World Academy of Science, Engineering and Technology
International Journal of Pharmacological and Pharmaceutical Sciences
Vol:9, No:02, 2015

Layersomes for Oral Delivery of Amphotericin B

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Abstract : Layer by layer coating of biocompatible polyelectrolytes converts the liposomes into stable version i.e 'layersomes'. This system was further used to deliver the Amphotericin B through the oral route. Extensive optimization of different process variables resulted in the formation of layersomes with the particle size of 238.4±5.1, PDI of 0.24±0.16, the zeta potential of 34.6±1.3, and entrapment efficiency of 71.3±1.2. TEM analysis further confirmed the formation of spherical particles. Trehalose (10% w/w) resulted in the formation of fluffy and easy to redisperse cake in freeze dried layersomes. Controlled release up to 50 % within 24 h was observed in the case of layersomes. The layersomes were found stable in simulated biological fluids and resulted in the 3.59 fold higher bioavailability in comparison to free Amp-B. Furthermore, the developed formulation was found to be safe in comparison to Fungizone as indicated by blood urea nitrogen (BUN) and creatinine level.

Keywords : amphotericin B, layersomes, liposomes, toxicity
Conference Title : ICPP 2015 : International Conference on Pharmacy and Pharmacology
Conference Location : London, United Kingdom
Conference Dates : February 16-17, 2015