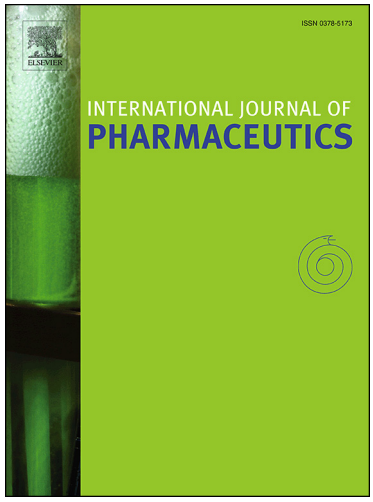

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Exploring gastric drug absorption in fasted and fed state rats.

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ABSTRACT

The small intestine is generally considered the major site of absorption after oral drug administration. Absorption from the stomach is often disregarded, though passive diffusion across the gastric mucosal barrier is theoretically possible. In this study, an *in situ* gastric bolus administration model was used to study the gastric absorption of pharmaceutical compounds in fasted and fed state rats. Three drugs [paracetamol (neutral), diclofenac (acidic) and posaconazole (basic)] were administered directly into the stomach as solution (paracetamol and diclofenac) or suspension (posaconazole). Transfer to the intestine was blocked by ligating the pylorus; as a reference, non-ligated conditions were used. Blood samples were collected and gastric absorption was assessed by the appearance of compounds in the systemic circulation. Paracetamol and diclofenac were readily absorbed from the fasted and fed state rat stomach. For paracetamol, the relative contribution of the gastric absorption was higher in the fed state compared to the fasted state. Posaconazole absorption was negligible. Since the ability of the stomach to absorb pharmaceutical compounds was clearly confirmed, the present study warrants further research to quantify the contribution of gastric absorption to total gastrointestinal drug absorption.