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Xanthan gum as a rate-controlling polymer for the development of alcohol resistant matrix tablets and mini-tablets

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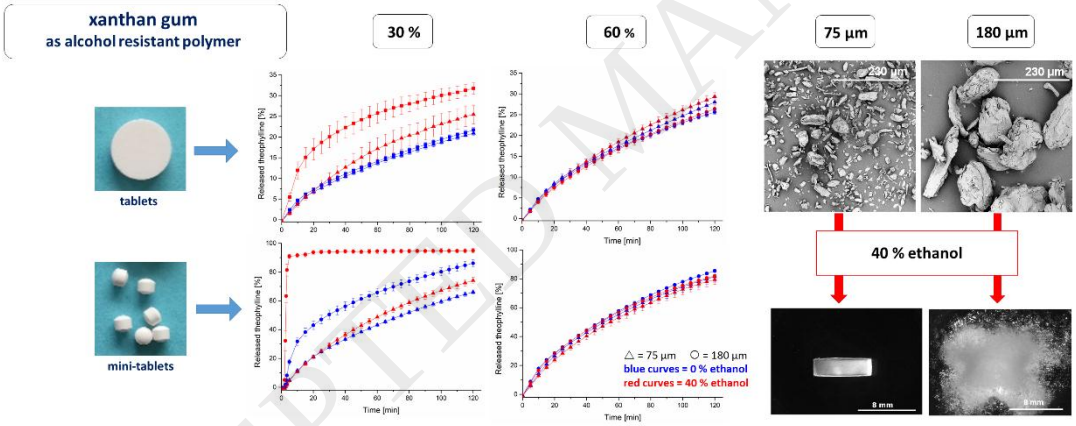
Graphical Abstract



ABSTRACT

The vulnerability of controlled release formulations when co-ingested with alcohol represents a current major concern of regulatory agencies. Dose dumping might occur when drugs and/or excipients exhibit higher solubility in ethanolic solutions compared to water. In this study, xanthan gum was chosen as rate-controlling polymer for the development of alcohol resistant matrix formulations and theophylline as model drug. Two polymer particle sizes (75 and 180 µm) and concentrations (30 and 60% w/w) were used to assess their influence on the *in-vitro* drug release from directly compressed tablets and mini-tablets, in 0% and 40%