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# Radical scavenger activities of jabuticaba fruit extract (*Myrciaria cauliflora*) and its biological effects in hypertensive rats

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**Statement of the Problem:** Jabuticaba is an exotic fruit native to Brazil that has been arousing medicinal interest. Despite the important biological effects, its actions on the cardiovascular system remain untested. Thus, hydro-alcoholic extract of jabuticaba (HEJ) could improve the cardiovascular damages caused by hypertension.

**Methodology & Theoretical Orientation:** Hypertension was induced in rats by oral administration with L-NAME (60 mg/Kg/day in drinking water) for six weeks. HEJ was administered orally (100 or 300 mg/Kg/day by gavage) starting at the second week along with oral treatment with L-NAME. The blood pressure and heart rate were recorded weekly by tail-cuff plethysmography. After six weeks, the rats were sacrificed and the heart and left kidney were weighted. Aortas were isolated and set up to isometric recordings in an organ bath to verify the capacity of contraction and relaxation. The capacity of HEJ induce nitric oxide production in endothelial cells was analyzed by flow cytometry. Moreover, the phytochemistry composition and antioxidant potential of HEJ were analyzed by HPLC, mass spectrometry and differential pulse voltammetry.

**Findings:** Our phytochemistry and antioxidant results have shown the presence of phenolic compounds and high antioxidant capacity to HEJ. The arterial hypertension (225.8±11.2 mmHg) was reduced after HEJ 100 e 300 mg/kg/day treatment (163.4±8.7 e 172.1±9.3 mmHg, respectively). The heart and kidney weight from hypertensive rats were reduced. The vascular relaxation to acetylcholine and sodium nitroprusside and the contraction induced by phenylephrine were impaired in hypertensive group. The treatment with either 100 or 300 mg/Kg HEJ significantly improved the vascular response for these agents. HEJ was able to induce NO release from endothelial cells.

**Conclusion & Significance:** HEJ presents high antioxidant potential. The treatment with HEJ attenuated hypertension possibly improving the NO biodisponibility. The relaxation endothelium-dependent and independent was impaired by hypertension and improved after treatment with HEJ.

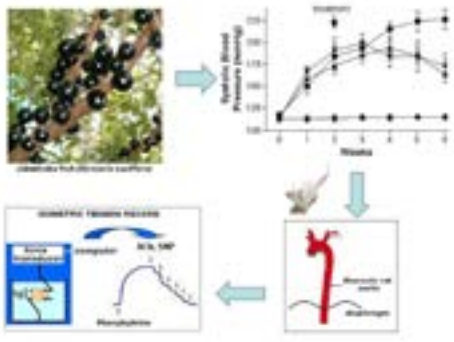

**Figure 1:** Jabuticaba fruit (*M. cauliflora*) presents high antioxidant potential, induces hypotensive effects and improve endothelium-dependent and independent relaxation possibly increasing the NO biodisponibility.

## Biography

Matheus L Rocha completed his Graduation in Pharmaceutical Sciences at Universidade Metodista de Piracicaba/SP (2001); Master's degree in Physiology at Universidade Federal de Sao Carlos (2004) and; PhD in Pharmacology at Universidade de Sao Paulo (2007). He holds a Post-doctoral degree in Pharmacology at Medical School of Sao Paulo University. He has experience in Pharmacy and Medical Sciences, focusing on cardiovascular, pharmacology and physiology, acting on the following subjects: $Ca^{2+}$ availability, isolated arterial beds (contraction and relaxation), myocardium contraction and medicinal natural products.

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