

The effect of surfactants and hydrophilic bases on liberation of naproxen from rectal suppositories

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Background and Aims: The aim of this work was to develop the best formulations for Naproxen suppositories.

Methods: The effects of different bases and surfactants on the physicochemical characteristics of the suppositories were determined by several tests such as weight variation, melting point, dosage, hardness and release rate, which were required by US Pharmacopoeia.

Results: For all formulations requirements of the USP 30 were met in the case of weight variation (97-112%), content uniformity (97-107%), melting point (4.66-8.7 min) and hardness tests (>5400g). In the case of release rate, hydrophilic and lipophilic bases without surfactants weren't suitable base for Naproxen suppository. From formulations containing surfactants only formulations consist of Witepsol H15 with 0.5% w/w of Tween 80 and Witepsol W35 with 0.5% of CPC were suitable for Naproxen suppository and released almost all content of Naproxen during 30 min and 60 min respectively.

Conclusions: This study demonstrates the effects of incorporation of known agents on the in vitro release characteristics of Naproxen suppository.

Keywords: Suppository; Naproxen; Surfactant; Witepsol