**OBJECTIVE OF THE PRESENT WORK:**

**Epilepsy** is a common chronic neurological disorder characterized by pattern of repeated seizure. About 50 million people worldwide have epilepsy and nearly 90% of the people suffering from epilepsy are discovered in developing countries. 70% of the time, Epilepsy responds to its treatment and about three fourths of the affected people in developing countries do not get the proper treatment. Onset of new cases occurs most frequently in infants and the elderly.

For a long time it was tried to develop a single drug for the treatment of all type of epilepsies but the causes of epilepsy are extremely diverse and for the treatment of Epilepsy, it should be according to the type of epilepsy. For an effective therapy for these chronic indications, drugs have to be delivered at a controlled or modified rate with minimal fluctuations in the plasma concentration for longer duration to achieve a steady state blood or tissue level that is therapeutically effective & non toxic for an extended period of time.

Marco Pappagallo, (2003) investigated the scientific rational use of AEDs in the treatment of neuropathic pain and migraine based on the clinical investigation of 5 newer AEDs such as gabapentin, lamotrigine, oxcarbazepine, topiramate and zonisamide and had concluded that newer AEDs are having better tolerability and fewer drug-drug interactions compared to tricyclic antidepressants.

Topiramate is available under the trade name Topamax® as immediate release tablet and sprinkle capsules, have been approved for use as an antiepileptic agent. For the treatment of epilepsy, the recommended dose of Topamax® is 400 mg/day in one or multiple doses. For adults with epilepsy, treatment is initiated with a dose of 25-50 mg/day, with the dose being titrated in increments of 25-50 mg at weekly intervals to the recommended or effective dose. Even though, topiramate has a relatively long half-life of 21 hours in vivo, it has not been prescribed as a single daily-dose due to severe side-effects due to peak plasma levels of the drug when taken in high doses. Instead, Topamax® is prescribed in multiple, “divided” doses, usually twice-a-day. Administration of the medicament in this manner is cumbersome and patients may forget to take their medication in a timely manner and each administration of a dose is associated with a peak and valley in plasma concentrations of the drug. The fluctuations associated with the peaks and valleys of blood plasma levels of the drug are undesirable.
Hence, there is a need for a formulation of topiramate, which reduces or eliminates the side effects, associated with peak fluctuation in plasma levels of the drug and preferably may be administered in a once-daily regimen to improve patient compliance. Various patent applications are available on topiramate extended release solid oral dosage form by various companies.

In order to provide a cost effective alternative medicine, a generic product is highly desirable and since all the current technologies are patented, there is a need to go for a different out of scope technology which can produce therapeutically equivalent product as that of probable innovator product.

In the present investigation, an attempt has been make to prepare a Modified release drug delivery system of the Topiramate in order to release the drug at a sustained rate over a specific period of time for the treatment of Epilepsy.