شبكة المعلومات الجامعية

التوثيق الإلكتروني والميكروفيلم

بسم الله الرحمن الرحيم

HANAA ALY

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جامعة عين شمس

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قسم

نقسم بالله العظيم أن المادة التي تم توثيقها وتسجيلها
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تحفظ هذه الأقراص المدمجة بعيدا عن الغبار

HANAA ALY

Ain Shams University
Faculty of Science
Microbiology
Department

Biocontrol of some Pathogenic Microorganisms Using Milk Whey, Moringa plant and Nanoparticles.

A Thesis

Submitted for the Degree of Ph.D. of Science in Microbiology

By

Alshaymaa Abd el-Monaem Mohammed

B.Sc. (Microbiology), Botany Department, Faculty of Science, Zagazig University (2012)

M.Sc. In Microbiology, Microbiology Department, Faculty of Science, Zagazig University (2015)

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Under Supervision of

Prof. Dr.
Saadia Mohammed Hassanin Easa
Prof. of Microbiology,
Microbiology Department,
Faculty of Science
Ain Shams University

Prof. Dr.
Mohammed Farok Ibrahim
Prof. of Microbiology,
Botany & Microbiology Department,
Faculty of Science
Zagazig University

Prof. Dr. Seham Abdel-Shafi Awad-Alla
Professor of Microbiology,
Botany & Microbiology Department,
Faculty of Science
Zagazig University

2021

بسم الله الرحمن الرحيم

((وَمَا تَوْفِيقِي إِلاَّ بِاللّهِ
عَلَيْهِ تَوَكَّلْتُ وَإِلَيْهِ أُنِيبُ))

صدق الله العظيم

سورةهود الآية (٨٨)

Declaration

This thesis has not previously submitted for any other Universities

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Al-Shaymaa Abdel-Monaem

Abstract

In this study the antibacterial activities of aqueous ethanolic extract of *Moringa olifera* collected from El- Shabanat village at Zagazig (Egypt) was examined. The organic solvent extract was tested against some pathogenic bacteria collected from different patients in Zagazig Hospital University (ZHU).The most sensitive bacteria for *Moringa olifera* after identification by PCR and 16SrRNA was *Staphylocoous pasteuri*.

The highest degree of antibacterial activity of whey and their fractions was shown by F2 fraction against *Staphylocoous pasteuri*. Transmission Electron Microscopy (TEM) of *Staphylocoous pasteuri* treated with aqueous ethanolic extracts of leaves and seeds of Moringa and whey fractions were manifested by signs of cellular deformation, partial and complete lysis of cell components. There is a great effect of *Moringa olifera* than different types of antibiotics against *Staphylococcus pasteuri* as the indicator organism. Phenolic, flavenoids compounds and antioxidant activity were quantitatively detected in leaves and seeds; the higher ratio of phenolic and flavenoid was detected in leaves. (584.7mg/g and 95mg/g respectively) and the higher ratio of antioxidant activity was detected in leaves (101.7mg/g) after 120 min..The ethanolic extract of leaves and seeds and also whey as raw material and their fractions were tested for their ability to formation of nanoparticles and their ability to inhibit isolated identified bacteria. Our results showed that the ability of nanoparticles of Moringa plant and whey to inhibit pathogenic bacteria decreases compared to raw plant and raw whey and their fractions.

List of Abbreviation

AgNPs	Silver Nano particles
AMPs	Antimicrobial peptides
APS	Ammonium per sulphate
AuNPs	Gold nano particles
BV	Biological value
BW	Buffalo whey
BWP	Buffalo whey protein
BWH	Buffalo whey hydrolzate
CMS	Compact mass spectrometer
CNS	Coagulase-negative staphylococcus
CNTs	Carbon nanotubes
CO2	Carbon dioxide
CPS	Coagulase-positive staphylococcus
CuNPs	Copper nano particles
DH	Degree of hydrolysis
DNase	Deoxyribonuclease
DPPH	Di Phenyl picryl hydrazen
EA	Ethyl alcohol
ESI	Electro spray ionization
F	Female
F1	Fraction 1
F2	Fraction 2
F3	Fraction 3
FT-IR	Fourier Transform Infra-Red
GMP	Glycol macro peptides
GSH	Glutathione
H	Hexane
H. pylori	*Helicobacter pylori*
H_2O_2	Hydrogen peroxide
HCMV	Human Cytomegalo virus
HIV	Human immunodeficiency virus
HPV	Human papilloma virus
IL-8	Inter leukin-8
IQE	Iso quercetin equivalents
IZD	Inhibition zones diameter
KBr	Potassium bromide
L	Lane marker
LDL	Low-density lipoprotein
LF	Lactoferrin

List of Abbreviation

M	Male
M .pygmaea	*Moringa pygmaea*
M. arborea	*Moringa arborea*
M. borziana	*Moringa borziana*
M. corcanensis	*Moringa corcanensis*
M. drouhardii	*Moringa drouhardii*
M. hildebrandtii	*Moringa hildebrandtii*
M. longituba	*Moringa longituba*
M. oleifera	*Moringa oleifera*
M. ovalifolia	*Moringa ovalifolia*
M. peregrine	*Moringa peregrine*
M. rivae	*Moringa rivae*
M. ruspoliana	*Moringa ruspoliana*
M. stenopetala	*Moringa stenopetala*
MIC	Minumum inhibitory concentration
MW	Molecular weight
MWCNTs	Multi-walled carbon nanotubes
Neg	Negative control
PC	Paper chromatography
PCR	Polymerase chain reaction
Pos	Positive control
S	Sample
SA	Serum albumin
SAgs	Super antigens
SDS-PAGE	Sodium dodecyl sulfate polyacrylamide gel electrophoresis
SEC-F1	Size exclusion chromatography Fraction No. 1
SEC-F2	Size exclusion chromatography Fraction No. 2
SEC-F3	Size exclusion chromatography Fraction No.3
SEM	Scanning electron microscopy
SiNPs	Silicon nanoparticles
Staph. pasteuri	*Staphylococcus pasteuri*
SWCNTs	Single walled carbon nanotubes
TCA	Trichloro acetic acid
TEM	Transmission electron microscope
TEMED	Tetra Methyl Ethylen Diamin
TiO_2	Titanium dioxide
TiO_2NPs	Titanium dioxide nanoparticles
TSST-1	Toxic shock syndrome toxin
Urea-PAGE	Urea polyacrylamide gel electrophoresis
UTI	Urinary tract infection

UV	Ultra violet
W	Water
WHO	World health organization
WP	Whey protein
ZHU	Zagazig hospital university
ZnO	Zinc oxide
ZnONPs	Zinc oxide nanoparticles
α-la	α-lactabumin
β-lg	β-lactoglobulin

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