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# Ellagic components from *Caesalpinia paraguariensis* (Burk.) inhibited the α-glucosidase activity

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*Caesalpinia paraguariensis* is a native tree from Argentine, which has medicinal uses. People intakes the bark infusion to improve the diabetes and decrease the blood cholesterol level. One of the therapeutic approaches for the control of postprandial hyperglycemia is to retard glucose absorption by inhibiting carbohydrate-hydrolyzing enzymes such as α-glucosidase (AGH) in the digestive organs. In previous works it was showed the *in vivo* hypoglycemic activity, as well as the phytochemical characterization for this extract indicating the presence of ellagic derivatives. This study seeks to provide evidence about relationship between ellagic components from *C. paraguariensis* bark infusion (CPBI) and its hypoglycemic activity, aiming at the AGH target. For this, ellagic-rich fraction (ERF) was obtained from 100 mg lyophilized CPBI, applying solid/liquid-liquid conventional methods, using aqueous and organic phases (n-butanol). ERF components were characterized by analytical RP-HPLC. The AGH (E.C.3.2.1.20, Saccharomyces, SigmaCo.) enzyme inhibition assay was performed according to Matsu et al (1996). The enzyme inhibition was measured spectrophotometrically (400 nm) through monitoring of the p-nitrophenyl produced from hydrolysis of p-nitrophenyl-α-D-glucopyranoside (PNP-G) (0.7 mM) by AGH (16 mU), at 37°C, 30 min. Ellagic acid and 3-O-methylellagic acid were used as positive controls. ERF, 3-O-EA and EA reached 50% of AGH at ≤1.50 µg/ml concentrations (1.22 >> 0.09 > 0.07, respectively), and 90% at ≤4.00 µg/ml logarithmic trends were observed, and the kinetic assays suggested a competitive type inhibition; therefore AGH would be a likely target to explain the effect of CPBI in patients.

## Biography

Sgariglia Melina Araceli is a Pharmacist and has completed her PhD in Biochemical from Tucuman University (UNT) as CONICET Fellow. During her Post-doctoral studies in UNT, she has developed *in vivo* assays based on the OECD protocols, looking for potentials phyto-therapics. At present, she is a member of Career Research Scientist from CONICET, and is conducting a research period in IFT-CNR (Italy). She has published more than 20 papers in reputed journals and book chapters for international editorials, and numerous publications at congresses.

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