



Development and Optimization of Gastro Retentive Floating Tablets of Atorvastatin Calcium Using Simplex Lattice Design

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SUMMARY. The objective of this study was to improve the availability of atorvastatin calcium (ATC) and evaluate the effect of formulation variables on the buoyancy lag time (BLT), total floating time (TFT), and the release properties, when developed as gastro retentive floating tablets by the statistical optimization technique based on the simplex lattice design. The tablets were prepared by direct compression technique and were evaluated for weight variation, content uniformity, hardness, friability, and floating property. The floating behavior and *in vitro* dissolution studies were carried out. It was noted that, all the prepared tablets had desired BLT and constantly floated on dissolution medium. The optimized formulation released approximately 75% drug in 12 h and followed the Higuchi release model, while the BLT was 2 s and the tablet remained floatable throughout the test. The results demonstrate the feasibility of the model in the development of gastro retentive floating tablets containing ATC.

KEY WORDS: Atorvastatin calcium, Buoyancy lag time, Gastro retentive, Simplex lattice design.

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