



**UNIVERSITY OF TRIPOLI AL AHLIA DEPARTMENT OF  
PHARMACEUTICAL SCIENCES**

**PROJECT TITLE**

**ANTIBACTERIAL ACTIVITY AND SYNERGISTIC  
ANTIBACTERIAL POTENTIAL OF PSIDIUM GUAJAVA L  
AGAINST STAPHYLOCOCCUS AUREUS**

**PREPARED BY**

**BARAA FATHI BEN GHARSA**

**SUPERVISED BY: DR. MUFTAH SHUSHNI**

**2019**

**ANTIBACTERIAL ACTIVITY AND SYNERGISTIC  
ANTIBACTERIAL POTENTIAL OF *PSIDIUM GUAJAVA* L  
AGAINST STAPHYLOCOCCUS AUREUS**

**BY**

**BARAA FATHI BENGHARSA**

**A project submitted in fulfillment of the requirement for the Bachelor  
Degree of Pharmaceutical Sciences**

**Department of Pharmaceutical Sciences**

**University Tripoli of Al Alahlia**

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## ABSTRACT

**Background:** The increased prevalence of antibiotic resistance, as a result of extensive antibiotic use, may render the current antimicrobial agents insufficient to control, at least, some bacterial infections. **Methods:** The aerial part of plant of *Psidium guajava* L. was extracted by maceration with Ethanol (99.9% v/v) to exhaustion. the solvent was evaporated under reduced pressure. To evaluate antimicrobial activity, the Kirby Bauer disc diffusion method assay was used against Gram-positive bacteria (*Staphylococcus aureus*). **Results:** The dry extract alone did not show any inhibitory effect on the tested bacterial strain. Association of fresh extract and antibiotics and the plant extract showed synergistic antibacterial activity especially with Nitrofurantoin and Septrin-trim. **Conclusion:** Fresh and dry extract of leaf of *Psidium guajava* showed antimicrobial activity against clinical isolates of *S. aureus* ,which showed that this part can be a potential candidate to be used as a therapeutic agent. There for this plant need to further pharmacological studies. There for this plant need to further pharmacological studies.

**Keyword:** *Psidium guajava* L – Antibiotic – Antimicrobial – *Staphylococcus aureus*.

## APPROVAL PAGE

I certify that I have supervised and read this study and that in my opinion it conforms to acceptable standards of scholarly presentation and is fully adequate, in scope and quality, as a project for the degree of Bachelor of Pharmaceutical Sciences.

.....  
**Dr. Muftah Ali Shushni**  
Supervisor

I certify that I have read this study and that in my opinion it conforms to acceptable standards of scholarly presentation and is fully adequate, in scope and quality, as a project for the degree of Bachelor of Pharmaceutical Sciences.

.....  
**Dr. Abdulsalam Ibrahim  
Rfaida**  
Examiner

This project was submitted to the Department of Pharmaceutical Science and is accepted as partial fulfilment of the requirements for the degree of Bachelor of Pharmaceutical Sciences.

.....  
**Dr. Ahmed Elbadri Atia**  
Head, Department of  
Pharmaceutical Sciences

This Project was submitted to the department of Pharmaceutical Sciences and is acceptable as partial fulfillment of the requirements for the degree of Bachelor of Pharmaceutical Sciences.

.....  
**Dr. Shereen Elmehdi Njaim**  
Dean, University of Tripoli  
Alahlia

## DEDICATION

*I am very grateful to ALLAH ALMIGHTY for without His graces and blessings, this study would not have been possible.*

*I convey my sincere gratitude to my supervisor, Dr. Ahmed Atia, who went so far beyond the call of duty to mentor me during the course of this work.*

*Thank you for setting the bar high and encouraging me to reach it. I have learned so much from you. Your patience, motivation, enthusiasm and commitment to excellence is inspiring.*

*My parents and siblings, there are no words to express my gratitude and thanks. your love has been the major spiritual support in my life. without your support and encouragement, I would not be here today.*

*Special thanks are due to my elder brother Ossama, sleepless mornings and long drives wouldn't have been delightful without you.*

*Miss. Nissren Ndia, thank you for your diligence and assist.*

*As a final word, I would like to thank each and every individual who have been a source of support and encouragement and helped me to achieve my goal and complete my dissertation work successfully.*

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