J Bioanal Biomed 2018, Volume 10
DOI: 10.4172/1948-593X-C3-045

13th International Conference on
Biologics and Biosimilars
&
Biopharma & Biotherapeutics
October 24-25, 2018 | Boston, USA

Formulation and evaluation of solid self micro emulsifying drug delivery system of olanzapine

Sagar Y Goda[1], **Hiren M Katariya**[2] and **Kalpesh A Patel** [2]
[1]Griffith University, Australia
[2]B K Mody Government Pharmacy College Rajkot, India

The main objective of the current research work was formulation and evaluation of solid self-micro emulsifying drug delivery system of olanzapine which is poorly water-soluble drug. The improved offer improved bioavailability. Component excipients were selected based on the preliminary studies, Lauroglycol 90, Acrysol K140 and Transcutol-P selected as oil, surfactant and co-surfactant respectively based on the maximum solubility and better emulsification efficiency. The ternary phase diagram was constructed to identify the optimum composition of the formulation. Simplex centroid mixture design was applied for selection of optimized batch of solid SMEDDS. Lauroglycol 90, Acrysol K140 and Transcutol P were taken as independent variables X1, X2 and X3 respectively, while Emulsification time (Y1), % transmittance (Y2), globule size (Y3), PDI (Y4), %Drug release at 5minutes (Y5) and Cloud point (Y6) were taken as dependent variables. Optimized liquid SMEDDS was evaluated based on emulsification time, % transmittance, globule size, PDI, %drug release, drug content and cloud point. Liquid- SMEDDS was converted to Solid-SMEDDS by adsorption method using Neusillin US2 as an adsorbent. Solid SMEDDS filled in capsule and short-term stability study was done and Solid SMEDDS compared with marketed preparation for dissolution profile. An optimized batch containing Lauroglycol 90, Acrysol K140 and Transcutol P at a concentration of 36%, 22% and 42% respectively. All the evaluation parameters of the optimized Liquid-SMEDDS and Solid-SMEDDS were met the acceptance criteria. An optimized batch of Liquid-SMEDDS showed > 90% drug release within 5minutes and Solid-SMEDDS showed > 90% drug release within 5minutes. Dissolution was improved as compared to the pure drug and marketed formulation. A solid self-Micro emulsifying drug delivery system of olanzapine was developed successfully and demonstrated for improving the dissolution of olanzapine. This may lead to improved oral bioavailability of olanzapine for the treatment of schizophrenia.

sygoda94@gmail.com