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Formulation and characterization of self microemulsifying drug delivery systems of Aceclofenac

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Self-microemulsifying drug delivery system (SMEDDS) of aceclofenac was formulated to overcome the problems of poor solubility and bioavailability. The solubility of drug was determined in various oily vehicles. The selection of oil phase was based on saturated solubility studies and surfactant and co-surfactant screening was done on the basis of their emulsification ability. A pseudoternary phase diagrams was plotted to identify the self emulsifying region. Cremophore and Transcutol were selected as surfactant and co-surfactant (S/CoS) (in ratio of 1:1) respectively as optimised components for the SMEDDS formulation based on self emulsification studies and phase separation studies. Further, nine formulations (2:8, 2.5:7.5, 3:7, 3.5:6.5, 4:6, 4.5:5.5, 5:5, 5.5:4.5, 6:4) were prepared using isopropyl myristate as oily vehicle and selected ratio of S/CoS mix. The formulated SMEDDS was evaluated for its particle size, zeta potential, self emulsification time and phase separation. *In vitro* drug release of optimized formulation was carried out using dialysis bag method in pH 7.4 buffer at 37°C. The optimized formulation exhibited 98% drug release which was significantly higher than that of pure drug and marketed product. The study revealed the significance of aceclofenac SMEDDS as potential carriers for oral administration.

Biography

Kanav Midha, a Post graduate fellow, Chitkara University, India. He is currently working on research project entitled Formulation and Characterization of Self Microemulsifying drug delivery systems of Aceclofenac. Before joining as Post graduate fellow, he completed Bachelor's in Pharmacy from Swami Vivekanand Group of Institutes and worked with Medtronic India for 7 months. He is a life time member of Indian Pharmacy Graduates Association and Achiever's League Scientific Writers Association, and has attended various national and international conferences in India.

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