

# Domperidone resinate complex as new formulation for gastroretentive drug delivery

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## Abstract

### Purpose

The present work aims to develop and characterize domperidone resinate complex to be loaded into a gastroretentive delivery system. The formed resinate complex will be used to control the drug release in the stomach from inside the gastroretentive delivery system.

### Methods

Resinate complexes were formulated by a simple aqueous binding method. Screening of different types of resins was carried out. Domperidone binding study was tested at various drug and resin concentrations. Physicochemical characterizations were carried out to evaluate the prepared resinate complex. These studies included flow properties, in vitro drug release in simulated gastric fluid (SGF), Differential scanning calorimetry (DSC), Mass spectroscopy and XPRD evaluations. Also, the stability study of the selected resinate complex was conducted at 25°C and 40°C.

### Results

Domperidone and Dowex 50WX2 in a ratio of 1:3 have formed a resinate complex that has shown acceptable flow properties, thermal properties and short-term chemical stability at 25°C and 40°C. The complex showed a slow release in SGF has shown slow controlled release characteristics.

### Conclusion

The domperidone stable complex with Dowex ion exchange resin has the potential for further development as gastroretentive drug delivery system as a mean of controlling the drug release.

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