

## Formulation and evaluation of microemulsion based poly-herbal sunscreen cream

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Sunscreeners are the product applied to skin to protect the harmful effect of UV radiation. Since organic and inorganic compounds are toxic these days, people prefer herbal preparation for skin. The novel of the study is to formulate the microemulsion based poly-herbal sunscreen cream. The size of microemulsion is less and better solubility of herbal component motivated for formulation of microemulsion based sunscreen. The plant selected for study was *Nardostachys Jatamansi*, it reduces the burning sensation and improved skin texture. *Rubia cordifolia* is antioxidant, antifungal, anti-inflammatory. *Solanum lycopersicum* contain unsaturated compound (Lycopene) absorbs UV radiation and increases Sun protection factor. The microemulsion was formulated using Tween80, Span80, n-butanol and sesame oil at a ratio of 1:1, 1:2,1:3,1:4 out of this 1:1 ratio showed maximum amount of aqueous phase. The three formulations of microemulsion was evaluated using various parameters, pH, optical transparency, measurement of globule size, viscosity, phase separation, drug content, and SPF. The microemulsion was transparent and clear, pH was found within range, particle size was found to be slightly higher than the standard value, the viscosity was found to be 328cps and SPF was 34. No phase separation was observed after centrifugation. The drug content in microemulsion was 72.31% in *N.jatmansi*, 82.99% in *R.cordifolia* and 69.89% in *S.lycopersicum*. The formulation of cream containing microemulsion was prepared. It was white in colour, odourless and pH was 6.9 that is acceptable for skin, spreadability was 17.13, tube extrudability was 82.66%, viscosity was 23115 cps, skin irritation test negligible irritancy was observed on rabbit, the SPF of cream by dry film method was found to be 9.6. Formulation of herbal based microemulsion sunscreen is the good approach to develop the sunscreen products.

### Biography

Pravin S. Pagar completed his graduation from K.B.H. College of Pharmacy, Malegaon, Nashik, Maharashtra, India. Currently he is pursuing Master of Pharmacy at Kopergaon (Inside of SHIRDI) in Pune University.

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