Chapter 7: Publication
7.1 A review on solid oral dosage form of antiepileptic drugs by pelletization techniques

A REVIEW ON SOLID ORAL DOSAGE FORM OF ANTIEPILEPTIC DRUGS
BY PELLETIZATION TECHNIQUES
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ABSTRACT:
Epilepsy is one of the severe diseases and it has wide scope in research. Various Antiepileptic drugs are available in market in the form of Tablet, Capsule, Solution, Suspension, Gel etc. Whereas, the Multiple unit dosage form manufactured by Pelletization technique gain a lot of popularity due to its advantages like increased surface area and dissolution, easy to fill in capsule, higher distribution in GI track, and flow of pellets. Pelletization is the growing technique in pharmaceutical field. Most of the drugs are now a day available in pellet forms. The current review focuses on Pelletization technique, coating of these pellets and the release of the drug from these coated pellets. Brief focus on different types of release patterns such as immediate release, sustained release, extended release, controlled release are mentioned. Need of Pelletization in formulation of antiepileptic drugs is also discussed. Coating of the pellets can be done in the fluidized bed processor and different parameters are discussed like Polymeric particle size, Film-forming temperature, Plasticizer, Blend polymer, Hydration of polymer, Properties of the core surface and other parameters like spray rate, product temperature, Atomization pressure etc. Also the theories of film formation like Wet sintering theory, Capillary pressure theory, sintering theory are discussed. Mechanism of drug release from the coated pellets is described.

Key words: Antiepileptic drugs, Pelletization, Multiparticulate.

INTRODUCTION:
Epilepsy, a disease that has been in existence for ages, continues to affect approximately 50 million individuals worldwide. The disease is often accompanied by neurobiological, cognitive, psychological, and behavioral changes that may heighten susceptibility to seizures and affect quality of life.
Antiepileptic drugs (AEDs) are the primary option for the management of epilepsy. Anti-epileptic drugs (AEDs) are also known as the anticonvulsant drugs or anti-seizure drugs. Now a day's new drugs are developed to treat the epilepsy as well as the existing drugs are designed in novel forms like pellets filled in capsule etc.

Dosage Forms of Antiepileptic Drugs:
Various drugs are available for the treatment of epilepsy. Specific use of a drug in treatment of epilepsy is not possible it depends upon the type of

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7.2 A simple, validated, single HPLC method for the determination of assay, dissolution-related substance of an antiepileptic drug in different pharmaceutical dosage form

A SIMPLE, VALIDATED, SINGLE HPLC METHOD FOR THE DETERMINATION OF ASSAY, DISSOLUTION, RELATED SUBSTANCE OF AN ANTIPELLEPTIC DRUG IN DIFFERENT PHARMACEUTICAL DOSAGE FORM

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ABSTRACT

A single high performance liquid chromatography (HPLC) method has been developed and validated for the quantitative estimation of Oxcarbazepine and its impurities (assays dissolution and related substances) in different type of dosage form. The chromatographic separation was performed on a Hypersil BDS C18 column with a particle size of 5µm (250x4.6 mm) and a mixture of 0.05M phosphate buffer adjusted to pH 6.0, methanol and acetonitrile in the ratio of 62:22:16 v/v/v as mobile phase at flow rate of 2.0 mL/minutes. Calibration showed that the response of impurity and drug substance was a linear function of concentration over the range 0.02–2.43 µg/mL (r2 ≥ 0.999) and the method was validated over this range for precision, intermediate precision, accuracy, linearity and specificity. For precision study, RSD of each impurity and drug substance was <5% and <2%, respectively. The method was found to be precise, accurate, linear and specific. The proposed method was successfully employed for assay, dissolution and related substances analysis of Oxcarbazepine immediate release (IR), extended release (ER) tablets and suspension. A simple isocratic method with 35 minutes run time for determination of all three critical parameters is an added advantage of getting product quality in one shot.

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