BIOCHEMICAL STUDIES ON THE CELL WALL LIPOPOLYSACCHARIDE OF SOME MICROORGAMISMS

THESIS

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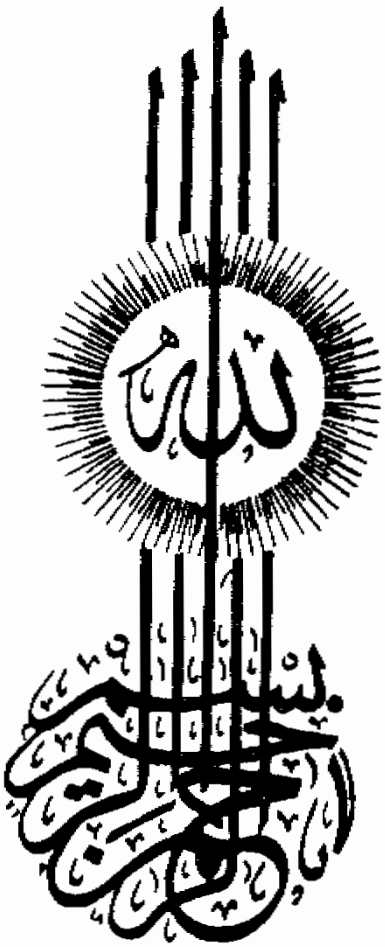

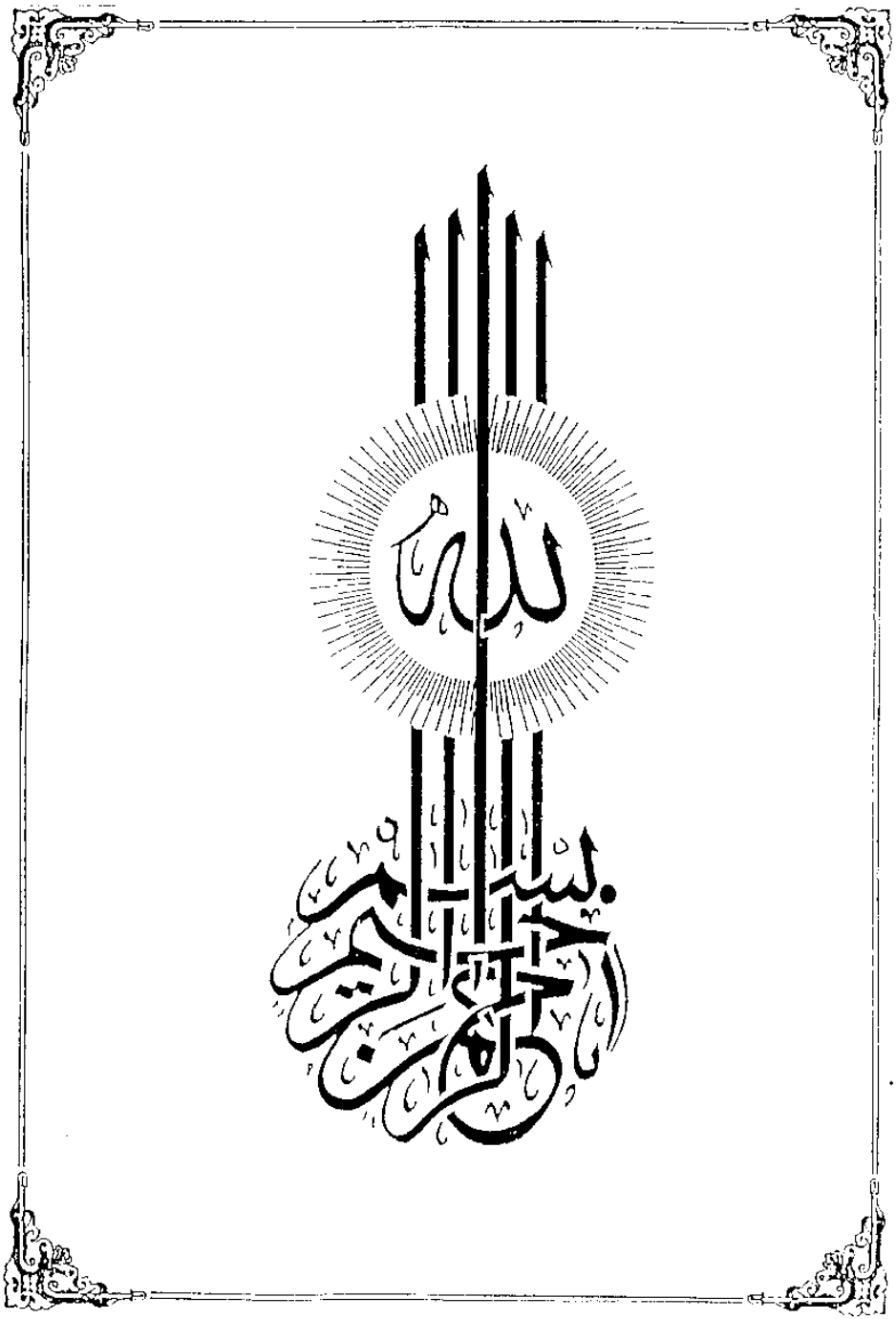

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ABBREVIATIONS USED*

ACL	antigen carrier lipid.
ASC	abnormal serum components.
BHM	B-hydroxymyristic acid.
bp	boiling point.
BSA	bovine serum albumin.
C	degree centigrade.
cAMP	cyclic adenosine monophosphate.
CDP	cytidine diphosphate.
cm	centimetre.
CMP	cytidine monophosphate.
CMR	chloramphenicol resistant.
conc.	concentration.
DAP	diaminopimelic acid.
DEGS	diethylene glycol succinate.
E. coli	*Escherichia coli.*
EDTA	ethylenediamine tetra acetic acid.
ESR	erythrocyte sedimentation rate.
FID	flame ionization detector.
Fig.	figure.
g	gramme.
Gal	galactose.
Gal-	galactosyl.
GC	gas chromatography.
GLC	gas liquid chromatography.
HMDS	hexamethyldisilizane.
KDO	2-keto-3-deoxyoctonate.
L	litre.
log	logarithmic.
LPS	lipopolysaccharide.
M	molar.
Man-	mannosyl.
mg	milligramme.
MIC	minimum inhibitory concentration.

min	minute
ml	millilitre
mm	millimetre.
N	normal.
nm	nanometre.
No	number.
O.D.	optical density.
PCP	phenol-chloroform-petroleum ether.
PP	pyrophosphate.
PW	phenol-water.
R mutants	rough mutants.
Rf	retardation factor.
Rha-	rhamnosyl.
RNA	ribonucleic acid.
rpm	round per minute.
S.D.	standard deviation.
S forms	smooth forms.
S.	*Salmonella.*
TCA	trichloroacetic acid.
TLC	thin layer chromatography.
TMCS	trimethylchlorosilane.
UDP	uridine diphosphate
ug	microgramme.
ul	microlitre.
UMP	uridine monophosphate.
v	volume.

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*:- *Official abbreviations cited in " Current Therapy" (1979); Edited by Howard H. Cohn. W.B.- Saunders Company/Philadelphia/ London/Toronto. page 914.*

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PREFACE

In growing as well as civilized countries development of bacterial strains highly resistant to one or more of the used antibiotics presents a serious problem. Primarily, the problem of multiple drug resistance received attention because of its medical importance, but more recently much effort has been devoted to genetic studies from which the episomal nature of the responsible factors is emerging as one of the most important problems. Work with several antibiotics is now in progress in our laboratory to study the lipopolysaccharide structure of the cell wall of bacterial strains that acquired resistance to the commonly used antibiotics. This thesis presents the analysis of the lipopolysaccharide of the cell wall of *E. coli* CMR which was made resistant to chloramphenicol. The biological effect of the prepared lipopolysaccharide was studied as well. Results indicate that chloramphenicol may cause amplification of rfa and rfb loci of *E. coli* resulting in enormous increase in total carbohydrates, aminosugars and the lipid moiety in the lipopolysaccharide prepared from *E. coli* CMR. The pyrogenicity of the lipopolysaccharide prepared from *E. coli* CMR was tested and an increase in the concentration of fibrinogen was reported by rocket-immuno-electrophoresis.

I- INTRODUCTION