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HPLC based method for proteomic biomarker analysis: Application of *in vivo* drug metabolite in human plasma

Sermin Tetik
Marmara University, Turkey

Today, coronary arterial disease (CAD) is a prominent cause of death in developed and developing countries. It is known that CAD is more prevalent in Turkey than in Western countries and it appears that this rate of prevalence is likely to increase in the coming years. Atorvastatin, which is a drug, is a 3-hydroxy-3-methylglutaryl-coenzyme A (HMG-CoA) reductase inhibitor, which limits the rate of cholesterol biosynthesis. Paraoxonase 3 (PON3) is related to high density lipoprotein (HDL) and it has been suggested that it protects low density lipoprotein (LDL) against oxidation. Paraoxonase 3 activity in human blood plasma is considered to be an adequate biomarker for tracking premature atherosclerosis but it has not yet been used in any official method for tracking atorvastatin which reaches systematic circulation and stimulates PON3 activity. In our experimental model, we aimed to characterize PON3 activity in human blood with atorvastatin (AT) as a substrate and its metabolite, hydroxy-acid atorvastatin (HAT). We used a modified method stemming from different methods. Patients with atherosclerosis were divided into two subgroups as pre- and post-operation. Blood samples were collected from patients with atherosclerosis who took atorvastatin (20 mg/day). Separation of AT and HAT was evaluated on liquid chromatography (C18) column. This study reports an accurate, sensitive and reliable liquid chromatographic method for the determination of atorvastatin and its metabolite, HAT, which, to our knowledge, constitutes the first *in vivo* approach in the literature.

Biography

Sermin Tetik completed her PhD in Biochemistry department, Faculty of Pharmacy, University of Marmara (Istanbul-Turkey). Currently, she is a Professor at the same University. She joined two research programmes as Visiting Professor; one of them was in Pharmacology-Pathology Department School of Medicine at Loyola University, Chicago and the other one was at Florida Cancer Research Institute of Florida University, Orlando, USA. She heads her research group which focuses on "Thrombosis–hemostasis, proteomics, biomarkers and modified protein structure/function on different diseases". She has published over 40 scientific articles and over 40 international abstracts in reputed journals and several book chapters. She has served as Editorial Board Member of reputed journals.

stetik@marmara.edu.tr

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