**Molecular Mobility as a Key Factor in Controlling Physical Stability of Amorphous Drug: Celecoxib**.

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Broadband dielectric spectroscopy was employed to monitor the molecular mobility both in superccoled and glassy state of celecoxib. A number of relaxation processes were detected and their molecular origin and temperature characteristics were established. We found that the structural relaxation time at the temperature of storage of amorphous celecoxib, T=293 K, correspond to the time of maximum rate of recrystallization of amorphous celecoxib at this temperature. Thus, it was concluded that physical stability of the studied amorphous drug is controlled mainly by the structural relaxation process. Herein we also indicate that the secondary relaxation process which originates from intermolecular interactions might be responsible for devitrification of celecoxib. Finally, we also provide a method how to efficiently improve a stability of amorphous celecoxib.