

Eutectics of Aspirin: exploring the factors influencing the functional aspects

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Organic Eutectics are a class of compounds whose structural and functional aspects are less explored. The multi-component domains arranged in the eutectic compositions lower the melting point and hence will find application in pharmaceuticals. Aspirin (ASP) is widely used as medicine for headache, fever etc. In literature, it is found that very few cocrystals, salts and eutectics has been reported for aspirin. In this study, we have successfully screened Aspirin with several substituted amides like isonicotinamide, benzamide, 4-fluorobenzamide, propionamide, nicotinamide and picolinamide. Cocrystallisation attempts to form binary combinations were based on liquid assisted grinding with stoichiometric ratios and initial assessment with PXRD shows the XRD patterns of both the parent compounds. Based on the Differential scanning calorimetry (DSC) studies indicate lowered single melting point confirming the eutectic behaviors as evidenced. The consequence of preferred eutectic growth will be discussed based on other cognate techniques. The factors influencing the functionality is analysed based on the hydrogen bonding potentials in the eutectic compositions.

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