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Assessment of dissolution behaviour of Valsartan dual release mini matrix system using tablet in capsule technology

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The objective of the present study was to develop dual release Mini-matrix tablets of valsartan using tablet in capsule technology. Mini- tablets of valsartan were prepared by direct compression method using 2mm mini-tablets punch. First immediate release mini-tablets were formulated using Avicel PH 102 as diluents and binder. Croscarmellose sodium was used as super-disintegrant and Aerosil as glidant. Then sustained release minitablets were formulated using HPMC K100M as a polymer, which is a hydrophilic polymer. HPMC K100M was added in three different concentrations as 20, 30, 40 % (w/w). Dose for immediate release is 40mg. So, dose for sustained release was calculated by taking time required for sustained action as 12hr and the dose obtained for sustained releaseis 95.44mg. Minitablets each weighing 5mg were punched. Minitablets were calculated for 40mg which is the immediate release dose and those numbers of minitablet were placed, including the number of minitablets for the sustained release which dose is 95.44mg into a capsule of size 2. The release of Valsartan from the minitablets placed in capsule was studied in 900 ml of phosphate buffer pH 6.8 as dissolution medium using a USP dissolution basket apparatus at 50 rpm and 37 ± 0.5°C. Dissolution studies were performed for a period of 12 hrs and percentage of drug release was calculated using an equation obtained from a standard curve. The dual release behaviour was attained by combining immediate release and sustained release mini-tablets of the drug which can be filled into one capsule so that the delivery system can able to deliver a first impulse of the dose in the shortest time possible (a few min) and a second fraction of the dose for a prolonged time at a constant rate.

Biography

G N K Ganesh has completed his B. Pharmacy in R.V.S College Of Paramedical Sciences In the year 2000, And M.Pharmacy in Sri Ramakrishna Institute of Paramedical Sciences in the year 2003. Working as an Assistant Professor in J.S.S College of Pharmacy, Odhagamandalam. Published more than 15 papers in reputed journals. Presently persuing Ph.D. in JSS University as a part time candidate. Presented papers in both national and inter-national conferences.

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