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Title : DEVELOPMENT OF ANALYTICAL METHOD FOR  
AMLODIPINE DETERMINATION IN HUMAN PLASMA

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### Abstract

Amlodipine is a dihydropyridine calcium channel blocker used for lowering blood pressure in hypertensive patients. It is a very potent drug with a low plasma concentration. To study pharmacokinetic of amlodipine, a sensitive and selective analytical method for determining of the drug in human plasma is, therefore, necessary. The aim of this study is to develop the suitable method for quantitative analysis of amlodipine in human plasma. Some analytical techniques i.e. HPLC couple to UV, fluorescence and MS/MS detectors, were tested. It was found that HPLC with either UV or fluorescence detectors did not give enough sensitivity for plasma sample analysis. On the contrary, HPLC-MS/MS was a powerful method for amlodipine analysis. The plasma samples were extracted with a mixture of diethylether and n-heptane, resulting in the amlodipine recovery of 62.73-69.72%. The calibration curve was linear over the range of 0.05-15 ng/ml. The lower limit of quantitation was 0.05 ng/ml. The intra-day and inter-day precision measurement showed % CVs of 6.16-9.42% and 4.37-9.63%, respectively, while the intra-day and inter-day accuracies were 95.3-103% and 95.6-100%, respectively. The plasma sample containing amlodipine showed good stability after being kept at  $-80^{\circ}\text{C}$  for two months and after three cycles of freeze-thaw process.