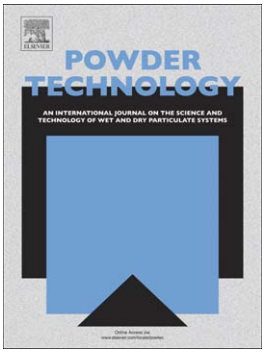

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Processing-induced salt formation of two oxicams in solid dosage forms affects dissolution behavior and chemical degradation

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ABSTRACT

There is a growing need to increase our understanding of physicochemical stability of pharmaceuticals during manufacturing. The present study has investigated effects of excipients and processing conditions on the physicochemical properties of two weakly acidic model drugs (piroxicam and lornoxicam) in solid dosage pharmaceuticals. By means of solid-state analysis it was observed that basic excipients (sodium bicarbonate and dicalcium phosphate) may induce salt formation of these drug compounds during wet granulation, whereby the drug dissolution rate from formulations containing lornoxicam was significantly increased while the dissolution from piroxicam-containing formulations was unaffected. Following preparation of the solid drug formulations, chromatographic analysis demonstrated that the processing-induced sodium salt formation increase chemical degradation of both model drugs during storage. Hence, the present study illustrate that processing-induced transformations in the solid phase of drugs encountered during manufacture of solid dosage pharmaceuticals may significantly impact critical quality attributes of the final medicinal product.