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Formulation ofCrystallo-Co-Agglomerates of Valsartan: Evaluation of Effect of Polymers on Drug Release

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Abstract: The aim of the present work was to develop spherical agglomerates of Valsartan by crystallo-co-agglomeration technique. Alcohol-chloroform-water system was used as crystallization medium. PVP K30, PEG 4000 and Sodium Alginate were used as carriers. Alcohol acted as a good solvent for valsartan, chloroform as bridging liquid and aqueous phase as non-solvent.The compatibility study was done by DSC, FTIR and surface morphology was studied by SEM. The growth of particle size and the spherical form of the agglomerates resulted in formation of products with good flow and packing properties.Drug release studies were performed in phosphate buffer pH 6.8 for 25 min. The dissolution data demonstrated that the rate of drug release was dependent upon the nature and concentration of polymer used in the formulation. FTIR and DSC studies showed that valsartan particles, crystallized in the presence of PVP K30, PEG 4000 and Sodium Alginate showed compatibility with carriers. Formulation P1 containing polymer PVP K30 in the ratio 1:0.50 was selected as an optimized formulation which showed better results with respect to percent drug release (106.72±0.46), percent yield (85.66±0.04%), MDT (4.76 hrs) and % DE (82.83%) when compared to other formulations.
Key words: Valsartan, Spherical agglomerates,Crystallo-co-agglomeration, PVP K30, Sodium Alginate, PEG 4000.

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