Name of the Scholar: Mohd. Suhail
Name of Supervisor: Prof. Amir Azam
Name of the Department: Chemistry
Ph.D. thesis title: "Development and validation of chiral-HPLC methods for analysis of two chiral centers molecules in biological samples"

Abstract

Enantiomeric resolution of multichiral centre racemates is an important area as some multichiral centre racemates are of great medicinal importance. There are 80% drugs in market, which are chiral in nature i.e., exist in more than one enantiomeric forms. It is well known that one of the enantiomeric forms is useful and another may or may not be harmful. However, enantioseparation of such types of racemates/drugs is a challenging task. Of course, chiral separation of few multichiral molecules has been done but still there is requirement for more methods to be developed. Therefore, our aim was to develop more HPLC methods for analysis of other two chiral centers molecules in biological samples.

The main objectives which were achieved are as follows:

i. A sensitive, efficient, selective and reproducible chiral-HPLC method was developed for analysis of dipeptide using polysaccharide based columns under reversed phase mode.

ii. A sensitive, efficient, selective and reproducible chiral-HPLC method was developed for analysis of dipeptide using polysaccharide based columns under normal phase mode.

iii. A sensitive, efficient, selective and reproducible chiral-HPLC method was development for analysis of various drug using polysaccharide based columns under reversed phase mode.

iv. A selective, economic and reproducible sample preparation methods (solid phase extraction) was development for analysis of dipeptide and various drugs in biological samples.

The pharmacokinetics, pharmacodynamics, metabolic screening, dissolution, stability, permeability and mapping studies are the main requirements for developing any drug. The developed chiral methods will be highly useful tools for the clinicians, scientist and industry person of whole of the world. Briefly, these methods will be the best diagnostic tool to analyze these chiral drugs in biological sample such as human plasma and urine for various purpose.