



Effects of Statins on Rat Liver Microsomal Aspirin Esterase Activities *In Vitro*

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SUMMARY. Aspirin and statins all are the most widely employed drugs in the prevention of cardiovascular disease. The combined use of statins and aspirin in patients with diabetic dyslipidemia has strongly been recommend by the Adult Treatment Panel III (ATP III) of the National Cholesterol Education Program (NCEP), however the reasons for statins and aspirin being underutilized in the medical community are unclear. In this paper, we optimized culture conditions of aspirin degradation with orthogonal test by adjusting some factors such as substrates concentration, enzyme concentration, pH and reaction time, which influence activity of aspirin esterase from rat liver microsomes *in vitro*. Next, the evaluation method of aspirin metabolism was established via HPLC system to analyze the change of aspirin esterase activity under statins (simvastatin, pravastatin, lovastatin, fluvastatin and atorvastatin) interference. The results showed simvastatin and lovastatin reduced metabolism of aspirin due to their inhibition effect on aspirin esterase activity. But administration of pravastatin, fluvastatin and atorvastatin did not show statistically significant effect on aspirin esterase activity.

KEY WORDS: Aspirin esterase, Enzyme activities, Liver microsomal, Rat, Statins.

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