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ABSTRACT BOOK

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Pharmaceutical Cocrystal: A bullet for enhancement of solubility and dissolution of poorly soluble drug

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Abstract: Solubility of an active pharmaceutical ingredient (API) is a key characteristic which influences the drug dissolution and subsequent bioavailability during the development of API into a suitable dosage form. Most of the APIs which are going through the development process in today's time belong to BCS Class II and BCS Class IV of Biopharmaceutical Classification System. The drugs belonging to these two classes have one thing in common and that is low aqueous solubility. For this reason, drugs belonging to these classes exhibit poor dissolution rate and bioavailability which affect the drug performance. Therefore, there is a great interest among the formulation chemist to develop reliable, efficient, cost effective and scalable methods to increase the aqueous solubility and dissolution of BCS class II and IV drugs. Cocrystallization is a unique technique by the help of which physicochemical properties (solubility, melting point etc.) can be modified without changing the intrinsic structure of API. Crystal packing of a solid is modified by crystal engineering technique which involves modification of intermolecular interactions that help to regulate breaking and creation of non-covalent bonds. So, improvement of performance characteristics of APIs using cocrystallization is a promising approach. Cocrystals exhibit better stability than amorphous drugs and can be modified to give immediate or prolonged release formulations & hence cocrystal formation appears to be an advantageous alternative for drug discovery.

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Subject category: Drug Discovery and delivery system development.