Evaluation of Gherkin's (Cucumis anguria L.) Bioactive Potential Against Non-communicable Chronic Diseases

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One of the main problems for human beings' health is Chronic Non-communicable Diseases (NCDs), which causes progressive and multifactorial health deterioration, being responsible for about 70% of all deaths worldwide. Therefore, the present research aimed to study the gherkin (Cucumis anguria L.), describing its chemical and nutritional properties as well as analyzing possible potential pharmacological mechanisms through the identification and quantification of metabolites and micronutrients. First, fruit samples were extracted using a SHAKER apparatus, with Ethanol PA as the solvent. Then, it was possible to identify and quantify the presence of phenolic compounds – using a UV-VIS Spectrophotometer – that indicated the measure of 2,842mg and 1,919mg of phenolics compounds per gram of fruit with and without peel, respectively. After that, the peel and pulp's fruit samples were analyzed through inductively coupled plasma mass spectrometry (ICP-MS) to evaluate and quantify the presence of micronutrients in the samples. As a result, Ca, Cr, Mg, K, and Na were identified at the peel of the fruit in greater concentrations in comparison to its pulp. However, in the pulp, it was possible to observe, in higher concentrations, the presence of Zn and Mn compared to the peel. Moreover, twelve other micronutrients were identified in lower concentrations. Hence, it is possible to point out gherkin as a promising fruit that can be important to the mechanisms of blood pressure homeostasis, glycemic control, and prevention of other chronic diseases. This way, the present work has a great scientific impact by emphasizing the importance of increasing gherkin intake in the human diet and highlighting its importance, in a complementary way, to the treatment and prevention of NCDs.