phase to a porous carrier (aluminometasilicates, microcrystalline cellulose, etc.). After addition of further excipients, in particular a coating material (colloidal silica), a powder is formed with the properties suitable for conversion to conventional solid unit dosage forms for oral administration (tablets, capsules). The drug is subsequently administered to the GIT already in a dissolved state, and moreover, the high surface area of the excipients and their surface hydrophilization by the solvent used, facilitates its contact with and release to the dissolution medium and GI fluids. This technology, due to its ease of preparation, represents an interesting alternative to the currently used methods of bioavailability improvement. The article follows up, by describing the specific aspects influencing the preparation of liquid systems, on the already published papers about the bioavailability of drugs and the possibilities of its technological improvement. Key words: liquisolid systems bioavailability porous carrier coating material preformulation studies.

Kim, M. S. et al. (2013). "Supersaturatable formulations for the enhanced oral absorption of sirolimus." *Int J Pharm* 445(1–2):108–116.

The purpose of this study was to develop supersaturatable formulations for the enhanced solubility and oral absorption of sirolimus. Supersaturatable formulations of hydrophilic polymers and/or surfactants were screened by formulation screening, which is based on solvent casting. The solid dispersion particles in the optimized formulations were prepared by spray drying. The particles were characterized in vitro and in vivo. The most effective supersaturatable formulation found in the formulation screening process was hydroxypropylmethyl cellulose (HPMC)-D-alpha-tocopheryl polyethylene glycol 1000 succinate (TPGS), followed by HPMC-Sucroester. In addition, the supersaturated state generated from HPMC-TPGS and HPMC-Sucroester 15 particles prepared by spray drying significantly improved the oral absorption of sirolimus in rats. Based on the pharmacokinetic parameters and supporting in vitro supersaturated dissolution data, the enhanced supersaturation properties of sirolimus led to enhanced in vivo oral absorption. In addition, the experimental results from the formulation screening used in our study could be useful for enhancing the bioavailability of sirolimus in preformulation and formulation studies.

Kumar, L. et al. (2013). "Effect of counterion on the solid state photodegradation behavior of prazosin salts." *AAPS Pharm Sci Tech* 14(2):757–763.

The effect of counterion was evaluated on the photodegradation behavior of six prazosin salts, viz., prazosin hydrochloride anhydrous, prazosin hydrochloride polyhydrate, prazosin tosylate anhydrous, prazosin tosylate monohydrate, prazosin oxalate dihydrate, and prazosin camsylate anhydrous. The salts were subjected to UV-Visible irradiation in a photostability test chamber for 10 days. The samples were analyzed for chemical changes by a specific stability-indicating high-performance liquid chromatography method. pH of the microenvironment was determined in 10%w/v aqueous slurry of the salts. The observed order of photostability was: prazosin hydrochloride anhydrous > prazosin camsylate anhydrous ~ prazosin-free base > prazosin hydrochloride polyhydrate > prazosin tosylate anhydrous > prazosin oxalate dihydrate ~ prazosin tosylate monohydrate. Multivariate analysis of the photodegradation behavior suggested predominant contribution of the state of hydration and also intrinsic photosensitivity of the counterion. Overall, hydrated salts showed higher photodegradation compared to their anhydrous counterparts. Within the anhydrous