Formulasi beads tetrandrine menggunakan metode gelasi ionik kitosan-tripolifosfat tersalut hidroksipropilmetil selulosa ftalat atau selulosa asetat ftalat sebagai sediaan kolon tertarget = Formulation of tetrandrine beads using ionic gelation method chitosan tripolyphosphate coated hidroxypropilmethyl cellulose phthalate or cellulose acetate phthalate as colon targeted dosage form

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Abstrak

ABSTRAK
Kitosan merupakan biopoliaminosakarida linear alami bersifat polikationik, biokompatibel, biodegradabel serta bioadhesif sehingga berpotensi besar untuk digunakan dalam sediaan penghantaran obat tertarget. Kitosan dapat berinteraksi dengan gugus anionik membentuk ikatan taut silang ionik. Tujuan penelitian ini adalah formulasi beads kitosan-tripolifosfat menggunakan metode gelasi ionik dengan menggunakan tiga variasi konsentrasi tripolifosfat yang berbeda yaitu 3% (F1), 4% (F2), dan 5% (F3). Beads dikarakterisasi menggunakan Scanning electron microscope, Diffraction scanning calorimeter, X-Ray Diffractometer, dan mikroskop optik dengan hasil menunjukkan F3 sebagai formulasi terbaik berbentuk bulat sferis kuning keemasan serta miliki ukuran diameter rata-rata 1,031 mm. Efisiensi penjerapan obat dari ketiga formulasi secara berurutan yaitu 11,725%; 15,865%; 22,934%. Selanjutnya beads dengan formulasi terbaik disalut dengan HPMCP HP-55 10% (F3C) dan 12% (F3B) dan CAP 10% (F3C) dan 15% (F3D). Pada uji pelepasan obat yang dilakukan berkelanjutan pada tiga medium berurutan yaitu HCl 0,1 N pH 1,2, dapar fosfat pH 7,4, dan dapar fosfat pH 6,8 didapatkan kadar kumulatif obat dari empat formulasi penyalutan berturut-turut sebesar 83,25%; 82,04%; 85,24%; 80,71%. Formulasi terbaik berdasarkan uji pelepasan in vitro yaitu F3C selanjutnya digunakan pada uji pentargetan in vivo. Setelah 2,5 jam beads ditemukan pada usus halus tikus, menunjukkan bahwa formulasi penyalutan beads berhasil mencapai terminal usus halus.
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ABSTRACT
Chitosan is a natural biopolyaminosaccharide linear with polycationic, biocompatible, biodegradable, and bioadhesive characteristics, so it has a big potential as a drug delivery targeted. Chitosan can interract with anionic site in order to form ionic crosslink reaction. The target of this research was to formulate of beads chitosan-tripolyphosphate using ionic gelation method with three variation of cross linker concentration which are 3% (F1), 4% (F2), and 5% (F3). Beads were characterized by SEM, DSC, XRD, and microscope optic. The characteristics results is F3 showed the best beads spherical form with yellow- gold color and have average diameter size 1.0305 mm. The entrapment efficiency drug result were 11.725%; 15.865%; and 22.934% for F1, F2, F3 respectively. Then the best formulations coated with four different confentration which are HPMCP HP-55 10% (F3A); 12% (F3B) and CAP 10% (F3C); 15%(F3D). On the dissolution test were performed sustainable on three consecutive medium is 0.1N HCl pH 1.2, phosphate buffer pH 7.4 and phosphate buffer pH 6.8 earned a cumulative grade coating formulations of drugs in four successive equal to 83.25%; 82.04%; 85.24%; 80.71%. Based on in vitro release study CAP 10% has"

"choosen as the best coated formulation with cumulative content is 85.24%. Then the best beads coated formulation used for in vivo study. After 2,5 hours beads were found in small intestine, show that the coating formulation successfully to reach the terminal of small intestine.