EFFICACY OF HEPATITIS B VACCINE IN BILHARZIAL AND NON BILHARZIAL CHILDREN

THESIS

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by

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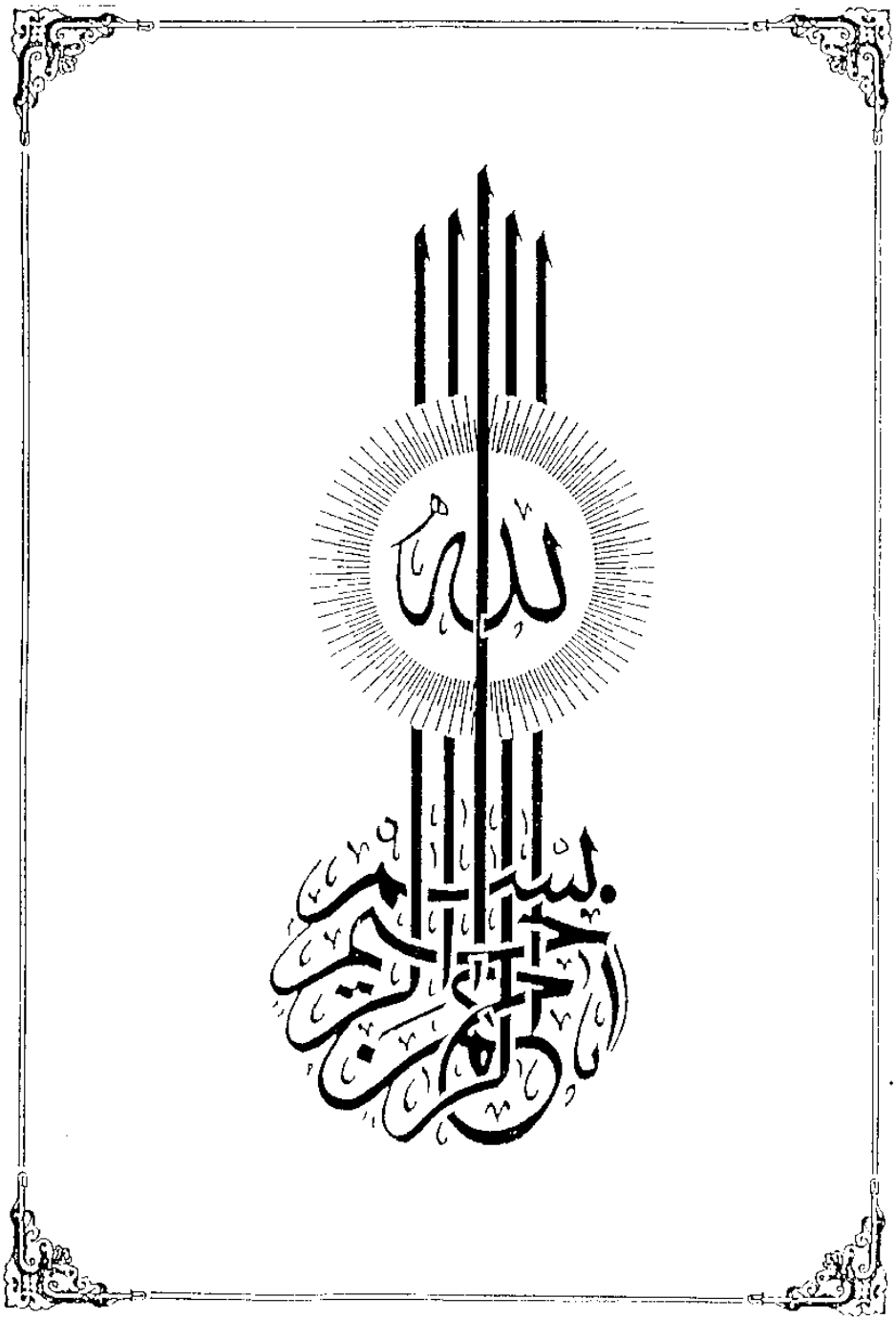
"قالوا سبحانك لا علم لنا إلا ماعلمتنا إنك أنت العليم الحكيم"

صدق الله العظيم

آيه (٣٢) سورة البقرة



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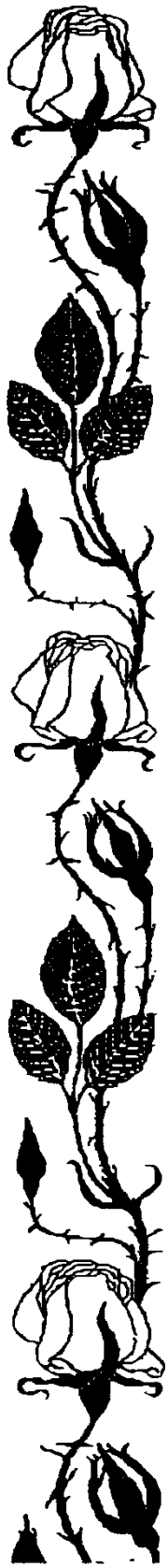

To my parents

and

my family

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Abdel Samie El Deab

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CONTENTS

ABBREVIATIONS

AIDS : Acquired immunodeficiency syndrome.

ALT : Alanine trarsferase.

antiHBc : Antibody against hepatitis B core antigen

anti-HBe : Antibody against hepatitis B e antigen

anti-HBs : Antibody against hepatitis B surface antigen

AVH : Acute viral hepatitis

CAH : Chronic active hepatitis

CLD : Chronic liver disease

c DNA : Cloned deoxy ribonucleic acid.

CPH : Chronic persistent hepatitis

DHBV : Pekinduck hepatitis B virus

ELISA / EIA : Enzyme linked immunosorbent assay

GsHV : Ground squirrel hepatitis virus

G.M.T. : Geometric mean titer

HAV : Hepatitis A virus.

HB : Hepatitis B

HBcAG : Hepatitis B core antigen

HBeAg : Hepatitis B e antigen

HBIG : Hepatitis B immunoglobulin

HBsAb : Hepatitis B surface antibody

HBsAg : Hepatitis B surface antigen

HBVDNA : Hepatitis B virus deoxyribonucllic acid

HBx Ag : Hepatitis B x antigen

HCC : Hepatocellular carcinoma

HCV : Hepatits C virus

HDV : Hepatitis Delta virus

HEV : Hepatitis E virus

HLA : Human leucocyte antigen

HTLV - 3 : Human T lymphocyte virus 3

IgG : Immunoglobulin G

IgM : Immunoglobulin M

ISG : Immune serum globulin

LAV : Lymphadenopathy virus

n An B : Non A non B hepatitis

PCR : Polymerase chain reaction

PDV : Plasma derived vaccine

RIA : Radioimmunoassay

RI BA 2 : Radioimmuno-blot assay 2

RPHA : Reversed passive haemoagglutination

SEA : Soluable egg antigen

S. haematobium : Schistosoma haematobium

S / N = Sample / Negative ratio

S. mansoni : Schistosoma mansoni

THBV : Tree squirrel hepatitis B virus

WHV : Woodchuch hepatitis

YDV : Yeast derived vaccine

INTRODUCTION AND AIM OF THE WORK

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Hepatitis B virus infection is a world-wide disease and is closely correlated with the development of chronic hepatitis, liver cirrhosis and primary hepatocellular carcinoma (WHO, 1987).

In Egypt the problem of HBV infection is worsened due to the presence of schistosomiasis which is endemic in this country. While schistosoma mansoni infection does not severely affect hepatocyte function, the presence of HBV may lead to chronic active or chronic persistent hepatitis (Sherlock, 1975).

Actually, there is no real treatment for HBV infection and the hope for its control depends mainly upon prevention by active vaccination.

It was found that the most immunological response to HBV is directed towards antigenic determinants on the surface of the virus particles HBsAg.

Antibody to HBsAg (HBsAb) is known to protect against reinfection with any HBsAg subtype, if the antibody is directed towards a group specific "a" determinant present on all subtypes of HBsAg.

This has lead to the development of HB vaccine which consists of highly purified and inactivated HBsAg particles isolated from a plasma

of persistently infected subjects or from alternative sources as recombinant DNA (Yowf *et al.*, 1982; Valenzuala *et al.*, 1982).

The safety and the efficacy of this vaccine in various western population groups at risk of acquiring HBV infection has been established (Szmuness *et al.*, 1980; Hilleman *et al.*, 1983).

The aim of this study is to :

(1) Study the safety and the efficacy of HB vaccine in school children (6-12 y.) with and without bilharziasis.

(2) Study the different variables in school children that may affect the immune response to the vaccine.

(3) Set recommendations for HB vaccine according to the results obtained.

The vaccines used in this clinical trial are : HEVAC B Pasteur as a model of plasma derived vaccine and HB. VAX. DNA as a synthetic vaccine.