Yilma Z et al., Pharmaceut Anal Acta 2014, 5:3
http://dx.doi.org/10.4172/2153-2435.S1.022

OMICS Group Conferences
Accelerating Scientific Discovery

4th International Conference and Exhibition on
Pharmaceutics & Novel Drug Delivery Systems
March 24-26, 2014 Hilton San Antonio Airport, San Antonio, USA

Formulation and optimization of sustained release floating matrix tablets of salbutamol sulphate using xanthan gum and hydroxypropyl methylcellulose polymer blend

Yilma Z[1], **G Mariam T**[2] and **Belete A**[2]
[1]Mekelle University, Ethiopia
[2]Addis Ababa University, Ethiopa

Oral salbutamol sulphate has site-specific absorption in the stomach and upper part of the small intestine. Its bioavailability is about 40% due to many factors including narrow absorption window. The aim of this study was to formulate and optimize a sustained release floating tablet of salbutamol sulphate using xanthan gum (XG) and HPMC as release retarding agents and $NaHCO_3$ as floating aid to improve its bioavailability and reduce its dosing frequency. Floating tablets were prepared by wet granulation technique and drug release analysis was done using HPLC. The effects of percentage of polymer, polymer type (XG or HPMC), polymer ratio (XG/HPMC; 1:1, 1:3, 3:1) and percentage of $NaHCO_3$ on floating lag time, floating duration, cumulative release within 1 hr, and release rate were investigated. From preliminary studies, the polymer with 1:3 (XG:HPMC) ratio and $NaHCO_3$; and cumulative release at 1 hr and release rate were considered as significant factors and responses, respectively, for further optimization. The effects of percentage of $NaHCO_3$ and XG/HPMC were studied and simultaneous optimization of the responses were performed using central composite design statistical approach by Design-Expert 8.0.7.1 software; and the most desirable representative optimal point was obtained having release rate of 28.49 $hr^{-1/2}$ and cumulative release at 1 hr of 24% at corresponding levels of 24.79% of XG/HPMC and 5% of $NaHCO_3$. Evaluation of the optimized formulation showed excellent granule and tablet properties. In conclusion, this study has come up with an optimum formula for the development of floating tablet of salbutamol sulphate that could remain buoyant and release the drug over a period of 12 hr in a sustained manner *in vitro*.

ziedo21@gmail.com