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Evaluating the Effects of *Rosmarinus officinalis* and *Moringa Oleifera* Extracts on Some oral Pathogens in type 2 Diabeties in Al-Muthanna province

A Thesis submitted to the conncil of collage of science / Al-Muthana university as partial Fulfillment of the Requirements for Degree of Master of Science in Biology

By

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Abstract

The purpose of the current study is to investigate or assess the biological activity of plant extracts from *Rosmarinus officinalis* and *Moringa oleifera* in the Samawa governorate. The aerial parts (leaves) of both plants were extracted using a Soxhlet extractor, employing two different polarity solvents (methanol and hexane), and the active compounds were identified using Gas Chromatography Mass Spectrometry (GC-MS).

The GC results for the Moringa leaves extract with methanol showed 9 active compounds, while the moringa extract with hexane showed 24 active compounds. Then the GC-MC results for the rosemary leves plant extract with methanol showed 23 active compounds, while the results showed 15 active compounds for the rosemary leaves plant extract with hexane.

Three species of pathogenic bacteria and fungi are tested for the antimicrobial activities of the crude extracts. Based on the disc-diffusion assay, four concentrations of each inhibitory concentration formed (0, 25, 50, and 75 mg/ml) and three types of antibiotics are used as positive controls. The two gram positive bacteria tested are *Streptococcus mutants* and *Enterococcus feacalis*, and the one fungus tested is *Candida albicans*. Streptomycin, Amikacin and Nitrofurantoin for bacteria while tow antibiotics Amophotericin-B and Nystatin for fungi *Candida albicans.*

In general, extracts from *Moringa oleifera* exhibit strong inhibition against all bacteria and fungi, particularly hexane extract and methanol. The average diameters of the inhibition zone for extracts of methanol and hexanol were (13.0833 c, 21. 8500 a, 18.3417 b) mm and (20.5667 b21.2617 a, 18.5833c) mm against *mutant Streptococcus*, *Enterococcus feacalis*, and one type of fungus, *Candida albicans*.

The best extract was the methanolic one, even though *Rosmarinus officinalis* extracts shown considerable suppression against all bacterial species and the fungal *Candida albicans*. The methanol and hexanol extracts (8.3667 a, 4.4583 b, 0000 c) mm and (8.3500 a, 5.5667 b, 3.7750 c) mm mean diameters of the inhibitory zone were observed against *Streptococcus mutants, Enterococcus feacalis*, and one kind of fungus, *Candida albicans*.