Karakterisasi eksipien koproses xanthan gum gum akasia sebagai matriks dalam formulasi sediaan tablet mengapung famotidin = Preparation and characterization of co processed excipients of xanthan gum gum acacia as matrices in formulations of famotidine floating tablet dosage forms

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Abstrak

[ABSTRAK
Tablet mengapung lepas lambat membutuhkan eksipien yang berfungsi sebagai matriks yang mampu mengendalikan lepasnya obat dan menfasilitasi pengapungan tablet di lambung. Salah satu eksipien yang berpotensi untuk hal tersebut adalah eksipien koproses xanthan gum ? gum akasia yang merupakan hasil modifikasi fisik dari 2 jenis polimer alam, yaitu xanthan gum dan gum akasia. Oleh karena itu, penelitian ini bertujuan untuk memperoleh eksipien koproses xanthan gum ? gum akasia yang kemudian digunakan sebagai matriks pada formulasi tablet mengapung. Pada penelitian ini dibuat eksipien koproses xanthan gum ? gum akasia dengan perbandingan 1:1, 1:2, 2:1, 1:3 dan 3:1 dan eksipien yang diperoleh dikarakterisasi sifat fisik, kimia, dan fungsionalnya.Eksipien-eksipien koproses yang dihasilkan tersebut kemudian diformulasikan menjadi sediaan tablet mengapung dengan menggunakan famotidin sebagai model obat. Tablet mengapung yang dihasilkan dievaluasi, antara lain uji kemampuan mengapung serta pelepasan obat dalam medium HCl pH 1,2 selama 8 jam. Hasil penelitian menunjukkan bahwa eksipien koproses yang diperoleh berupa serbuk halus tidak berbau dan berwarna putih keabu-abuan. Selain itu eksipien koproses tersebut memiliki kemampuan mengembang yang baik, viskositas yang cukup besar dan kekuatan gel yang baik yang cocok untuk digunakan sebagai matriks tablet mengapung. Tablet mengapung F2 yang dibuat dengan menggunakan eksipien koproses Ko-XG-GA 1:2 menunjukkan karakteristik yang terbaik dengan floating lag time 8,33± 0,58 menit dan kemampuan mengapung hingga 24 jam. Profil pelepasan famotidin dari tablet mengapung yang diformulasikan dengan eksipien koproses Ko-XG-GA (F1 ? F5) menunjukkan profil pelepasan obat terkendali dengan model kinetika pelepasan orde nol dan dapat digunakan untuk pemakaian selama 32 jam. Dari hasil penelitian ini dapat disimpulkan bahwa eksipien koproses Ko-XG-GA yang dihasilkan dapat diaplikasikan sebagai matriks sediaan tablet mengapung lepas terkendali.
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ABSTRACT
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can control the release of active drugs and facilitate the tablet floating in the gastric. One of the potential excipients is a co-processed excipient of xanthan gum ? gum acacia, which is a physical modification of 2 natural polymers. Therefore, the aim of this study was to produce co-processed excipients of xanthan gumgum acacia, which were used as matrices in the floating tablet formulations. In this study, several co-processed excipients were prepared from xanthan gum and gum acacia in the ratio of 1:1, 1:2, 2:1, 1:3 and 3:1. The obtained excipients were characterized physically, chemically, and functionality. The co-processed excipients were then formulated as the floating tablets using famotidine as a drug model. The obtained floating tablets were evaluated in terms of the tablet floating capabilities and the drug release in HCl medium pH 1.2 for 8 hours. The results showed the co-processed excipients were fine powder, odorless and greyish white colour. The resulted excipients had good swelling index, fairly large viscosity and good gel strength; hence it was suitable applied as matrices of floating tablets. The floating tablets of F2 which was containing the co-processed excipient of Co-XGGA 1:2 had shown the best characteristics with 8.33 ± 0.58 minutes of floating lag time and 24 hours of total floating time. The release study revealed that the famotidine floating tablets which were using co-processed excipients of Co-XGGA (F1 - F5) as matrices could control drug release with zero order release kinetic and could be used for controlled release dosage forms for 32 hours. It can be concluded that the co-processed excipients of Co-XG-GA could be applied as matrices in controlled release floating tablets.;Controlled release floating tablets required excipient which act as a matrix that

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