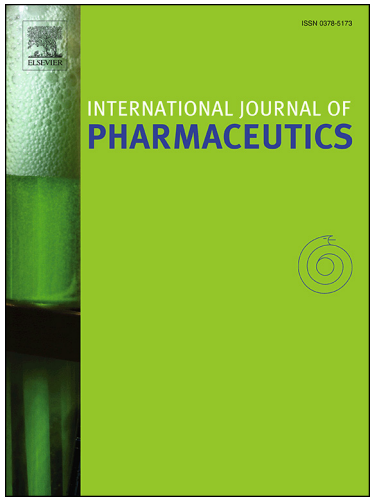

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Preparation of a solid self-microemulsifying drug delivery system by hot-melt extrusion

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Abstract

Hot-melt extrusion (HME) has gained increasing attention in the pharmaceutical industry; however, its potential in the preparation of solid self-emulsifying drug delivery systems (S-SMEDDS) is still unexplored. This study sought to prepare enteric S-SMEDDS by HME and evaluate the effects of the process and formulation variables on S-SMEDDS properties via Box-Behnken design. Liquid SMEDDS were developed, and carvedilol was used as a class II model drug. Mean size, polydispersity index (PdI) and zeta potential of the resulting microemulsions were determined. The extrudates were then obtained by blending the lipid mixture and HPMCAS using a twin-screw hot-melt extruder. SEM, optical microscopy and PXRD were used to characterize the extrudates. *In vitro* microemulsion