Analytical Techniques in Pharmaceutical Analysis

Mitkari Pratik[1], Asst.Prof.Harangule Y R[2]
[1,2]*Latur College of Pharmcy, Hasegaon*

Abstract **- The development of medicine revolutionized human health. These pharmacies can only serve their purposes if they are free of contamination and are supplied at the right price. To make drugs achieve their chemical and chemical purposes methods are developed from time to time.**

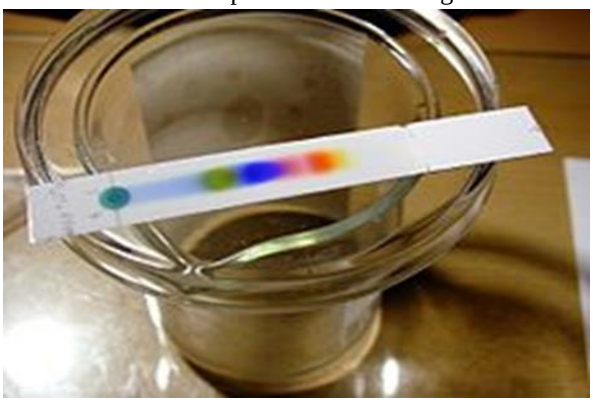
INTRODUCTION

The drug development process begins with the invention of a drug molecule that has shown the value of treatment in the military, to control, diagnose or treat disease. The synthesis and formation of such molecules also called active pharmaceutical ingredients (APIs) and their analysis to create precursors safety and performance data are the prerequisites speculation of drug seekers for further detailed investigation.

CHROMATOGRAPHIC TECHNIQUES

Thin layer chromatography

Thin chromatography layer is a popular method for the analysis of biodiversity, due to its unique advantages such as small sample purification, wide selection of moving categories, flexibility of sample separation, high loading capacity and low cost. TLC is a powerful diagnostic tool for many unknown drug substances (Szepesi and Nyiredy, 1996). It provides a high level of assurance that all potential of the drug is isolated.



(High performance thin layer chromatography)

High-performance thin-layer chromatography (HPTLC)

An advanced form of chronological chromatography (TLC). Many enhancements can be made in the form of chromatography with flexible layers to perform different steps, maximizing the resulting resolution, and allowing more accurate calculation measurements. The automation helps to overcome uncertainty in the size of the droplets and in the area where the sample is applied to the TLC plate by hand.

High-performance liquid chromatography

HPLC is an advanced form of liquid chromatography used in separating complex molecules of compounds HPTLC is a fast and flexible separation method to analyze different samples. This method is useful in many ways as it is easy to manage and requires a short period of time to analyze the weight or contamination of the contaminated sample.

High-performance liquid chromatography (HPLC), formerly referred to as high-pressure liquid chromatography, is a technique in analytical chemistry used to separate, identify, and quantify each component in a mixture. It relies on pumps to pass a pressurized liquid solvent containing the sample mixture through a column filled with a solid adsorbent material. Each component in the sample interacts slightly differently with the adsorbent material, causing different flow rates for the different components and leading to the separation of the components as they flow out of the column.

Gas chromatography

Gas chromatography (GC) is a common type of chromatography used in the chemical analysis of the separation and analysis of compounds that can be breathed without decomposition. Typical use of GC involves testing the purity of an object, or separating the various components of a compound. [1] In preparatory chromatography, GC can be used to

prepare pure compounds from the compound. Gas chromatography is the process of separating chemicals from an organ by injecting a gas or liquid sample into a moving phase, commonly called a carrier gas, and transferring the gas to a stationary phase. The mobile category is usually an inward gas or inactive gas such as helium, argon, nitrogen or hydrogen.

SPECTROSCOPIC TECHNIQUES

Spectrophotometry

Another important group of mechanisms that find an important place in pharmacopoeias are spectrophotometric methods based on UV exposure to environmental and chemical reactions (Gorog, 1995). Spectrophotometry is a limited measure of showing or moving object structures as a length function.

The advantage of these methods is the low time and use of staff. The accuracy of these methods is also excellent. The use of UV-Vis spectrophotometry used primarily in the analysis of drug dosage

It is important to mention that colorimetric methods are regularly used for the assay of bulk materials. For example, the blue tetrazolium assay is used for the determination of corticosteroid drug formulations (Gorog and Szasz, 1978; Gorog,1983). mination of cardiac glycosides and is presented in European Pharmacopoeia.

Near infrared spectroscopy (NIRS)

Next to infrared spectroscopy (NIRS) is a fast and uncomplicated procedure that provides multiple molecular analysis of almost any matrix. In recent years, NIR spectroscopy has gained widespread appreciation from the pharmaceutical industry raw material testing, product quality control and process caution.

Nuclear magnetic resonance (NMR)

NMR is a phenomenon in which a strong magnetic nuclei is disturbed by a weak magnetic field (in the immediate vicinity [1]) and responds by producing an electrical signal with a frequency of the local magnetic field at the nucleus. This process takes place near resonance, where the frequency of oscillation corresponds to the internal mass of the nuclei, which comes from the static magnetic field, the chemical environment.

Fluorimetry and phosphorimetry

The pharmaceutical industry continues to seek out sophisticated analytical methods using small samples. Fluorescence spectrometry is one of the methods used by the purpose of high sensitivity without loss of clarity or accurately. Gradual increase in the number of articles in use of fluorimetry phosphorimetry in the analysis of the number of different drugs in dosage forms also biological fluids have been observed in the past.

Electrochemical methods

The use of electrochemical techniques in analysis Drugs and pharmaceuticals have increased significantly over a few years ago. The renewed interest in electrochemical techniques can be partially counted on the most widely used tools and increase the understanding of strategies themselves. Here the use of various electrochemical methods in the analysis of drugs and therapies is presented.

CONCLUSION

The principle purpose of the pharmaceutical drugs is to serve the human to cause them to free from capacity illness or prevention of the disorder. For the medicine to serve its meant reason they have to be free from impurity or other interference which might harm humans. This evaluation is geared toward focusing the role of various analytical gadgets within the assay of

prescribed drugs and giving a thorough literature survey of the instrumentation concerned in pharmaceutical evaluation. The assessment additionally highlights the development of the techniques beginning from the older titrimetric technique and achieving the advanced hyphenated technique stages.

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[2] Recent Trends in Analytical Techniques for the Development of Pharmaceutical Drugs Ravali R1*, Phaneendra M2, Bhanu Jyothi K3, Ramya Santhoshi L4 and Sushma K5 1Department of Biotechnology, Periyar University, Tamilnadu, India.