

UQ Summer or Winter Research Project Description

Project title:	Does co-administering paracetamol tablets with medication lubricants alter absorption?
Project duration:	4 weeks
Description:	<p>Background: People who have difficulty swallowing tablets whole using water may choose to use a medication lubricant such as Gloop, which is commercially available in Australia. This thick fluid is designed to hide the tablet so that the person can swallow it without feeling the urge to chew it first. It is also designed to lubricate the transit through the oesophagus to the stomach.</p> <p>The manufacturers of Gloop now make a thicker version named Gloop Forte, which is designed for people who suffer from dysphagia. People with dysphagia have trouble swallowing food and fluids without some of it 'going down the wrong way' into the airways. It is important that food and fluids are presented to the patient at an appropriate thickness that ensures the item is swallowed and not aspirated.</p> <p>A significant restriction in drug dissolution has been measured when crushed medications are co-administered with dysphagia-oriented thickeners. Thickened fluids are prepared using commercial thickeners comprised of plant gums such as guar gum and xanthan gum. These gums appear to restrict release of the drug particles from the polysaccharide gel matrix. Gloop Forte contains carrageenan as the plant gum, which although not the same gums as thickened fluids, it does form similar polysaccharide networks. Using <i>in vitro</i> dissolution testing, we found that mixing the Gloop Forte with crushed and whole paracetamol tablets resulted in a significant restriction of drug release. This is a concern, because altering the kinetics of drug release and absorption has the potential to impact the pharmacokinetics and pharmacodynamics of medicines in the body.</p> <p>In present study we will measure the effect of Gloop Forte on drug absorption, using paracetamol as the model drug. Absorption of paracetamol into the blood will be monitored by measuring salivary excretion.</p> <p>Aims: This study will investigate the effect of a commercially available medication lubricant (Gloop Forte) on drug absorption from whole and crushed commercially available paracetamol tablets using saliva sampling.</p> <p>Objectives: The objective of this study is to investigate whether the rate and extent of paracetamol absorption is delayed <i>in vivo</i> when whole and crushed tablets are co-administered with Gloop Forte.</p>
Expected outcomes and deliverables:	We anticipate that co-administration of Gloop Forte with whole and crushed paracetamol tablets will not result in clinically significant delay paracetamol absorption.

	Scholars will be exposed to the research environment, they will gain skills in data collection and using laboratory equipment such as high-performance liquid chromatography (HPLC) and centrifuge machine.
Suitable for:	This project is open to applications from students with a background in pharmacy and chemistry.
Primary Supervisor:	A/Prof Kathryn Steadman School of Pharmacy University of Queensland Email: k.steadman@uq.edu.au Marwa Abu Malouh (PhD candidate)
Further info:	Please email Kathryn Steadman if further information on the project is required.