World Academy of Science, Engineering and Technology
International Journal of Pharmacological and Pharmaceutical Sciences
Vol:8, No:07, 2014

Development of Biotechnological Emulsion Based on Bullfrog (Rana catesbeiana Shaw) Oil: A Preliminary Study

Authors : Lourena M. Veríssimo, Lucas A. Machado, Renata Rutckeviski, Francisco H. Xavier Júnior, Éverton N. Alencar, Andreza R. V. Morais, Teresa R. F. Dantas, Christian M. Oliveira, Arnóbio A. Silva Júnior, Eryvaldo S. T. Egito

Abstract : This study aimed to obtain emulsion systems based on bullfrog oil (BO). The BO was extracted at 80ºC and analyzed by Gas Chromatography-Mass Spectrometry (GC/MS). The critical Hydrophilic-Lipophilic Balance (HLBc) Assay of the BO was performed through BO, Tween® 20, Span® 80 and deionized water mixtures using an Ultra-Turrax® and determined using dynamic light scattering, pH, electrical conductivity and creaming rate. Then, a pseudoternary phase diagram (PPD) was constructed by water titration. The GC/MS analysis of BO suggested Methyl Oleate (9.26%) as major compound. The HLBc was 12.1, wherein the correspondent emulsion showed a pH of 4.83±1.29, electrical conductivity of 103.65 µS, creaming rate of 2.51±0.54%, droplet size of 207.07±8.31 nm and polydispersity index of 0.212±0.005. The PPD showed different formulations characterized as O/W emulsions. Thus, the PPD proved to be a useful tool to produce BO emulsions, in which their constituents may vary within the range of the desired system.

Keywords : bullfrog (Rana catesbeiana Shaw) oil, emulsion production, hydrophilic-lipophilic balance, gas chromatography/mass spectrometry analysis
Conference Title : ICBPS 2014 : International Conference on Biotechnology and Pharmaceutical Sciences
Conference Location : Zurich, Switzerland
Conference Dates : July 30-31, 2014