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Souvenir and Abstract Book

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ENHANCEMENT OF SOLUBILITY & DISSOLUTION RATE OF RACECADOTRIL BY SOLID DISPERSION TECHNIQUE

Nikhil Sakharkar, Vaibhav Lanjewar, Nilesh Mahajan
1Dadasaheb Balpande College of Pharmacy, Besa Nagpur.- 440037, Maharashtra, India.
nikhilsakharkar1@gmail.com

ABSTRACT

The aim of present research work is the enhancement of solubility and dissolution rate of poor water soluble drug Racecadotril. The main objectives of this study were to prepare and evaluate solid dispersion of Racecadotril and to improve the solubility and dissolution rate of poorly water soluble drug Racecadotril. In the solid dispersion technique HPMC LV, PEG 6000, Poloxamer 188, PVP K30, and β-Cyclodextrin polymer were used. The physical mixtures were prepared by mixing of Racecadotril and polymers in 1:1 ratio were added in triplicate screw capped vials for each contain 25 ml distilled water. Solid dispersion were prepared by the Melting method, Kneading method, Freeze drying and Solvent evaporation method. Solubility of Racecadotril was found to be increased from 0.08911mg/ml to 0.479 mg/ml. Cumulative drug release of Racecadotril was found to be increased from 56.21% to 63% in 0.1N HCL of Racecadotril with poloxamer 188 ploymer. The preparation of a solid dispersion of Racecadotril by using hydrophilic polymers by using solvent evaporation method leads to the improvement of solubility and dissolution rate.

Key Words Racecadotril, Solid dispersion, Solubility enhancement, Dissolution rate.

DEVELOPMENT AND CHARACTERIZATION OF CO-PROCESSED EXCIPIENTS AS A SOLID DISPERSION CARRIER FOR ENHANCING THE BIOPHARMACEUTICAL PARAMETERS OF ATROVASTATIN

Pansari R. A, Telange R.D
Rajarshi Shahu College of Pharmacy, Buldana, Maharastra 443001 India
pansariachal@gmail.com

ABSTRACT

The co-processed excipients using Pentarythritol and Eudragit RS100 was developed as solid dispersion carrier with an objective of enhancing the biopharmaceutical parameters of Atorvastatin. The solid dispersion of Atorvastatin (ATC-SD) was prepared by solvent evaporation method. The prepared formulation was physico-chemically characterized by FTIR, PXRD, DSC, Particle size and zeta potential and drug content analysis. Functional characterization of ATC-SD was carried out by solubility analysis, dissolution studies in phosphate buffer solution (PBS pH 7.4). The ATC-SD showed its formation based on the ethanol solvent evaporation method. Results of FT-IR, DSC and PRD studies showed that the ATC-SD was formed successfully through the involvement of hydrogen bonding, ion-dipole and Van der waals forces between the ATC and developed carrier. ATC-SD improved the solubility of ATC significantly compared to pure ATC. The rate and extent of dissolution of prepared ATC-SD formulation was found to be enhanced drastically as compared to pure ATC and physical mixture (PM). Over to that of Fasted state (FaSSIF), the dissolution rate of ATC-SD in fed state (FESSIF) was found to have enhanced more significantly. Therefore, based on the results, it is concluded that the developed carrier i.e. ATC-SD using pentaerythritol and Eudragit®RS100 could be employed as potential solid dispersion carrier for enhancing the biopharmaceutical parameters of Atorvastatin and other low soluble drugs.

Keywords Fasted state, Atorvastatin, Fed state, Solvent evaporation