MS35-P36 | MULTICOMPONENT CRYSTAL FORMATION OF BACLOFEN WITH ACIDS AND BASES

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Amino acids are used often as coformers in cocrystallisation experiments due to the coexistence of a carboxylic acid/carboxylate and a primary amine/ammonium moiety in their molecular structure. Extensive investigations often focus on the α-amino acids because of their biological importance and abundance in naturally occurring proteins and, rather less interest has been shown towards the β or γ-amino acids [1]. Baclofen (BAC, (*RS*)-4-amino-3-(4-chlorophenyl)butanoic acid), a γ-amino acid is an active pharmaceutical ingredient that is in the focus of interest in the South African pharmaceutical research because of its possible use in treatment of soft drug addictions and early stage of alcoholism. We have previously used BAC to form multicomponent crystals with a series of organic acids and concluded that γ-amino acids, such as BAC, are promising crystal engineering tools because of their structural flexibility and hydrogen bonding properties [2].

Seven multicomponent crystals of BAC were formed with both acidic and basic coformers to investigate the synthon formation of BAC when it is in protonated or deprotonated form. The crystal structure, thermal analysis and powder X-ray analysis of the multicomponent crystals are presented and conformation and protonation properties of the baclofen moiety are discussed.

Keywords: pharmaceutics, multicomponent crystals, crystal engineering

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