Molecular cloning and immunogenicity evaluation of rotavirus structural proteins as recombinant vaccine

Thesis
Submitted for the Degree of Master of Science
in Microbiology

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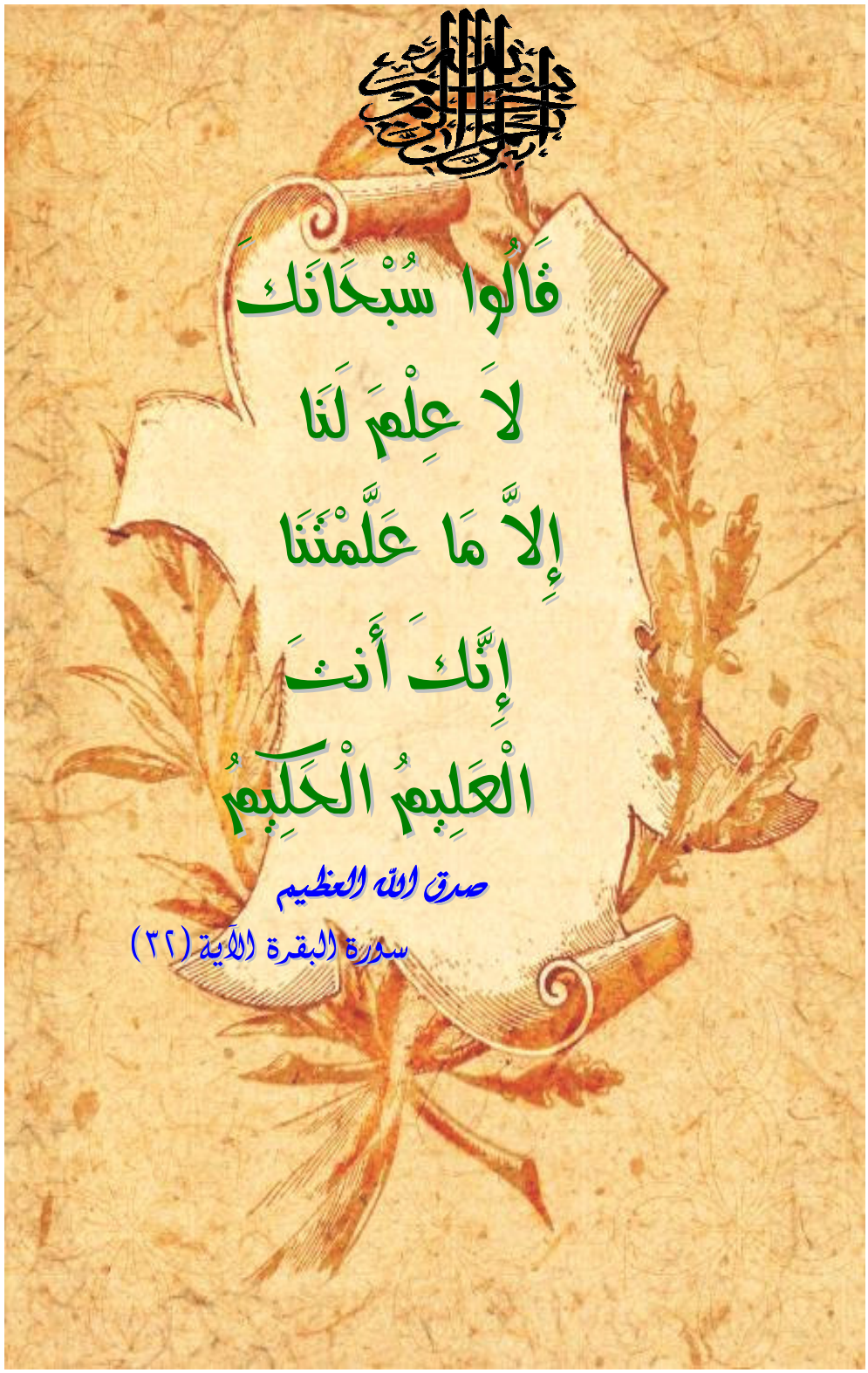
قَالُوا سُبْحَانَكَ
لاَ عِلْمَ لَنَا
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إِنَّكَ أَنتَ
الْعَلِيمُ الْحَكِيمُ
صدق الله العظيم
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I declare that this thesis has been composed by myself and the work of which it is a record has been done by myself. It has not been previously submitted for any degree at this or any other university.

Signed

Saeed Mostafa Ameen

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LIST OF ABBREVIATIONS

aa	Amino Acid
AIDS	Acquired Immunodeficiency Syndrome
AlP	Aluminum Phosphate
APS	Ammonium Persulfate Solution
ASC	Antibody-Secreting Cell
ATCC	American Type Culture Collection
BALB/c	Inbred strain of mouse
BCG	Bacillus Calmette-Guerin
BP	Base Pair
BSA	Bovine Serum Albumin
CBB	Coomassie Blue G-250
CC-RT-PCR	Cell Culture-Reverse Transcriptase- Polymerase Chain Reaction
CD region	Coding region
cDNA	complementary DNA
CT	Cholera Toxin
CTL	Cytotoxic T-Lymphocyte
DEPC	DiEthyl PyroCarbonate
DMEM	Dulbecco's Modification of Eagle's Medium
DNA	Deoxyribonucleic Acid
dNTP's	deoxynucleotide Trihosphates
E. coli	*Escherichia coli*
EDIM	Epizootic Diarrhea of Infant Mice
EDTA	EthyleneDiamine Tetraacetic Acid
EIA	Antigen Enzyme Immunoassays
ELISA	Enzyme Linked Immunosorbent Assay
ELISPOT	Enzyme-Linked Immunospot

FBS	Fetal Bovine Serum
G-protein	Glycoprotein
GSK	GlaxoSmithKline
HCV	Hepatitis C Virus
HEPES	N-2-Hydroxy Ethyl Piperazine-N-2-Ethane Sulphonic acid
Hib	Haemophilus influenzae type B
HIV	Human Immunodeficiency Virus
HRV	Human Rotavirus
IFA	Incomplete Freund's Adjuvant
IFN	Interferon
IgG	Immunoglobulin G
I/M	Intramuscular Injection
IMAC	Immobilized Metal Affinity Chromatography
I/N	Intranasal Injection
I/P	Intraperitoneal Injection
I-RRV	Inactivated Rhesus Rotavirus
L3	MonooLeate/Lauric Acid
LB Broth	Luria-Bertani Broth
LT	heat-Labile Toxin
MBP	Maltose-Binding Protein
MHC	Major Histocompatibility Complex
MMLV	Moloney Murine Leukemia Virus
MOPS	3-(N-Morpholino) PropaneSulfonic acid
MPL	MonoPhosphoryl Lipid
mRNA	Messenger Ribonucleic Acid
NGM	Non Glycosylated Mutant
Ni-NTA	Nickel- Tri Acetic acid- treated Sepharose
N-MAbs	Neutralizing Monoclonal Antibodies
NSP	Non Structural Protein

OD	Optical Density
ODN	OligoDeoxynucleotide
ORT	Oral Rehydration Therapy
PBS	Phosphate buffered saline
PCPP	Poly[di(CarboxylatoPhenoxy)]Phosphazene]
PCR	Polymerase Chain Reaction
PLG	Poly Lactide-Coglycolide
P-protein	protease-cleaved protein
PSA	Porcine Serum Albumin
RNA	Ribonucleic Acid
rpm	Round Per Minute
RRV	Rhesus Rotavirus
RTB	Ricinus communis Toxin B
RT-PCR	Reverse Transcriptase- Polymerase Chain Reaction
RV	Rotavirus
rVP6	Recombinant VP6
SDS-PAGE	Sodium Dodecyl Sulfate - Polyacrylamide Gel Electrophoresis
Sf	Spodoptera frugiperda
TAE	Tris–Acetate EDTA Buffer
TEMED	Tetramethylethylenediamine
Th1 Cell	T helper 1 Cell
TrVP7	Truncated VP7
VLPs	Virus Like Proteins
VP	Viral Protein
WHO	World Health Organization

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INTRODUCTION & AIM OF WORK