

Study of Chlorogenic Acid Functional Properties: Effects on Hepatic Glucose Output, Blood Glucose Levels and Plasmatic Lipids

**B. K. BASSOLI¹, P. CASSOLLA¹, G. R. BORBA-MURAD¹, R. S. S. F. SILVA¹,
R. B. BAZOTTE², H. M. SOUZA¹**

¹Departments of Food and Drugs Technology and of Physiological Sciences,
State University of Londrina, 86051-990, Paraná, Brazil

²Department of Pharmacy and Pharmacology, State University of Maringá,
87020-900 Paraná, Brazil

SUMMARY

In vitro studies show that chlorogenic acid is an inhibitor of glucose-6-phosphatase, enzyme that catalyses the final reaction of glycogenolysis and gluconeogenesis. Accordingly, in this study, chlorogenic acid inhibited approximately 40% of glucose-6-phosphatase activity, but had no effect on hepatic production of glucose from gluconeogenesis. Since there were indications of lack of hepatic uptake of chlorogenic acid, it is possible that this compound hasn't reached intracellular compatible levels with the inhibition of the target-enzyme, what was reinforced by the fact that intravenous and oral administration of chlorogenic acid also didn't imply in reduction of blood glucose levels and plasmatic concentration of total cholesterol and triacylglycerols.