanced computer skills in particular programs such as Microsoft Excel, Microsoft Word and Microsoft Outlook • Enthusiasm for Haematology research
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