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DESIGN AND DEVELOPMENT OF SELF MICROEMULSIFYING TABLET OF ROSUVASTATIN

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ABSTRACT

Self-microemulsifying drug delivery system (SMEDDS) of rosuvastatin calcium was aimed to overcome the problems of poor solubility and bioavailability of the drug. The solubility of drug was determined in various oily vehicles. The selection of components (oil, surfactant and co-surfactant) for the formulation development was based on saturated solubility studies and emulsification ability. Pseudoternary phase diagrams were plotted to identify the self-emulsifying region. Clove oil as oil phase, tween 80 and transcutol as surfactant and co-surfactant (S/CoS mix) (in ratio of 2:1) respectively were selected as optimized components for the SMEDDS formulation. The formulated liquid SMEDDS was evaluated for its self-emulsification time, phase separation, viscosity, cloud point and droplet size. The liquid SMEDDS were converted to solid SMEDDS by adsorbing on Neusilin US2 particles. Solid SMEDDS were further characterized for SEM, XRD, FTIR and evaluated for drug content, micromeritic properties. Further optimized solid-SMEDDS were compressed into tablet dosage form. *In vitro* drug release of liquid SMEDDS, solid-SMEDDS, and optimized tablet batch was carried out in buffer of pH 6.8. The optimized formulation exhibited almost 100 % drug release