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Biological effects of the Amazonian fruit Camu-Camu: literature review and *in vitro* analyzes of pro-healing effects

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ABSTRACT (upto 300 words)

Introduction: Camu-camu (*Myrciaria dubia*) is a fruit of the camucamuzeiro, a plant native to the Amazon region. Still little studied and explored, however, botanical and chemical research has shown that this fruit has very high levels of vitamin C. Studies with cell culture models, animals and humans have made it possible to discover several important biological properties. It should still be taken into account that Brazil is a country that is aging at an accelerated pace, and that with the aging process, skin weakening is physiological, favoring the appearance of lesions and the difficulty of healing. Objective: To review the biological effects of Camu-Camu and perform *in vitro* analyzes of the possible pro-healing effect of this fruit. Methodology: Pubmed and Scielo platforms were used as a database for the research, whose keywords were “Camu-camu or *Myrciaria dubia*”, inclusion and exclusion criteria were used for the selection of articles. For *in vitro* analyses, fibroblast cell line (HFF-1) was used, obtained commercially, cells were cultured under sterile and standardized conditions. Scratch Assay (scratch test) and Reactive Oxygen Species (ROS) levels were performed. Results: Eighteen original articles were included in this review, which reported different biological activities of Camu-camu as nephroprotective, hepatoprotective, antioxidant,

anti-inflammatory, lipid-lowering and hypoglycemic, among others. In *in vitro* assays, Camu-camu showed a pro-cellular proliferation/healing effect as well as modulation of ROS levels. Conclusion: Despite the inherent methodological limitations, our results show a series of positive effects of Camu-camu, based on previous reports. This is the first study whose pro-healing action of Camu-camu is tested. Our results, although promising, need to be confirmed by further studies.

BIOGRAPHY (upto 200 words)

Raquel de Souza Praia is a nurse, Master in Gerontology, collaborating researcher at the Fundação Universidade Aberta da Terceira Idade - Manaus- AM, Brazil. She works as a health officer-nurse, being 1 Lieutenant in the Military Fire Brigade of Amazonas (CBMAM). She works as a researcher in the field of gerontology, seeking to understand how the Amazonian diet can make aging healthier.

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