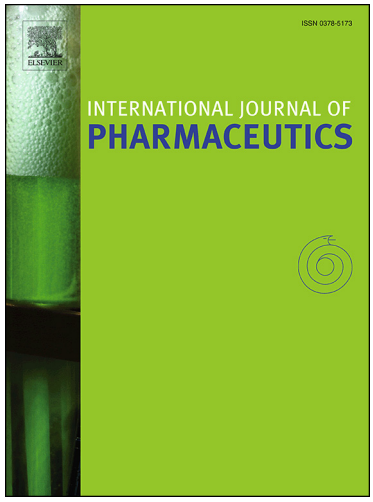

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Pharmaceutical-grade Oral Films as Substrates for Printed Medicine[1]

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Abstract

In contact-less printing, such as piezo-electric drop on demand printing used in the study, the drop formation process is independent of the substrate. This means that having developed a printable formulation, printed pharmaceutical dosage forms can be obtained on any pharmaceutical grade substrate, such as polymer-based films. In this work we evaluated eight different oral films based on their suitability as printing substrates for sodium picosulfate. The different polymer films were compared regarding printed spot morphology, chemical stability and dissolution profile. The morphology of printed sodium picosulfate was investigated with scanning electron microscopy and optical coherence tomography. The spreading of the deposited drops was found to be governed by the contact angle of the ink

API... active pharmaceutical ingredient
ATR-FTIR... attenuated total reflection fourier transform infrared spectroscopy
DSC... differential scanning calorimetry
GE... gelatin
GET... gelatin film with 2% TiO_2
HPMC... hydroxypropylmethylencellulose film
HPMCT... hydroxypropylmethylencellulose film with 2% TiO_2
List... LISTERINE POCKETPAKS® Breath Strips
OCT... optical coherence tomography
PLM... polarized light microscopy
pMCC... hydrophilic microscristalline cellulose film
SEM... scanning electron microscope
SP... sodium picosulfate
SWAXS... Small- and wide-angle X-ray scattering
Tesa... Rapidfilm® from Tesa Labtec
yMCC... hydrophobic microscristalline cellulose film