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Modification of drug particle morphology by spherical crystallization technique to obtain directly compressible material

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Spherical crystallization is a novel particle engineering/design technique developed by Kawashima et al, to overcome the problems associated with direct compression. Basically, it's single step process used for size enlargement of single, two or more, small dose or large dose drugs, in combination with or without diluent. The process of spherical crystallization involves simultaneous crystallization and agglomeration of drugs with/without excipients from good solvent and/or bridging liquid by addition of a non-solvent. The spherical agglomerates obtained by spherical crystallization can be directly compressed into tablet intermediates having satisfactory micromeritic (flowability), mechanical (friability, crushing), compressional (compressibility, compactibility), and drug release properties. Enhanced drug release from agglomerates and compacts thereof can be achieved using suitable polymer composition in the process design. Thus, it can be concluded that, spherical crystallization is a simple and cost effective process, which can be modify the morphology for particle design of all majority of drugs and combinations.

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