World Academy of Science, Engineering and Technology
International Journal of Biotechnology and Bioengineering
Vol:10, No:04, 2016

Formulation and Evaluation of Niosomes Containing an Antihypertensive Drug

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Abstract : Niosomes were formulated with an aim of enhancing the oral bioavailability of losartan potassium and formulated in different molar ratios of surfactant, cholesterol and dicetyl phosphate. The formulated niosomes were found in range of 54.98 µm to 107.85 µm in size. Formulations with 1:1 ratio of surfactant and cholesterol have shown maximum entrapment efficiencies. Niosomes with sorbitan monostearate showed maximum drug release and zero order release kinetics, at the end of 24 hours. The in vivo study has shown the significant enhancement in oral bioavailability of losartan potassium in rats, after a dose of 10 mg/kg. The average relative bioavailability in relation with pure drug solution was found 2.56, indicates more than two fold increase in oral bioavailability. A significant increment in MRT reflects the release retarding ability of the vesicles. In conclusion, niosomes could be a promising delivery of losartan potassium with improved oral bioavailability and prolonged release profiles.

Keywords : non-ionic surfactant vesicles, losartan potassium, oral bioavailability, controlled release
Conference Title : ICBBPE 2016 : International Conference on Bioscience, Biochemical and Pharmaceutical Engineering
Conference Location : Los Angeles, United States
Conference Dates : April 05-06, 2016