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Abstract

Nanocrystals have received considerable attention in dermal application due to their ability to enhance delivery to the skin and overcome bioavailability issues caused by poor water and oil drug solubility. The objective of this study was to investigate the effect of nanocrystals on the mechanism of penetration behavior of curcumin as a model drug. Curcumin nanocrystals were produced by the smartCrystals® process, i.e. bead milling followed by high pressure homogenization. The mean particle size of the curcumin crystals was about 200 nm. Stabilization was performed with alkyl polyglycoside surfactants. The distribution of curcumin within the skin was determined in vitro on