Objective: the aim of this study was to evaluate the influence of consumption of a ketogenic diet supplemented with triheptanoin, a medium-chain anaplerotic triacylglycerol, on the liver fatty acid profile of Wistar rats. Methods: three groups of male Wistar rats (n = 10) were submitted to an AIN-93 control diet, a triheptanoin-based ketogenic diet, or a soybean oil-based ketogenic diet for 60 days. Excised livers were subjected to lipid extraction and methylation to obtain fatty acids methyl esters, which were subjected to gas chromatography-mass spectrometry. Results and discussion: compared to the rats fed the control diet, those fed ketogenic diets showed a significant reduction in the concentrations of 9-hexadecenoic and 9-octadecenoic acids, whereas those fed triheptanoin showed increased levels of octadecanoic acid. Conclusion: changes in the liver fatty acid profiles of the rats fed a triheptanoin-based or a soybean oil-based ketogenic diet did not seem to be related to the dietary fat source, but rather to the characteristics of the ketogenic diets themselves.

Keywords
Fatty acid profile, Ketogenic diet, Medium-chain triacylglycerols, Trienantin.