Effect of Jabuticaba (*Plinia cauliflora*) and Camu-Camu (*Myrciaria dubia*) Extracts on the Myocardium of Mice Fed a High-Fat and High-Fructose Diet

Cardiovascular diseases (CVD) are the leading cause of mortality worldwide and are strongly associated with obesity, metabolic syndrome, and the consumption of high-fat, high-fructose diets. These conditions induce oxidative stress, mitochondrial dysfunction, and pathological myocardial remodeling. In this context, bioactive compounds present in Brazilian berries, such as jabuticaba (*Plinia cauliflora*) and camu-camu (*Myrciaria dubia*), have aroused scientific interest due to their antioxidant and cardioprotective potential. Thus, the objective of this study is to evaluate the effect of jabuticaba and camu-camu extracts on the myocardium of C57BL/6 mice fed a high-fat, high-fructose (HFHF) diet. The animals (n=54) will be divided into six groups (n=9/group). After 6 weeks of metabolic induction with an HFHF diet, the animals will receive for another 6 weeks: (G1) standard control (AIN-93M); (G2) HFHF; (G3) HFHF + freeze-dried whole fruit; (G4) HFHF + freeze-dried peel; (G5) HFHF + microencapsulated extract; (G6) HFHF + CC. The following will be evaluated: morphometric measurements, food consumption, cardiac stereology (points on cardiomyocytes, interstitium and blood vessels, points on collagen fibers and mast cells per field), myocardial histological alterations (cardiomyocyte hypertrophy, collagen deposition, inflammatory infiltrate, interstitial edema, vascular congestion, reduction in capillary and cellular density) (H&E, Toluidine Blue, Sirius Red), oxidative stress (SOD, CAT, GST, MDA, NO, carbonylated proteins), total antioxidant capacity, ATPase activities (Na^+/K^+, Ca^{2+}, Mg^{2+}), mineral microanalysis (Ca, Na, K, Mg, Fe, Cu, Zn, Mn). The data will be submitted to statistical analysis (ANOVA or Kruskal-Wallis, with Dunn's post-hoc for multiple comparisons, $\alpha=0.05$). It is expected that the treated groups will exhibit lower oxidative stress, preservation of antioxidant enzymatic activity, reduction of fibrosis and hypertrophy, as well as improved Na^+/K^+-ATPase activity. Thus, the study seeks to provide experimental evidence on the cardioprotective potential of Brazilian *berries*, contributing to the appreciation of national functional foods and the development of nutraceutical strategies in the prevention of CVD.

Keywords: Cardiovascular diseases; *Plinia cauliflora*; *Myrciaria dubia*; berries; oxidative stress; polyphenols.