

Polymorphism Control in the Sulfonamide Family of Compounds Mediated by Solvent

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Polymorphism, the ability of a compound to crystallize in more than one solid form, can have a significant impact on the physical properties of a material (e.g. melting point, solubility, colour, morphology). Thus, although consisting of the same molecular unit, different polymorphs should be regarded as different materials. To control polymorphism, a significant understanding of the influence of experimental conditions (e.g. solvent, solution concentration, cooling or evaporation profiles) on the predominance of crystallization pathways favouring the formation of specific crystal forms is needed.

In early 1900's, sulfonamides (Figure 1) were identified as the first family of substances displaying antibacterial [1]. Since then, polymorphism has been reported for some of its members, but the reproducible preparation of specific crystal forms was never achieved and conflicting results regarding the obtention of a given polymorph through crystallization are often found in the literature [2-4]. This work describes a systematic study of the crystallization of sulfonamides focused on the selective and reproducible preparation of specific polymorphs.

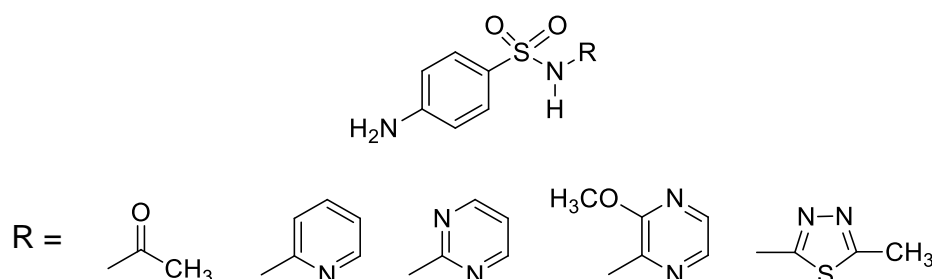


Figure 1. Molecular structure of the sulfonamides studied in this work.

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