The objective of the work was to assess the effect of moisture content of chitin calcium silicate of two size ranges (two specific surface areas) on the rate of degradation of cefotaxime sodium. The surface area of the excipient was determined using adsorption method. The effect of moisture content of a given size range on the stability of the drug was determined at 40°C in the solid state. The moisture content was determined at the beginning and the end of the kinetic study using TGA. The degradation in solution was studied for comparison. Increasing the moisture content of the excipient of size range 63–180 μm (surface area 7.2 m(2)/g) from 3.88% to 8.06% increased the rate of degradation of the drug more than two times (from 0.0317 to 0.0718 h(−1)). While an opposite trend was observed for the excipient of size range <63 μm (surface area 55.4 m(2)/g). The rate of degradation at moisture content <3% was 0.4547 h(−1), almost two times higher than that (0.2594 h(−1)) at moisture content of 8.54%, and the degradation in solid state at both moisture contents was higher than that in solution (0.0871 h(−1)). In conclusion, the rate of degradation in solid should be studied taking into consideration the specific surface area and moisture content of the excipient at the storage condition and it may be higher than that in solution.

Alsenz, J. et al. (2016). "Miniaturized INtrinsic DISsolution Screening (MINDISS) assay for preformulation." *Eur J Pharm Sci* 87:3–13.

This study describes a novel Miniaturized INtrinsic DISsolution Screening (MINDISS) assay for measuring disk intrinsic dissolution rates (DIDR). In MINDISS, compacted mini disks of drugs (2–5 mg/disk) are prepared in custom made holders with a surface area of 3 mm(2). Disks are immersed, pellet side down, into 0.35 mL of appropriate dissolution media per well in 96-well microtiter plates, media are stirred, and disk-holders are transferred to new wells after defined periods of time. After filtration, drug concentration in dissolution media is quantified by Ultra Performance Liquid Chromatography (UPLC) and solid-state property of the disk is characterized by Raman spectroscopy. MINDISS was identified as an easy-to-use tool for rapid, parallel determination of DIDR of compounds that requires only small amounts of compound and of dissolution medium. Results obtained with marketed drugs in MINDISS correlate well with large scale DIDR methods and indicate that MINDISS can be used for (1) rank-ordering of compounds by intrinsic dissolution in late phase discovery and early development, (2) comparison of polymorphic forms and salts, (3) screening and selection of appropriate dissolution media, and (4) characterization of the intestinal release behavior of compounds along the gastro intestinal tract by changing biorelevant media during experiments.

Antovska, P. et al. (2013). "Solid-state compatibility screening of excipients suitable for development of indapamide sustained release solid-dosage formulation." *Pharm Dev Technol* 18(2):481–489.

Differential scanning calorimetry and Fourier transform infrared spectroscopy were applied as screening analytical methods to assess the solid-state compatibility of indapamide (4-chloro-N-(2-methyl-2,3-dihydroindol-1-yl)-3-sulfamoyl-benzamide) with several polymers aimed for development of 24 hours sustained release solid-dosage formulation. After the initial research phase which was directed towards selection of suitable polymer matrices, based on their solid-state compatibility with the studied pharmaceutical active ingredient, the second phase of evaluation was intended for