

Scientific Connection of Saudi Assiry Wild Acacia Disturbs Pathogens Biofilms Constructions Cause Utis

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Abstract

Saudi Assiry Wild Acacia have been proven as significant anti biofilm formation, antibacterial and antifungal agent, use of plants and herbs extract in the therapy of human disease is very ancient traditions and scientists. The objectives were a scientific experiment to prove the extent of the scientific relevance of the ability of Saudi Assiry wild Acacia as wild herbal treatment to disrupt the formation of biofilms of pathogens cause urinary tract infections (UTIs). Methodology was included extract underneath trial, pathogens underneath trial, and trial underneath investigation. Table (1) clarify the biofilm estimation after exposed to Saudi Assiry Wild Acacia. Through the results, it was found that the effect of the Saudi Assiry Wild Acacia water extract was variable, and the pathogens were divided into levels according to the effect on obstructing the formation of biofilms and stopping the growth of pathogens that cause UTIs. Saudi Assiry Wild Acacia biofilm estimation effects by levels as follow obtained the first level (A) was disrupting pathogens *Streptococcus agalactiae*, the reading was (0.047). The second level (B) was reading from (0.151-0.154) and including pathogens *Staphylococcus aureus*, and *Enterococcus faecalis*. The third level (C) was in range (0.253-0.257), and were *Escherichia coli*, and *Proteus mirabilis*. The fourth level (D) had ranged (0.358-0.363), and had *Pseudomonas aeruginosa*, *Acetobacter baumannii*, and *Klebsiella pneumonia*. The level five (E) was in reading (0.454-0.455), and was included *Candida albicans*, and *Candida sp*. The sixth level (F) was in (0.568) was for *Cryptococcus neoformans* only. Finally the seventh level (G) was in (0.658) was for *Aspergillus sp.*, only. It was decided that the scientific connection of Saudi Assiry Wild Acacia Disturbs pathogens biofilms constructions cause UTIs, through the practical experience. It was suggested that the Saudi Assiry Wild Acacia be directed to the pharmaceutical department for scientific treatment of personal use.

Keywords: saudi assiry wild acacia; staphylococcus aureus; enterococcus faecalis; streptococcus agalactiae; escherichia coli; proteus mirabilis; pseudomonas aeruginosa; acetobacter baumannii; klebsiella pneumonia; candida albicans; candida sp; cryptococcus neoformans; aspergillus sp

Background

Saudi Assiry Wild Acacia have been proven as significant anti biofilm formation, antibacterial and antifungal agent. The use of plants and herbs extract in the therapy of human disease is very ancient traditions and scientists [1]. Outstanding to their flexibility and convenience, Saudi Assiry Wild Acacia has an extended history. It has been said ancient employed Acacia treat a variety of illnesses, it is quite prevalent. The phytoconstituents robust free fundamental scavenging, has antibiofilm formation and antimicrobial are responsible for its chemical contents [2]. Saudi Assiry Wild Acacia is a rich source of an extensive variety of the main chemical compounds, they are including terpenoids have enormous possible against various pathogens through diverse mechanisms as membrane disruption, anti-quorum sensing, inhibition of protein synthesis and ATP. Phenolic compounds have antimicrobial activity dissociate at the cell membrane level of and inhibit the growth, and have antibiofilm action. Tannins have

antimicrobial and antibiofilm activity, moderate the antibiofilm action and in defining the association between chemical causes and antibiofilm action. Alkaloids have inhibited growth action, cyanogenic glycosides have anti proliferation action, and flavonoids have inhibition of microbial cells enzymes action [3]. Saudi Assiry Wild Acacia is most usually stated pharmacologic action of Acacia its antimicrobial properties. Acacia were used as antimicrobial managers widely in folklore medicine, as antibacterial and antifungal. The least repressive attentiveness in runny culture and zone of reserve in hard culture were characteristically used to fast antimicrobial action. Before the expansion of present antibiotics, herbal medicines were cast-off to luxury microbial contagions [2]. The antibacterial activity was appeared of Acacia aqueous extracts against *Enterococcus faecalis*, *Staphylococcus aureus*, *Streptococcus agalactiae*, *Escherichia coli*, *Klebsiella pneumoniae*, *Proteus mirabilis*, *Acinetobacter baumannii*, and

Pseudomonas aeruginosa using diskette dispersal technique [4]. An Acacia extract for antibacterial activities against *Escherichia coli*, *Staphylococcus aureus*, *Klebsiella pneumoniae*, *Proteus sp.*, and *Pseudomonas aeruginosa*, were presented the strongest consequences [5]. The antibacterial of Acacia extracts was evaluated against *Escherichia coli*, *Staphylococcus aureus*, *Klebsiella pneumoniae*, *Pseudomonas aeruginosa*, and *Enterococcus faecalis* were using disc diffusion method, were effective against the bacterial [5]. The most potent activity of Acacia was toward *Escherichia coli*, and *Staphylococcus aureus* [6]. Acacia has the antifungal activity against *Candida albicans*, and *Aspergillus sp.* The aqueous extract was screened against them to verify its antifungal activity. The ZOI was 15 mm against *Candida albicans* and 12 mm against *Aspergillus* [7]. The importance, was directed to the plant Saudi Assyry wild Acacia is found in Saudi Arabia and is used in the herbal treatment of patients with microbial urinary tract infections (UTIs). It will be a scientific test for the ability of the plant components to obstruct the formation of biofilms of the pathogens cause UTIs in order to prove the scientific relationship to the Saudi Assyry wild Acacia as herbal treatment of wormwood. The objectives were a scientific experiment to prove the extent of the scientific relevance of the ability of Saudi Assyry wild Acacia as wild herbal treatment to disrupt the formation of biofilms of pathogens cause UTIs. The methodology was done in a practical experiment.

Methodology:

Extract underneath trial:

- Saudi Assyry Wild Acacia was collected from its wild place, that was followed personal evidence from the residents of the place.
- The plant was splashed by purified water, was dehydrated in room for 3-6 days, and was grinded and were kept.
- The dried plant 30 gm were added on 300 ml of purify water, was boiled in water bath, and was clean.

Pathogens	Dilutions				Means	Levels
	1:1	1:3	1:5	1:7		
<i>Staphylococcus aureus</i>	0.110	0.133	0.168	0.193	0.151	B
<i>Enterococcus faecalis</i>	0.114	0.135	0.169	0.199	0.154	B
<i>Streptococcus agalactiae</i>	0.013	0.032	0.063	0.081	0.047	A
<i>Escherichia coli</i>	0.220	0.241	0.270	0.296	0.257	C
<i>Proteus mirabilis</i>	0.218	0.239	0.267	0.289	0.253	C
<i>Pseudomonas aeruginosa</i>	0.322	0.351	0.379	0.399	0.363	D
<i>Acetobacter baumannii</i>	0.319	0.348	0.371	0.392	0.358	D
<i>Klebsiella pneumonia</i>	0.323	0.354	0.376	0.397	0.363	D
<i>Candida albicans</i>	0.415	0.439	0.469	0.492	0.454	E
<i>Candida sp.</i>	0.417	0.440	0.471	0.493	0.455	E
<i>Cryptococcus neoformans</i>	0.529	0.558	0.586	0.599	0.568	F
<i>Aspergillus sp.</i>	0.618	0.644	0.672	0.698	0.658	G

Table 1: Biofilm estimation after exposed to Saudi Assyry Wild Acacia.

Table (1) clarify the biofilm estimation after exposed to Saudi Assyry Wild Acacia. Through the results, it was found that the effect of the Saudi Assyry Wild Acacia water extract was variable, and the pathogens were divided into levels according to the effect on obstructing the formation of biofilms and stopping the growth of pathogens that cause UTIs [1-7].

Saudi Assyry Wild Acacia biofilm estimation effects by levels as follow obtained the first level (A) was disrupting pathogens *Streptococcus agalactiae*, the reading was (0.047). The second level (B) was reading from (0.151-0.154) and including pathogens *Staphylococcus aureus*, and *Enterococcus faecalis*. The third level (C) was in range (0.253-0.257), and were *Escherichia coli*, and *Proteus mirabilis*. The fourth level (D) had ranged (0.358-0.363), and had *Pseudomonas aeruginosa*, *Acetobacter baumannii*, and *Klebsiella pneumonia*. The level five (E) was in reading (0.454-0.455), and was included *Candida albicans*, and *Candida sp.* The sixth level (F) was in (0.568) was for *Cryptococcus neoformans* only. Finally the seventh level (G) was in (0.658) was for *Aspergillus sp.*, [1-7].

Saudi Assyry Wild Acacia biofilm estimation effects by levels as follow obtained from the first level (A) to the third level (C), it was considered an

- An aqueous extract was diluted to (1:1, 1:3, 1:5, and 1:7); [8].

Pathogen's underneath trial:

- They were collected from "P. Lab.", they were isolated from UTIs, were included *Staphylococcus aureus*, *Enterococcus faecalis*, *Streptococcus agalactiae*, *Escherichia coli*, *Proteus mirabilis*, *Pseudomonas aeruginosa*, *Acetobacter baumannii*, *Klebsiella pneumonia*, *Candida albicans*, *Candida sp.*, *Cryptococcus neoformans*, and *Aspergillus sp.*
- They were produced on appropriate prepared media for a day at incubator. They were growth on a non-rigid media and were incubated for four hours to begin making the biofilms.
- They were cultured on the "Blood Agar"; (Oxoid, UK) at 37°C for 24 hours. They were sub cultured in the "Muller Hinton" broth (Oxoid, UK) [9].

Trial underneath investigation:

- Anti-biofilm construction: The pathogen suspension 0.2 mL were added, then an aqueous extract dilution 0.2 mL was added in Sugar Water (Oxoid, UK) were in Microtiter Platter (Falcon, USA). Then was incubated for eighteen and twenty-four hours at 37 °C.
- Biofilm estimation: The biofilm stayed in plate was fixed by sodium acetate for half an hour, and was stained by crystal violet for half an hour. Then was washed by neutral water and was kept for drying. The approximation was demonstrated by "Optical Densities App.". The outcomes were preserved by statistics method [10].

Results and discussion:

excellent affected pathogen. Level four (D) was very good. Levels five (E) and six (F) were good. Level seven (G) was approved and acceptable [1-7].

It was found from the results Saudi Assyry Wild Acacia biofilm estimation effects, that the active chemicals of in the water extract indicated the strength of antimicrobial. If the Saudi Assyry Wild Acacia was used as an ancient custom, then the relationship has been scientifically clarified through experimentation and the extent of the effect of an aqueous extract on the pathogens that cause UTIs, that was due to the antimicrobial action. That was starting with obstructing the formation of biofilms and then eliminating the microbes [1-7].

The Saudi Assyry Wild Acacia had been used for a long time as a treatment for UTIs, which indicated the strength of the water extract due to the antimicrobial of the active contents. Therefore, you must consult a pharmacist or specialist in medical herbalism in order to guide you on the method of use that suits the patient in order to maintain the health of individuals [1-7].

Conclusions:

It was decided that the scientific connection of Saudi Assiry Wild Acacia Disturbs pathogens biofilms constructions cause UTIs, through the practical experience that took place.

Recommendations:

It was suggested that the Saudi Assiry Wild Acacia be directed to the pharmaceutical department for scientific treatment of personal use.

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