

Formulation and evaluation of microemulsion based herbal shampoo

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In the present work, efforts have been made to develop the herbal shampoo from the ethanolic extract of herbs *Hibiscus rosasinensis*, *Sapindus mukorossi* and *Emblica officinalis*. Applications of nanotechnology component such as microemulsion in shampoo are interesting for product development. Microemulsion was prepared by water titration method for various ratios of surfactant to cosurfactant i.e. 1:1, 2:1, 3:1 and 4:1. This shows that 1:1 ratio of surfactant to cosurfactant was suitable for the shampoo. Prepared microemulsion was evaluated for various parameters like pH, viscosity, phase separation, transparency etc. After that F1, F2, and F3 formulation were prepared. F1 was plain shampoo where as F2 and F3 microemulsion based shampoo containing extracts of *Hibiscus rosasinensis*, *Sapindus mukorossi* and *Emblica officinalis*, as additive of shampoo formulation. It was observed that when the concentration of microemulsion was increased the stability of shampoo was decreased i.e. phase separation observed after two days. All three shampoo formulations were evaluated with various parameters like pH, viscosity, physical appearance, and per cent of solid content, per cent of cleaning, foam volume and foam stability, dirt dispersion and surface tension. It concludes that the formulated shampoo containing microemulsion was safe to use.

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