

CASE STUDY: IMAGING

Research Question

What happens to the ultrastructural morphology of intestinal epithelial cell monolayers after perturbation with an intestinal absorption enhancer and then on removal of the enhancer? What is the effect of mucosal injury and repair on localisation of tight junction and adherens junction proteins?

Our Approach

Intestinal absorption enhancers are a class of pharmaceutical excipient that increase intestinal permeability by altering the barrier function of the intestinal epithelium. Several enhancers are in clinical trials in order to improve oral peptide delivery including the medium chain fatty acid sodium caprate. The surfactant-like action of sodium caprate causes mild, reversible damage to intestinal epithelial cells. We wanted to understand the time and concentration dependent actions of sodium caprate on intestinal epithelial cells, and the recovery mechanisms used to repair the barrier upon removal of the enhancer.



'The Core staff provide the highest level of expertise in microscopic techniques. They not only helped with study design by ensuring that the chosen microscopy was the correct option but they also outlined several other novel and established techniques that could help in answering the proposed scientific questions and progress the research'

Professor David Brayden,
UCD & Irish Drug Delivery Network

Dr Sam Maher
postdoctoral fellow