Cairo University
Faculty of Vet Medicine
Department of Microbiology

In vitro studies on the antimicrobial effect of Abevac, formulated from bee venom

A thesis Presented by

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B.V.Sc. (2011), Kafer El-sheikh University

For the Master Degree in
Veterinary Medical Sciences (M.V.Sc)
(Bacteriology- Mycology- Immunology)

Under supervision of

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2017

Cairo University
Faculty of Veterinary Medicine
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Abstract

Bee venom has been used in treatment of many inflammatory diseases, some autoimmune diseases and bovine mastitis. There are some commercially available drugs prepared from bee venom that are used for medical purposes. Abevac is one of these bee venom drugs. The present study showed the effect of Abevac against some reference strains of pathogenic Gram-positive,Gram-negative bacteria and *C. albicans* fungus (*S. aureus, S. pyogene*s, *B. cereus, P. multocida, S.* Entritidis, *E. coli, M. synoviae, M. gallisepticum, M. bovis and C. albicans*) through measuring zone of inhibiton and determination of MIC and MBC of bee venom in comparison with 14 different members of antimicrobial agents including penicillin and 4 antifungal agents. The results proved that Abevac had powerful antimicrobial activity against both Gram-positive and Gram-negative bacteria and it exhibited significant antimicrobial activity against *S. aureus, S. pyogenes, B. cereus, S.* Entritidis, *E. coli* and *C. albicans* while showed no effect on *P. multocida, M. bovis* and *M. synoviae*. The present study proved that Abevac had antibacterial efficacy nearly the same of ciprofloxacin drug against the three Gram-positive bacteria.

Key words: Abevac - Bee venom- *S. aureus* - *E. coli* - *S.* Entritidis - *M. gallisepticum* - *C. albicans*.

ACKNOWLEDGMENT

Firstly and for most, my deepest thanks to Allah who gives us everything and showing us the right path.

I would like to express my deep gratitude to my supervisor Prof. Dr.Rafik Soliman, Professor of Microbiology, Faculty of Vet. Med., Cairo University for his supervising and planning of the work.

I would like to express my great thanks to Dr.Sherif Abdel Moneam, Assis. Prof. of Microbiology, Faculty of Vet. Med., Cairo University, for his great help, cooperation and support during the course of this work.

I would like to express my great thanks to Dr. George Habib, Chief researcher at Vacsera holding company for his continuous support.

Many thanks to all staff members of the Microbiology Dept. for their help, support and encouragement during the work.

Dedication

To my husband

And

To my family

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List of Abbreviations

A. baumannii	*Acinetobacter baumannii*
B- haemolytic	Beta haemolytic
B. cereus	*Bacillus cereus*
B. pseudomallei	*Burkhloderia pseudomallei*
B. subtilis	*Bacillus subtilis*
B. thuringiensis	*Bacillus thuringiensis*
C. albicans	*Candida albicans*
C. Freundii	*Citrobacter freundii*
CLSI	Clinical and laboratory standards institute
CNS	Coagulase negative *staphylococci*
C. pseudotuberculosis	*Corynebacterium pseudotuberculosis*
C. trachomatis	*Chlamydia trachomatis*
C. xerosis	*Corynebacterium xerosis*
E. aerogenes	*Enterobacter aerogenes*
E. cloacae	*Enterobacter cloacae*
E. carotovora	*Erwinia carotovora*
E. coli	*Escherichia coli*
E. faecalis	*Enterococcus faecalis*
E. tarda	*Edwardsiella tarda*
EMB	Eosin methylene blue medium
F. fulva	*Fulvia fulva*
H. aegyptius	*Haemophilus influenzae biogroup aegypticus*
H. influenzae	*Haemophilus influenzae*
K. pneumoniae	*Klebsiella pneumoniae*

L. casei	*Lactobacillus casei*
L. monocytogenes	*Listeria monocytogenes*
M. avium	*Mycobacterium avium*
MBC	Minimum bactericidal concentration
M. bovis	*Mycoplasma bovis*
M. fortuitum	*Mycobacterium fortuitum*
M. gallisepticum	*Mycoplasma gallisepticum*
M. Hominis	*Mycobacterium hominis*
MIC	Minimum inhibitory concentration
MRSA	Methicillin resistant *Staphylococcus aureus*
M. smegmatis	*Mycobacterium smegmatis*
MSSA	Methicillin susceptible *Staphylococcus aureus*
M. synoviae	*Mycoplasma synoviae*
M. tuberculosis	*Mycobacterium tuberculosis*
MYP	Mannitol Egg Yolk Polymyxin medium
NCCLS	National committee for clinical laboratory standards
N. cattarrhalis	*Neisseria cattarrhalis*
PAEs	post antibiotic effects
P. aeruginosa	*Pseudomonas aeruginosa*
P. mirabilis	*Proteus mirabilis*
P. multocida	*Pasteurella multocida*
P. vulgaris	*Proteus vulgaris*
PPLO	Pleuro-pneumonia like organism
S. aureus	*Staphylococcus aureus*
S. cerevisia	*Saccharomyces cerevisiae*
S. chromogenes	*Staphylococcus chromogenes*
SDA	Saboraud dextrose agar

***S.* Derby**	*Salmonella enterica* subsp. *enterica* serotype Derby
S. epidermidis	*Staphylococcus epidermidis*
***S.* Enteritidis**	*Salmonella enteric*a subsp. *enterica* serotype Enteritidis
S. hyicus	*Staphylococcus hyicus*
S. intermedius	*Streptococcus intermedius*
S. iniae	*Streptococcus iniae*
S. oralis	*Streptococcus oralis*
***S.* Typhimurium**	*Salmonella enterica* subsp. *enterica* serotype Typhimurium
S. uberis	*Streptococcus uberis*
S. marcescens	*Serratia marcescens*
S. mitis	*Streptococcus mitis*
S. mutans	*Streptococcus mutans*
S. pneumoniae	*Streptococcus pneumoniae*
***S. pyogene*s**	*Streptococcus pyogenes*
S. salivarius	*Streptococcus salivarius*
S. sanguinis	*Streptococcus sanguinis*
T. beigelii	*Trichosporon beigelii*
T. menatgrophytes	*Trichophyton menatgrophytes*
T. rubrum	*Trichophyton rubrum*
V. ichthyoenteri	*Vibrio ichthyoenteri*
VRE	Vancomycin- resistant *enterococci*
XLD	Xylose lysine desoxycholate medium
X. subtilis	*Xanthmonas subtilis*