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Active Pharmaceutical Ingredients co-crystals via solvent-free reactions

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Dual-drug co-crystals comprising of active pharmaceutical ingredients (APIs); uracil and 5-fluorouracil with urea have been obtained by mechanochemical reactions. The formation of these co-crystals is typically towards drug design which is to help enhancing the solubility, stability and bioactivity in pharmaceutical development without changing the chemical composition of the APIs. These organic molecules undergo molecular recognition process to obtain a range of two dimensional networks through persistent hydrogen-bonding patterns adopted by certain functional groups, which acts as template and rely on the robustness of such motifs to create new solid- state structures. Hence, here we report the characterization, structural studies, binding energy and also the CDOCKER interaction of the co-crystals.

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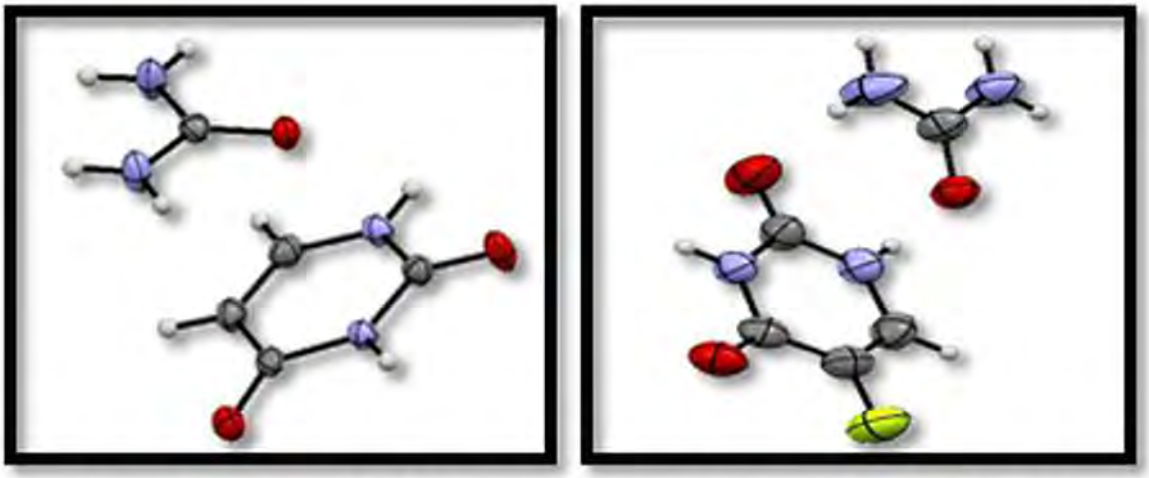

Co-crystals of Uracil-Urea and 5-Fluorouracil-Urea

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