Oxidative stress and lipid peroxidation seems to play a central role in the process of metabolic dysfunctions. This study aimed to determine the effect of CLA and/or phytosterols on oxidative stress enzymes SOD, CAT and GPx, as well as on lipid peroxidation markers plasma ISO and MDA of Sprague-Dawley rats fed with high-fat diet. Twenty-one-days-old Sprague-Dawley rats were divided into five groups (n = 5): Standard group (P), Standard High-Fat group (HF) and three high-fat groups fed diets added CLA (HC), phytosterol (HP) and phytosterols plus CLA (HS). Animals were caged for 65 days. Analyses of oxidative stress enzymes and ISO were performed using commercial kits and analyses of MDA by TBARS method. Comparing the P group to the others, CLA and/or phytosterols supplementation did not show modifications in SOD (p=0.1056). CAT decreased 54%, 52% and 32% in group HC, HP and HS, respectively (p <0.0002). GPx decreased 10% in HC and HP groups, and 9% in HS (p<0.0001). ISO decreased 50% in HC and HP groups, and 40% in HS (p<0.0001). Finally, MDA decreased only 5% in HC and 13% in HP and increased 5% in the HS. Antioxidant effect was identified in CLA and phytosterols groups thought decreased CAT and ISO, principally. All groups supplemented the CLA and phytosterols showed a protective effect against atherosclerosis and oxidative damages.

Key words: High-fat, CLA, phytosterol, oxidative stress, oxidative stress enzyme, lipid peroxidation.