



Ain Shams University
Faculty of Pharmacy
Microbiology & Immunology Dept.

“An *in vitro* study on the antagonistic activities of certain *Lactobacillus* species against some bacterial pathogens”

A Thesis

Submitted in Partial Fulfillment of the Requirements for
the

Master's Degree

In
Pharmaceutical Sciences
(Microbiology and Immunology)

By

Doaa Mohamed Osama AbdulMonem Saleh

Bachelor of Pharmaceutical Sciences,
Faculty of Pharmacy, Ain Shams University, 2010

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Doaa Mohamed Osama

LIST OF ABBREVIATIONS

Abbreviation	Definition
AAD	Antibiotic-associated diarrhea
ACE	angiotensin converting enzyme
AD	Atopic dermatitis
AI	Autoinducer
ANOVA	Analysis of variance
ATCC	American type culture collection
BCG	Bacillus Calmette-Guerin
BHI broth	Brain heart infusion broth
CDAD	<i>Clostridium difficile</i> associated diarrhea
CFS	Cell free culture supernatant
CFU	Colony forming unit
CLR	C-type lectin receptors
CRC	Colorectal cancer
CT	Computed tomography
CV	Crystal violet
CYP	Cytochrome P 450
DCs	Dendritic cells
DSM	German Collection of Microorganisms
EHEC	Enterohemorrhagic <i>Escherichia coli</i>
ELISA	Enzyme linked immunosorbent assay
EPEC	Enteropathogenic <i>Escherichia coli</i>
EPS	Exopolysaccharides
FAO	Food & Agriculture Organization of the United Nation
FDA	Food and drug administration
HCAs	Heterocyclic amines
HDL	High density lipoproteins
IBD	Inflammatory bowel diseases
IFN- γ	Interferon gamma
IL	Interleukin
LDL	Low density lipoproteins
LGG	<i>Lactobacillus rhamnosus</i> GG (ATCC 53103); GG derived from the first letters of Goldin and Gorbach

Abbreviation	Definition
LPxTG	Leucine-Proline-x-Threonine-Glycine; x means any amino acid
LTA	Lipoteichoic acids
MH	Mueller Hinton agar
MHC	Major histocompatibility complex
MOI	Multiplicity of infection
MRS	de Man Rogosa and Sharpe
MRSA	Methicillin resistant <i>Staphylococcus aureus</i>
MSA	Mannitol salt agar
NCFS	Neutralized cell free supernatant
NCTC	National collection of type cultures (UK)
NEC	Necrotizing enterocolitis
NF- κ B	Nuclear factor kappa B
NIH	National Institutes of Health of the US
NLR	Nucleotide oligomerisation receptors
NPPC	p-Nitrophenylphosphorylcholine
PAMPs	Pathogen associated molecular patterns
PBMC	Peripheral blood mononuclear cells
PBS	Phosphate buffered saline
PG	Peptidoglycans
PLC	Phospholipase C
PPAR- γ	Peroxisome proliferator-activated receptor gamma
QS	Quorum sensing
RAM	riboflavin assay medium
RLR	RIG-1 like receptors
ROS	Reactive oxygen species
RPMI	Roswell Park Memorial Institute
SDP	Sortase dependent proteins
SEM	Scanning electron microscopy
S-layer proteins	Paracrystalline surface layer proteins
STEC	Shiga toxin-producing <i>Escherichia coli</i>
Stx	Shiga toxins
TCA	Trichloroacetic acid

Abbreviation	Definition
TGF- β	Transforming growth factor β
TLR	Toll-like receptors
TNF- α	Tumour necrosis factor alpha
T _{reg}	Regulatory T-cells
WHO	World health organization
WTA	Wall teichoic acids

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