

## **Introduction**

**Veterinary medicine is the branch of science that deals with the prevention, diagnosis and treatment of diseases, disorders and injuries in animals. Veterinary science helps human health through the monitoring and control of zoonotic disease. Veterinary drugs are present in different pharmaceutical dosage forms and most of them have limited analytical methods for their determination especially when present in mixture form.**

**Our study is concerned with the analysis of some antimicrobial agents, which affect wide range of micro-organisms such as bacteria, viruses, fungi and parasites either by killing or stopping their growth. antiparasitic drugs are class of medications which are indicated for the treatment of parasitic diseases, such as those caused by helminths, parasitic fungi, and protozoa, among others.**

**The aim of the proposed work is to optimize and develop simple, sensitive and selective validated methods for analytical determination of certain antimicrobial agents in pure form and pharmaceutical preparations either being single or combined with other compounds.**

### **The objectives of this study:**

- 1. Develop new, sensitive and simple analytical methods for the determination of certain pharmaceutical preparations containing the selected compounds either in their single, mixture forms or in the presence of degradation products.**
- 2. Detect and determine the different compounds without interference from additives and excipients.**
- 3. Validation study of the proposed methods according to ICH guidelines.**

**4. Statistical comparison between the results obtained by the developed methods and pharmacopeia or reference method.**

**Research proposal:**

**The strategy includes the determination of the pure form of the compound by different analytical techniques. The selected compounds include:**

- **Doxycycline hyclate and Bromhexine hydrochloride.**
- **Diclazuril and Amprolium.**
- **Ceftiofur hydrochloride and Ketoprofen.**
- **Florfenicol and Flunixin meglumine.**
- **Doxycycline hydrochloride and Spiramycin.**
- **Tylosin tartrate and amoxicillin trihydrate.**
- **And others.**

**Methodology**

**In this study various analytical techniques will be employed for the quality control of the studied drugs such as:**

- 1-Spectroscopic methods of analysis such as UV - Visible spectroscopy.**
- 2-Chromatographic methods of analysis such as HPLC, TLC, GC....**
- 3-Electrochemical methods of analysis.**