Abstract

Design and Characterization of Press Coated Tablets of Simvastatin for Pulsatile Delivery

An oral press-coated tablet was developed by means of direct compression to achieve the time-controlled disintegrating or rupturing function with a distinct predetermined lag time. The aim of the present study is to develop colon targeted drug delivery systems for simvastatin by using HPMC K100M and ethylcellulose (EC) as coating material. By applying 32 full factorial design, compression coated tablets of simvastatin containing different proportions of EC and HPMC K100M was prepared. All the formulations were evaluated for the hardness, friability, thickness, weight variation, drug content uniformity, and in-vitro drug release studies for 12 h. Press coated tablets of simvastatin released different amount of the simvastatin, within the 12 h dissolution study, in the physiological environment of the stomach and small intestine, depending on the proportion of EC: HPMC K100M used in the formulation. The compression coated formulations have been formulated to release minimum amount of simvastatin within 5 h dissolution study in the physiological environment of the stomach and small intestine. The results of the dissolution study showed that compression coated tablet F6 with EC: HPMC K100M (100: 125) is most likely to provide targeting of simvastatin for local action in the colon owing to its minimal release of the drug in first 5 h.