

Natural Radionuclides, Stable Elements Concentration and Study of Bioactive Components of *Peperomia pellucida*

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In recent decades, there has been a great advancement in research in developing drugs from plants. Nevertheless, little information exists in literature about the activity concentration of ²³⁸U and ²³²Th decay products, even as stable elements concentration in plants used for this purpose. *Peperomia pellucida*, whose popular name in Brazil is little heart, is a plant known by its medicinal properties like healing property, analgesic activity, antibacterial activity and antifungal activity against food fungi. The objective of these determinations is to understand the possible relationship existing between elementary concentrations and pharmacological action. Elemental concentration for the elements As, Ba, Br, Ce, Cl, Co, Cr, Cs, Eu, Fe, Hf, K, La, Lu, Mg, Na, Nd, Rb, Sb, Sc, Se, Sm, Ta, Tb, Th, U, V, Yb and Zn were determined by Instrumental Neutron Activation Analysis in the aerial parts, leaves, and roots of *Peperomia pellucida*, in the extracts and infusion and in the surrounding soil. The samples were irradiated at the Nuclear Reactor IEA-R1, IPEN-SP, together with the reference materials Soil-7 and Buffalo River Sediment and the method validation was performed with the reference material Lichen (IAEA-336). The concentration of Cd, Cu, Ni, Pb and Hg was determined by Graphite Furnace Atomic Absorption Spectrometry and the activities of ²²⁶Ra, ²²⁸Ra and ²¹⁰Pb was carried out by Total Alpha and Beta Counting with radiochemical separation. The essential oil, ethanolic and hexane extracts of *Peperomia pellucida* were tested for antifungal activity against *Aspergillus flavus* in vitro on Petri plates. The antifungal activity was based on the inhibition zone and minimal inhibition concentration values against the pathogen on Petri plates assays. Also essential oil chemical composition was determined by CG-MS.