# Chapter 2

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**Chapter 2: Review of Literature**

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2. REVIEW OF LITERATURE

2.1 GUANFACIN LITERATURE SURVEY

Literature survey reveals that there are few methods reported for quantitation, identification of Guanfacine in biological matrices [9-17], pharmaceutical formulations [18]. These methods are developed with different analytical instruments like HPLC-MS [12], GC-MS [14], electron-capture gas liquid chromatography [15], gas Chromatography [16], spectrophotometric [17], and HPLC [18]. Among all the reported methods for quantification of Guanfacine in rats and human plasma, dried blood spots methods are helpful for clinical pharmacokinetics. Now a days, it is important to develop most sensitive method by using advanced instrument LC-MS/MS for clinical pharmacokinetics application and bioanalysis. [6-8]

The reported methods [12] do not show high sensitive and rugged method. It is required to develop and validate the most economical, simple, rugged and reproducible bioanalytical method for quantification of Guanfacine in biological matrices for its clinical pharmacokinetics.

Metaxalone Literature Survey

To our knowledge as of now, only a few methods were reported [48-50] for Metaxalone quantification. Mistri HN et.al [48, 49] used Metaxalone as an internal standard for comparison.
purpose only. Nirogi et.al [50] developed and validated for the quantification of Metaxaline in biological matrices by LC–MS/MS. They developed with linearity range 50-500µg/L at a total run time of 2.5 minutes for each injection and compared the drug with Galantamine as an internal standard. Goswamin et al; [51] developed and validated a method in human plasma by solid phase extraction with a linearity range of 0.105-10.081 µg/mL. They used large plasma volume (200 µL).

It is important to compare the drug with isotope labeled or similar analogue internal standard to correct for the possible losses of analyte during sample preparation or sample injection. The proposed method must have required sensitivity for analysis.

### 2.2 **ATOVAQUONE LITERATURE SURVEY**

Literature survey reveals that, there are few methods reported for quantification of Atavaquone by Capillary electrophoresis(56), Capillary zone electrophoresis(57), micellar electrokinetic chromatography(58), Combination of chiroptical, absorption and fluorescence spectroscopic methods(59), HPLC(60-81), LC-MS(82-84). Among all, few methods were developed in Pharmaceutical [56,58,59,60-68]. Biological [57, 69-84] samples. Among all LC-MS (82-84) methods achieved best results in terms of clinical pharmacokinetic and bioequivalence studies.
There is no method reported for quantification of Atavaquone in rat plasma by LC-MS. The aim of the present research includes development and validation of Atavaquone in rat plasma by using LC-MS/MS. The same should be applicable for pharmacokinetic study.

2.3 LEFLUNOMIDE METABOLITE- TERIFLUNOMIDE

LITERATURE SURVEY

Literature survey reveals that very few bio analytical methods have been reported for the determination of LM, including LC-MS(94-96), high–performance liquid chromatography (HPLC) method(97-103) and currently, the goal of bio–analytical scientists is to develop reliable, rapid and efficient procedures for performing qualitative and quantitative analyses suitable for clinical and preclinical studies. Unfortunately, conventional HPLC methods must sacrifice either time or resolution. As a result, it is necessary to develop fast or ultra–fast methods such as LC–MS/MS without any loss of separation efficiency. To date, a few LC–MS/MS methods (94-96) were reported for the determination of LM in Human plasma.