

Ethyl Acetate and *n*-Butanol Fractions from the Fruit Peel Araticum (*Annona crassiflora* Mart) as a Source of Bioactive Antioxidant Compounds with Alpha-Amylase, Alpha-Glucosidase and Glycation Inhibitory Activity

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INTRODUCTION: Blocking enzymes involved in carbohydrate digestion and the inhibition of non-enzymatic advanced glycation end-products (AGE products) by natural antioxidant compounds may represent a promising approach to the worldwide epidemic of type 2 diabetes mellitus. **OBJECTIVES:** To evaluate the antioxidant capacity and alpha-amylase, alpha-glucosidase and glycation inhibitory activities of organic fractions from ethanolic crude extract of araticum, a fruit of the Cerrado Biome. **MATERIALS AND METHODS:** We performed duplicate antioxidant activity assays (DPPH and ORAC methods), alpha-amylase and alpha-glucosidase inhibition assays (colorimetric kinetic methods) and anti-glycation assay (fluorometric determination), using different concentrations of both fractions (ethyl acetate and *n*-butanol) prepared from the crude ethanolic extract of *A. crassiflora* peel. We applied a LC-ESI-MS/MS approach to elucidate the bioactive compounds from *A. crassiflora* peel. **RESULTS AND DISCUSSION:** For the ethyl acetate and *n*-butanol fractions we found, respectively, the following results: Total antioxidant capacity (a) DPPH IC₅₀ values of 0.8 and 1.5 µg.mL⁻¹, (b) ORAC values of 6769 and 7519 µmol trolox eq/g of sample; enzymes inhibitory activity (a) amylase over 90% inhibition using 20 µg.mL⁻¹, (b) glucosidase IC₅₀ values of 554 and 787 µg.mL⁻¹. The glycation was inhibited over 80% with 100 µg.mL⁻¹. The LC-ESI-MS/MS analysis revealed the presence of bioactive components known as potent antioxidants in the ethyl acetate and *n*-butanol fractions, such as quinic acid, catechins, procyanidins, caffeoyl-hexosides, quercetin-glucosides and kaempferols. **CONCLUSIONS:** The fruit peel of *A. crassiflora*, a specie of the Brazilian biodiversity, showed a promising source of bioactive compounds with high antioxidant capacity and properties to block carbohydrate digestive enzymes and formation of AGEs products.

Keywords: bioactive flavonoids, fruit, AGEs, Annonaceae, diabetes, amylase, glucosidase

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