



## Optimization and characterization of transfersomes for enhanced topical delivery of Sertaconazole nitrate

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### Abstract:

Sertaconazole nitrate is a novel broad spectrum antifungal drug with poor aqueous solubility which acted as a barrier against its clinical efficacy. Therefore, the aim of this work was to develop Sertaconazole nitrate loaded transfersomes using thin-film hydration method, based on a 23 factorial design. Different formulation variables were examined, namely, ratio of phospholipid to drug, ratio of phospholipid to Brij®L4 and method of controlling size of vesicles, and their effects on the entrapment efficiency (EE%), particle size (PS), polydispersity index (PDI), and zeta potential (ZP) were evaluated. Based on the desirability factor (0.898), the optimized formulation (F5) was selected by Design expert software for further investigations. The optimized formulation was imaged by TEM which revealed nanosized unilamellar vesicles. Moreover, F5 improved the drug permeation and retention in the ex vivo permeation studies when compared to the STZ-suspension. Overall, the obtained results suggest that the fabricated formulation could be a promising vehicle for the dermal delivery of Sertaconazole nitrate.

### Biography:

Nihal Farid Younes graduated from Faculty of Pharmacy, Cairo university with honors. Combining academic and professional experience, Nihal worked as a teaching assistant in Faculty of Pharmacy, Cairo university as well as community pharmacist for two years in retail pharmacies while completing her post graduate studies in (Nano-systems as potential carriers for enhancing drug delivery). After acquiring her PhD, she opted for more academic depth, so she held a full-time position as a Lecturer in Pharmaceutics and Industrial Pharmacy, Faculty of Pharmacy, Cairo university. In addition, she co-authored number of publications in the field of pharmaceutical nanotechnology.



### Recent Publications:

1. Nihal Farid Younes et al; Microenvironmental pH-modified Amisulpride-Labrasol matrix tablets: development, optimization and in vivo pharmacokinetic study, 2020.
2. Nihal Farid Younes et al; Correction to: Enhanced Oral Absorption of Amisulpride Via a Nanostructured Lipid Carrier-Based Capsules: Development, Optimization Applying the Desirability Function Approach and In Vivo Pharmacokinetic Study, 2019.
3. Nihal Farid Younes et al; Enhanced Oral Absorption of Amisulpride Via a Nanostructured Lipid Carrier-Based Capsules: Development, Optimization Applying the Desirability Function Approach and In Vivo Pharmacokinetic Study, 2019.
4. Nihal Farid Younes et al; Solutol HS15 based binary mixed micelles with penetration enhancers for augmented corneal delivery of sertaconazole nitrate: optimization, in vitro, ex vivo and in vivo characterization, 2018.
5. Nihal Farid Younes et al; Corneal targeted Sertaconazole nitrate loaded cubosomes: Preparation, statistical optimization, in vitro characterization, ex vivo permeation and in vivo studies, 2018.

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