

Development and *in vitro/in vivo* evaluation of Famotidine hydrochloride bioadhesive sustained release suspension

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Abstract: To develop a new kind of Famotidine-resin microcapsule for gastric adhesion sustained release by screening out suitable excipients and designing reasonable prescriptions to improve patient drug activities to achieve the expected therapeutic effect. The Famotidine drug resin was prepared using the water bath method with carbomer 934 used as coating material. Microcapsules were prepared using the emulsified solvent coating method and appropriate excipients were used to prepare Famotidine sustained release suspension. Pharmacokinetics of the developed microcapsules were studied in the gastrointestinal tract of rats. The self-made sustained-release suspension of Famotidine hydrochloride effectively reduced the blood concentration and prolonged the action time. The relative bioavailability of the self-made suspension of the Famotidine hydrochloride to the commercially available Famotidine hydrochloride was 146.44%, with an average retention time of about 5 h longer, which indicated that the new suspension had acceptable adhesion properties. The findings showed that the newly developed famotidine-resin microcapsule increased the bioavailability of the drug with a significant sustained-release property.

Keywords: *Famotidine, carbopol, ion exchange resin, mucoadhesive, in vivo, microcapsule.*
