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Formulation, optimization and evaluation of cream of Nigella sativa seeds

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Nigella sativa (Ranunculaceae) is an extensively used medicinal plant all over the world. The seeds of N. sativa have been widely used in the treatment of many diseases like asthma, diarrhoea and dyslipidemia, etc. In the present study, cream of *Nigella sativa* oil was formulated and optimized in atopic dermatitis (atopic eczema). Pharmacognostical standardization of black seed and its oil was extracted by screw press machine as per Indian Herbal Pharmacopoeial standards. Thymoquinone the active constituent in oil extract was quantified by HPLC and yield was found to be 31% which was used for the treatment of inflammatory disease like atopic eczema. The cream was formulated using stearic acid as a cream base. Triethonalamine used as emulsifier and surfactant. Formulation optimization was done by 32 factorial design, in which 9 batches were formulated. Formulation characterization was done by different parameter like texture profile analysis, FTIR, *in vitro* occlusion test and *in vitro* drug release studies. Texture analysis resulted that firmness of cream was increased along with cohesiveness and index of viscosity but consistency decreased. FTIR studies indicated no interaction between drug and excipients, *in vitro* occlusion test showed a reduced less water loss from blank cream even lesser from optimized batch. *In vitro* studies showed the 60% release of thymoquinone upto 24 hrs and followed Higuchi kinetics (R2=0.996). The studies of formulated cream established their effectiveness for the use in the treatment of atopic eczema.

Biography

Neelam is pursuing MPharm under the supervision of Ruchi Chawla from IIT (BHU) Varanasi. She has completed her BPharm from Pt B D Sharma UHS, Rohtak (Haryana). Currently, she is working on nanoparticulate based drug delivery.

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