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

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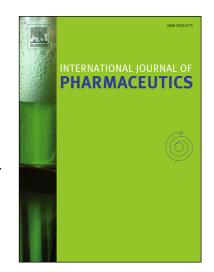
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## 17 Abstract

- Hot-melt extrusion (HME) has gained increasing attention in the pharmaceutical industry;
- 19 however, its potential in the preparation of solid self-emulsifying drug delivery systems (S-
- 20 SMEDDS) is still unexplored. This study sought to prepare enteric S-SMEDDS by HME
- 21 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
- 23 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
- 25 the lipid mixture and HPMCAS using a twin-screw hot-melt extruder. SEM, optical
- 26 microscopy and PXRD were used to characterize the extrudates. *In vitro* microemulsion

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