

Drug Formulation & Bioavailability Congress

September 05-07, 2016 Beijing, China

Preformulation study of virgin coconut oil (VCO) base emulsion

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Emulsions are a class of disperse systems made by the agitation of the pure immiscible liquids. An emulsifier is added as a third component and the choice of the emulsifier is crucial in the formation of the emulsion and its long-term stability. The objective of this study was to evaluate the stability of pre formulated emulsions consisting with VCO as the oil phase and Tween 20[®] as the surfactant. Different ratios of oil, water and surfactant were used to prepare primary emulsions with the aid of magnetic stirrer and high shear homogenization was used for secondary homogenization. Stability evaluation was done for 14 days after the formulation of nine different formulae. The formulations were observed visually for phase separation, sedimentation, creaming, coalescence and flocculation. 33.3% of formulae were stable throughout the study period. Most promising unstable condition is phase separation and it is 44.4%. Sedimentation was shown in 22.2% of formulae. Creaming, coalescence and flocculation were not shown in any of the formulae. Stable formulae were consisting with 10%-30% of oil and 10%-40% of water. According to the results VCO is suitable for the formulation of emulsion with Tween 20[®] as the surfactant. Long term stability evaluation is needed for the selection of most stable formulation.

Biography

N A Sanjeevani is currently employed as a Lecturer (Probationary) at department of Pharmacy, Faculty of Allied Health Sciences, General Sir John Kotelawala Defence University, Sri Lanka. She obtained Bachelor of Pharmacy degree (Hons) from University of Peradeniya, Sri Lanka in 2013; and currently she is doing Master of Philosophy degree concentrated in Biotechnology and Biochemistry at Post Graduate Institute of Agriculture, University of Peradeniya. Her research interest is in drug formulation and development. Currently she is carrying out a research project to determine the hypoglycemic activity and formulate a capsule using leaf extract of traditional herbal medicinal plant.

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