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Monitoring the Phase Behavior of Supersaturated Solutions of Poorly Water-Soluble Drugs Using Fluorescence Techniques

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ABSTRACT

Phase transformations of poorly water-soluble drugs, in low concentration, supersaturated aqueous solutions are of considerable interest. Herein, fluorescence lifetime and steady-state fluorescence spectroscopy were employed to investigate the fluorescence properties of the autofluorescent compound, felodipine (a 1,4-dihydropyridine calcium channel blocker), when present as free drug in solution, drug-rich aggregates and crystals. Measurements were also performed in the absence and presence of liver microsomes. To study non-fluorescent drugs, an environment-sensitive fluoroprobe, PRODAN, was employed. The lifetime of free felodipine in