In pharmaceutical development, amorphous solid and salts occupy a prominent place with their ability to enhance physiochemical properties like solubility and dissolution rate and hence the bioavailability. While 40% of the available drugs face serious problems with solubility and dissolution rate, more than 90% of the drugs fall in Class II and Class IV group of Biopharmaceutical Classification System (BCS). Need for other molecular adducts with higher stability and enhanced physical properties are required without altering the chemical identity of the drug. Additional approach such as polymorphs, solid dispersions, inclusion complexes, agglomerization and nanocrystals finds a new place for the improvement of physical properties. The study of cocrystals, cocrystals polymorphs and molecular salts with desired properties increases rapidly in the last decade. The knowledge of robust supramolecular synthons, influence of fluid-phase thermodynamics, and the use of complementary functional groups of appropriate GRAS (Generally Regarded As Safe) coformers will give a large variety of desired multi-components solids which also includes solvates. In this study, we have screened the various multiple forms of 4-Aminosalicylic acid (PAS) which is a nonsteroid anti-inflammatory antibiotic drug and used for the treatment of tuberculosis while 5-Aminosalicylic acid (ASA) is used to treat active ulcerative colitis or Crohn's disease. The drug, PAS and ASA has been reacted with several pharmaceutically acceptable pyridine based coformers and the influence of the strong synthon, COOH···Nheterocycle has been studied. Several co-crystals, salts, cocrystals polymorphs, and hydrates have been obtained. The role of solvent and API-coformer composition has a great importance in dictating the final structure has been discussed.


Keywords: cocrystals, supramolecular synthons