

## **Analytical methods for the quantitative determination of statins in biological samples based on HPLC and GC**

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### Abstract

The aim of the present study was to review published analytical methods for the quantitative determinations of presently available four 3-hydroxy-3-methylglutaryl coenzyme A reductase inhibitors ( "statins " ), atorvastatin, simvastatin, lovastatin and fluvastatin, for therapeutic drug monitoring purpose. Almost all assay reviewed are based on either high-performance liquid chromatography (HPLC) or gas chromatography (GC). HPLC is the most popular method of the two. Most often a mass detector and a UV detector, in case of fluvastatin a fluorescence detector have been used. Moreover, some derivatization procedures have been used to decrease sensitivity in some of the assay. HPLC-mass spectrometry (MS) assays offer improved sensitivity and selectivity but are not available for most laboratories. Besides, study on the stability of statins existing in solution with their lactone equilibrium products in a pH-dependent manner is included.

This review shows that most method allow quantitative determination of statins in plasma or serum, in the ng/ml range, therefore they are suitable for therapeutic drug monitoring purpose of this category drugs. But still there is necessity to develop new easy and cheap analytical method for some of the statins.