



## Effect of Simvastatin on the Generation of Autoantibodies Against Oxidized LDL and Progression of Atherosclerosis in Rabbits

Daniela C.U. CAVALLINI \*<sup>1</sup>, Dulcinéia S.P. ABDALLA <sup>2</sup>,  
Nadiége D. PAULY-SILVEIRA <sup>1</sup> & Elizeu A. ROSSI <sup>1</sup>

<sup>1</sup> *Department of Food & Nutrition, Faculty of Pharmaceutical Sciences,  
Sao Paulo State University, Araraquara, SP, Brazil*

<sup>2</sup> *Department of Clinical and Toxicological Analyses, Faculty of Pharmaceutical Sciences,  
University of Sao Paulo, Sao Paulo, Brazil.*

**SUMMARY.** Oxidized Low-Density Lipoproteins (oxLDL) and autoantibodies against oxLDL are important in the development of atherosclerotic lesions. Statins are efficacious in the control of dyslipidemia and prevention of atherosclerosis; however, many questions concerning the mechanism of action of such drugs remain unknown. This work investigated the effect of simvastatin on generation of autoantibodies against oxLDL and development of atherosclerosis in rabbits. The animals were divided into three groups: control, hypercholesterolemic, and hypercholesterolemic simvastatin (3.0 mg simvastatin/ kg body weight). Concentrations of autoantibodies against oxLDL were determined on days 0, 30 and 60 of the experiment and the atherosclerotic lesions were evaluated at the end of the study. Simvastatin reduced intimal proliferation in the thoracic region, prevented arterial calcification and inhibited the generation of autoantibodies against oxLDL. In conclusion, daily administration of simvastatin slows down atherosclerotic lesion development in rabbits with induced hypercholesterolemia and inhibition on generation of autoantibodies against oxLDL contributes to the cardioprotective effect observed.

**KEY WORDS:** Atherosclerosis, Autoantibodies against oxidized LDL, Simvastatin.

\* Author to whom correspondence should be addressed. *E-mail:* daniducavallini@ig.com.br