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Formulation and characterization of osmotic delivery of Levetiracetam

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The present study deals with formulation and characterization of oral extended release elementary osmotic pump delivery system for the novel anti-epileptic drug-Levetiracetam. Levetiracetam is a highly water soluble drug over a wide range of pH 1 to 7.8. Therefore its release may be controlled by formulating it in the controlled release system like oral osmotic drug delivery.

The present research work describes the controlled release osmotic delivery of levetiracetam. Here, core tablets were prepared after optimizing the type and amount of binder, the type and amount of osmogen and the type and amount of polymer. Binders like maize starch, PVP K-90, co-povidone-28 were used. Sodium chloride and mannitol were tried as osmogen while different grade of HPMC in different concentration were used to increase its dissolution possessing properties. Later on, the core tablets were coated with different types and amount of cellulose acetate. Further the coated tablets were drilled using laser drill.

A 32 factorial design were applied by taking two variables – amount of osmogen and percentage weight gain of coat. The prepared tablets were evaluated for in vitro drug release and its mechanism of release. The optimized formula for oral elementary osmotic pump was found out and it was giving the desired drug release pattern for period of 12 hrs by zero order release mechanism.

Biography

Zankhana Pramodchandra Sheth has completed her Ph.D. at the age of 27 years from CMJ University- Shilong, Meghalaya. She is the Assistant Professor of Sat Kaival College of Pharmacy, Sarsa, Anand, affiliated to Gujarat Technological University and Approved by AICTE, PCI and DSIR, New Delhi. She has published 5 research papers in reputed international journals and 2 books in the subject of Pharmaceutical Microbiology. She is life time member of In Pharm Journals of Young Scientist. She has attended many conferences at national level and presented many paper at national level.

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