Validation and determination of Glimepiride, Atorvastatin and Amlodipine in dosage form and plasma by using HPLC method

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Abstract

Validated simple, fast, reliable, selective and accurate HPLC method with UV detection for the simultaneous determination of atorvastatin, glimepiride and amlodipine in a solution and plasma matrix was developed. The applied method consisted of a mobile phase containing water, methanol and acetonitrile 1.58:1:1(v/v %) with triethylamine at pH 8.0, a flow rate of 1.5 ml/min and a UV detector at 237 nm wavelength and the internal standard was chosen to be propylparaben. Furthermore, different but slight variations were introduced in the mobile phase, pH, wavelength, and column temperature to ensure the robustness of the method in yielding good accuracy and precision. In addition, other parameters such as sunlight sample exposure and acid degradation were evaluated on solutions containing the three drugs. The resolution, retention times and peak heights were good enough for all the three drugs but did change in different conditions such as temperature, wavelength, slight change in the pH and mobile phase. In conclusion, the method is suitable to determine amlodipine, glimepiride and atorvastatin simultaneously in two different matrices, diluent and plasma.