OMICS Group Conferences
Accelerating Scientific Discovery

2nd International Conference on
Medicinal Chemistry & Computer Aided Drug Designing

October 15-17, 2013 Hampton Inn Tropicana, Las Vegas, NV, USA

Formulation and evaluation of bi-layer tablet of metoclopramide HCl and ibuprofen

Emanual Michael Patelia and Rakesh Thakur. Jayesh Patel
University of Bedfordshire, England

The aim of this study was to prepare bi-layer tablet of metoclopramide HCl and ibuprofen. Bi-layer tablet was prepared by optimizing immediate and sustained release layer of metoclopramide HCl and Ibuprofen respectively. Metoclopramide HCl was formulated as immediate release layer by using various disintegrants like Ac-Di-Sol, polyplasdone XL, explotab, agar and gellan gum. Treated gellan gum (TGG) and treated agar (TAG) were prepared and compared their disintegrant efficiency with other disintegrants. Ibuprofen was formulated as sustained release layer using hydrophilic matrix (hydroxypropylmethylcellulose [HPMC K4M]). The effect of concentration of hydrophilic matrix (HPMC K4M) and binder (polyvinylpyrrollidone [PVP K_{30}]) and buffer (sodium bicarbonate) on ibuprofen release was studied. The dissolution study of sustained release layer showed that, as increasing the amount of HPMC or PVP K30¬ results in decreased ibuprofen release. The inclusion of buffer (sodium bicarbonate) enhanced the release of ibuprofen from sustained release layer. Optimized batch of both drugs were used for formulation of bi-layer tablet. The rationale behind the formulation of bi-layer tablet of metoclopramide HCl and ibuprofen are (1) Metoclopramide HCl increases absorption of acidic NSAID by increasing gastric motility. So sequential release of metoclopramide HCl (as immediate release) and ibuprofen ($t_{1/2}$=2 hrs, as sustained release) was suitable for treatment of migraine. (2) Degradation of metoclopramide HCl takes place in presence of acidic NSAID ibuprofen, when formulated as matrix tablet of metoclopramide HCl and ibuprofen.

ricky.emanual@gmail.com