

Role of Thioguanine in inflammation and Wnt signalling pathway

Research Project Overview

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| Project title: | Role of Thioguanine in inflammation and Wnt signalling pathway |
| Project duration: | Up to 10 weeks |
| Description: | <p>Background: Inflammatory Bowel Disease (IBD) is a chronic and relapsing inflammation of the gut. Australia has among the highest incidence of IBD in the world. Current treatment options include corticosteroids, biologics and immunomodulators, which function through a variety of mechanisms. Recently, it has been shown in our lab that thioguanine (TG) (a type of thiopurine that is sometimes used in the treatment of IBD) affects Wnt signalling pathways <i>in vitro</i> and <i>ex vivo</i>. This pathway has implications both in inflammatory signalling and colorectal cancer.</p> <p>Aim: To investigate the mechanism of action of TG in the context of IBD using patient samples.</p> <p>Method: RNA derived from colonic tissue from IBD patients on TG as well as healthy subjects will be used to generate cDNA for quantitative real-time PCR of inflammatory markers as well as genes downstream of Wnt signalling. Resulting expression levels will be analysed using standard statistical methods. The findings will also be validated using immunohistochemistry on colonic tissues.</p> |
| Expected outcomes and deliverables: | <p>The student will gain skills associated with RNA extraction, cDNA synthesis and real-time qRT-PCR using colonic tissues from healthy and IBD patients, including how to analyse resulting data. Applicants will also learn immunohistochemistry and microscopy techniques.</p> <p>This work will contribute to a larger project and potentially will be included in future publications. The student will be required to present their work as a poster or a presentation at the end of the project.</p> |
| Suitable for: | This project is suitable for a student with some wet laboratory experience/skills (basic molecular biology) who has taken immunology/cell biology courses and has computer competency (Xcel). |
| Primary Supervisor: | Dr. Jakob Begun |
| Further info: | <p>Supervisor can be contacted by email prior to application submission for more information.</p> <p>Email: jakob.begun@mater.uq.edu.au</p> |