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Original Research Article

Drug Properties, Chemical Reactivity and Docking Binding Energy of Cinnamon with Estrogen, Testosterone, Progesterone as Potential Drug: Theoretical Investigation

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ABSTRACT

Cinnamon is applied for diabetes and insulin resistance as a plant medicine. In this study, DFT calculations to consider the pregnancy function role of cinnamon compounds was done by B3LYP/6-311G. Thermodynamics properties, molecular electronics, docking of cinnamon compounds with estrogen, testosterone and progesterone and drug parameters calculated the results obtained among sexual hormones; progesterone acts with the chemical component of Cinnamon.

Keywords: DFT, Cinnamon, A Sexual Hormone, Plant Medicine

Introduction

For centuries, natural medicines derived from plants [1], fungi, bacteria, protozoans, insects and animals [2] have been known to be useful in the treatment of various diseases. Among natural products [3], active herbal ingredients [4,5] are particularly valued as a precious resource for the development of novel therapeutic agents due to their broad structural diversity as well as the wide range of pharmacological activities and comparatively low side effects. Noteworthy, already in 2000, it was estimated that approximately one-third of the top-selling drugs in the world had been derived from medicinal herbs. The finding obtained the evidence-backed by hard research on why Cinnamon [6–10] may be the solution for blood sugar control, weight loss, alertness, creating natural disinfectants