ANTIPROLIFERATIVE AND ANTIOXIDANT (IN VITRO AND CELLULAR) ACTIVITIES OF EXOTIC BRAZILIAN FRUITS

Luciana G. Malta, Rui H. Liu, Glaucia M. Pastore. School of Food Engineering, University of Campinas - UNICAMP, Monteiro Lobato Street, 80, 13083-862 Campinas, São Paulo, Brazil. Department of Food Science, Cornell University, Stocking Hall, Ithaca, New York, United States.

The major components of fruit that act as antioxidants are phytochemicals such as phenolic compounds, flavonoids, and anthocyanins. Additionally, the phenolic compounds have been underlined because of their antioxidative activities, anticarcinogenic and antimutagenic effects; they inhibit cancer cell proliferation in vitro. This study analyzed fruits from Cerrado biome, Gabiroba (*Compomanesia cambessedeana* Berg), Murici (*Byrsonima verbascifolia* Rich) and Guapeva (*Pouteria cf. guardneriana* Radlk). The aim of this study were to determine the in vitro antioxidant capacity using Oxygen Radical Scavenging Capacity (ORAC). Cellular antioxidant activity (CAA) using human hepatocellular carcinoma HepG2 cells and the Antiproliferative activity on human liver cancer cell growth in vitro using the MTS assay. Results related to the antioxidant activity showed that Gabiroba presented the highest activity 8027.52 ± 378.63 µmol Trolox Equivalents/ 100 g fruit, Murici (3352.36 ± 952.06) and Guapeva pulp (3969.33 ± 331.63) were not different statistically (p < 0.05). The results for Antiproliferative activity were expressed as the median effective dose. All fruits presented potent inhibitory activity in a dose-dependent manner, and the EC₅₀ values were 8.35 ± 2.74, 12.57 ± 0.68 and 61.08 ± 4.16 mg/mL, for Gabiroba, Guapeva pulp and Murici respectively. The CAA results were not significantly different from each other (p < 0.05). The CAA value for Murici was 41.36 ± 17.89, Gabiroba 33.90 ± 18.87 and for Guapeva pulp 23.38 ± 4.26 µmolar quercetin/ 100 g fruit. Our work has clearly shown that the phytochemicals in Brazilian fruits presented potent in vitro and cellular antioxidant and antiproliferative activities.