

COMPARISON BETWEEN FLAVONOID AND METAL-FLAVONOID COMPLEXES ON BINDING WITH SERUM ALBUMIN

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Flavonoids are heterogeneous group of plant polyphenolic compounds that exhibits a large spectrum of antioxidant properties, protecting cells against damaging effects of reactive oxygen species. The formation of complexes of metal ions with flavonoids are viewed to enhance the antioxidant properties of this naturally occurring product. In this work we shall to investigate the binding properties of a flavonoid compound isolated from *Garcinia brasiliensis* (M7) with albumin (BSA), as compared as Fe³⁺-M7 metallic complexed. The Fe³⁺-M7 complex was obtained from a mixture containing 10mg of M7 sample and ethyl acetate, following treatment with 10mg FeCl₃ and 3mL hexane. The final Fe³⁺-M7 complex was accomplished after precipitation, solvent evaporation and washing. The stoichiometry of Fe³⁺-M7 was determined with digestion of 2mg with 15 mL HNO₃ (65%) and 1mL de H₂O₂ (30V) at 120°C, with further alkaline neutralization. Binding of BSA with complexed M7 was attained by UV and visible difference spectra in 0.1M phosphate buffer pH 7.0. The complex presented a molar ratio of 3:1 Fe³⁺-M7: Fe³⁺. A red-shift and non-asymptotic trend was found with both flavonoid as its Fe³⁺complex-BSA, as viewed in UV-range, although Fe³⁺-M7 showed a hyperbolic character at low ligand concentration with the protein, and decreasing of absorbance values at high ligand concentration. These results suggest a more stable complex for the the Fe³⁺-M7 to albumin as compared as the natural product.

Financial support: FAPEMIG, Unifa-MG

Keywords: metal-flavonoid, ligand binding, albumin, antioxidant.