

## A Comparative Study of Anti-Diabetic Activity of *Cinnamomum zeylanicum* and *Artemisia absinthium* and Combination with Difference Ratio

**Authors :** Ikram Mohamed Eltayeb, Ustina Saeed Barsoumbolice

**Abstract :** *Cinnamomum zeylanicum* belong to the family Lauraceae and *Artemisia absinthium* belong to the family Asteraceae. Both were traditionally used as antiemetic, anti-inflammatory and antidiabetic. In Sudan, the mixtures of the two plants were traditionally used for the treatment of diabetes. Diabetes mellitus is a group of metabolic diseases characterized by hyperglycemia. It is mainly classified into two major groups, type-1 and type-2. Type-2 is a combination of resistance to insulin action and an inadequate compensatory insulin secretory response. The treatment of type-2 diabetes mellitus (DM) with synthetic drugs have many side effects so many researches were conducted to overcome or reduce this side effects by using alternative medicine. The objective of this study is to investigate and compare the anti-diabetic activity of *C. zeylanicum* and *A. absinthium* and their combination with difference ratio. *C. zeylanicum* and *A. absinthium* were extracted by 96% ethanol using Soxhlet apparatus. Thirty-two rats were divided into eight groups; each group contains four rats. 1st group was administered with distilled water at dose of 10ml/kg, 2nd group had received glucose only at dose of 2g/kg intraperitoneal, the standard group (3rd group) had received Glibenclamide orally at dose of 0.45mg/kg, 4th group received 100 mg *C. zeylanicum* + 300 mg *A. absinthium* with a ratio of (25:75), 5th group received 300 mg *C. zeylanicum* + 100 mg *A. absinthium* with a ratio of (75:25), 6th group received 200 mg *C. zeylanicum* + 200 mg *A. absinthium* with a ratio of (50:50), 7th group received 400 mg of *A. absinthium*, 8th group received 400 mg of *C. zeylanicum*. Then the blood samples were taken Retro-orbitally at 0, 1, 2 and 4 hours and the glucose level was measured. Each plant alone and their combination with different ratios shows antidiabetic effect. The significant activity was shown by *A. absinthium* extract (400 mg/kg), combination of ratio of (75:25) *A. absinthium*: *C. zeylanicum*(400mg/kg) and then *C. zeylanicum*(400mg/kg) with p-value 0.001, 0.022, 0.030 respectively, the activity was found to be increased with time. The other combinations showed less activity with p-value > 0.05. The result concludes that the good antidiabetic activity was performed by *A. absinthium* alone and its activity decreased by increase combination ratio with *C. zeylanicum*. Which maybe explains by the antagonistic effect between the compounds of *C. zeylanicum* and *A. absinthium*.

**Keywords :** antidiabetic, *Artemisia absinthium* , *cinnamomum zeylanicum*, combination

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