ORIGINAL RESEARCH ARTICLES

DEVELOPMENT AND CHARACTERIZATION OF ATORVASTATIN CALCIUM LOADED PHARMACOSOMES

Akash S. Jadhav[a]* and Indrayani S. Bandgar[b]

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ABSTRACT

Atorvastatin calcium was complexed with soya lecithin in various ratios using the thin-film hydration method. The formulated pharmacosomes underwent quality control tests, including *in vitro* dissolution studies, X-ray powder diffraction for crystallinity analysis, scanning electron microscopy for surface morphology, drug solubility assessment and drug content evaluation. The optimized batch (F5) had a particle size of 150.2 nm and an entrapment efficiency of 86.35%. The drug content of the optimized formulation was 91.12% w/w. Scanning electron microscopy analysis confirmed the formation of disc-shaped pharmacosomes, while X-ray powder diffraction data verified the successful formation of the phospholipid complex. Solubility profile of the complex showed a significant improvement compared to pure atorvastatin. The F5 formulation exhibited drug release of 91.12% at the end of a 4h dissolution study. Complexation of atorvastatin calcium with soya phosphatidylcholine significantly enhances its solubility, leading to improved bioavailability and reduced gastrointestinal toxicity, making it a promising approach for atorvastatin delivery.