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RESEARCH ARTICLE

SIMULTANEOUS ESTIMATION OF AMLODIPINE AND ROSUVASTATIN IN COMBINED BULK FORMS BY RP-HPLC USING ULTRAVIOLET DETECTION

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The objective of the study was to develop simple RP-HPLC method for the simultaneous determination of amlodipine and rosuvastatin. In this method, kromasil C18 (100 mm, 4.6 mm, 5 μm) column was used. The mobile phase and flow rate used were {(acetonitrile 40, 55, 70, 40, 40): (phosphate buffer 60, 45, 30, 60, 60)}, (Time 0.5, 2.0, 3.0, 3.0, 2.0 min). UV detection was monitored at 239 nm. Calibration graphs were established for amlodipine and rosuvastatin. The average retention time for amlodipine and rosuvastatin was found to be 2.40±0.16 min and 4.28±0.04 min, respectively. The intraday and Interday precision expressed as percent relative standard deviation was below 2%. The validated HPLC method was found to be rapid, precise and accurate and can be readily utilized for analysis of amlodipine and rosuvastatin in bulk forms.

Key words: Amlodipine, Rosuvastatin, RP-HPLC, Method development, Validation.

INTRODUCTION

Amlodipine besylate, 2-[(2-aminoethoxy)-methyl]-4-(2-chlorophenyl) 1,4-dihydro-6-methyl-3,5-pyridine-dicarboxylic acid-3 ethyl-5 methyl ester (**Figure 1**), is a long-acting calcium channel blocker which is used as an anti-hypertensive and in the treatment of angina (EP, 2005; USP, 2007).

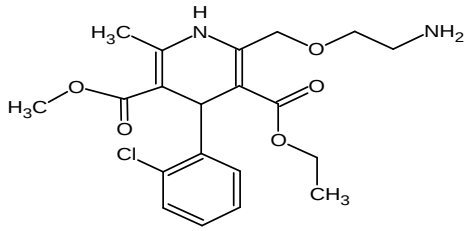

Fig. 1. Structure of amlodipine

Owing to widespread use of amlodipine in different kinds of pharmaceutical preparations, rapid and sensitive methods for the determination of amlodipine individual and in combination are being investigated (Rahman and Azmi, 2001; Zarghi *et al* 2005; Dongre *et al* 2008). The most recent methods for the determination of amlodipine besylate include chromatographic, spectrophotometric and titrimetric techniques.

Rosuvastatin, (3R, 5S, 6E)-7-[4-(4-fluorophenyl)-2-(N-methylmethanesulfonamido)-6-(propan-2-yl) pyrimidin-5-yl]-3, 5-dihydroxyhept-6-enoic acid (**Figure 2**), is a member of the drug class of statins which is used to treat high cholesterol and related conditions, and to prevent cardiovascular disease (O'Neil, 2006; Srinivasa Rao *et al* 2011). In the literature, a capillary zone electrophoretic, UV spectrophotometric, LC/MS, and high performance liquid chromatography (HPLC) methods are reported for the analysis of rosuvastatin (Sane *et al* 2005; Gupta *et al* 2009; Kaila *et al* 2010). More accurate, simple and widely used HPLC method has been not reported for the simultaneous estimation of amlodipine and rosuvastatin in combination formulation.