STUDY OF INTERLEUKIN-2 RECEPTORS AND TUMOUR NECROSIS FACTOR SERUM LEVELS IN SCHISTOSOMIASIS AND THEIR ANALOGOUS CHANGES IN COLLAGEN DISEASES AND SCHISTOSOMAL ARTHROPATHY

Thesis

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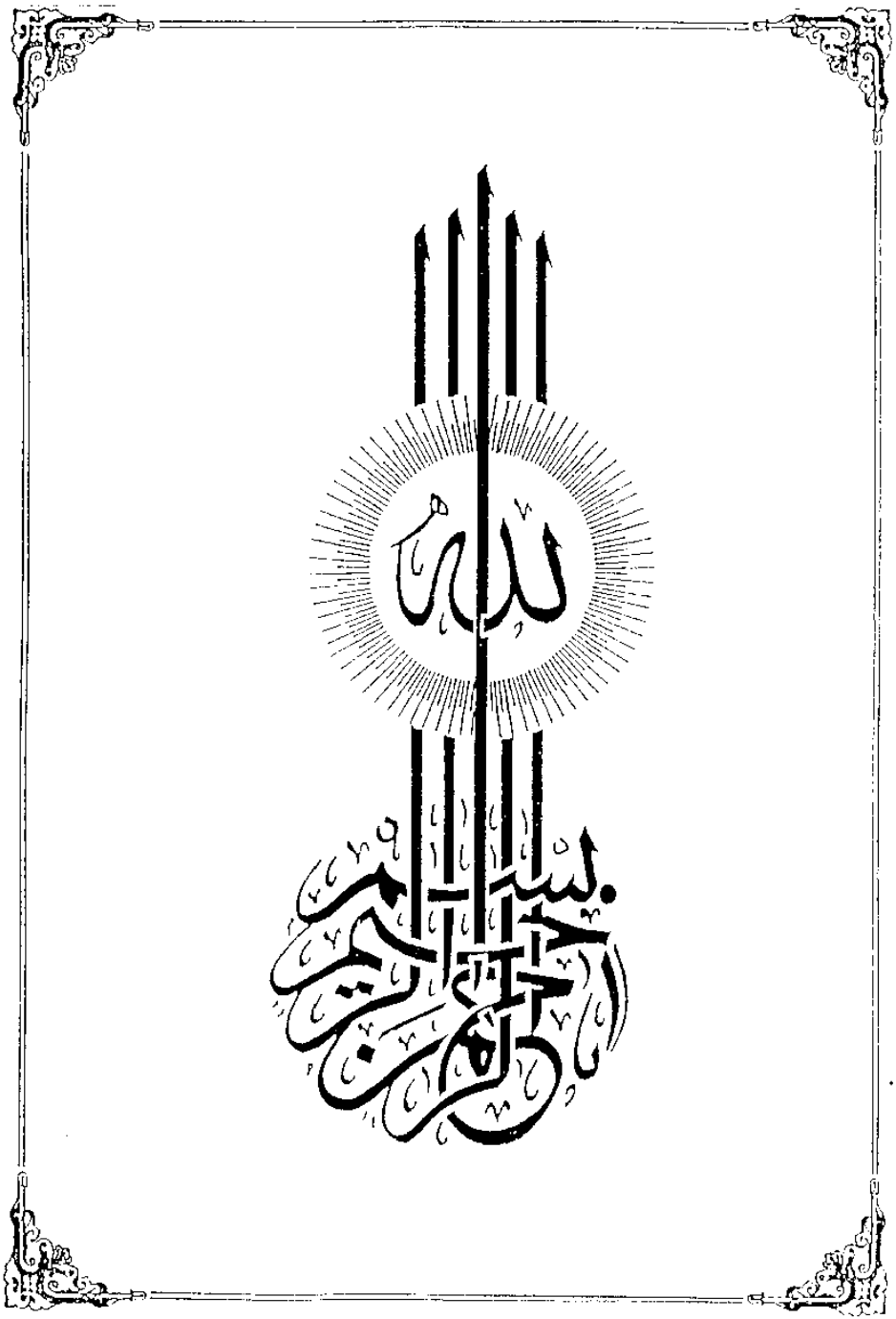

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ABBREVIATIONS

ADCC	:	Antibody dependent cell mediated cytotoxicity
BAF	:	B-cell activating factor
BCDF	:	B-cell differentiation factor
BCGF	:	B-cell growth factor
CAA	:	Circulating anodally migrating antigen
cAMP	:	Cyclic adenosine monophosphate
CCA	:	Circulating cathodally migrating antigen
CFU-e	:	Colony forming unit-erythroid
CFU-GM	:	Colony forming unit-granulocyte/macrophage
CSF	:	Colony stimulating factor
ECF-L	:	Eosinophil chemotactic factor for lymphocytes
ESP	:	Eosinophil stimulation promotor
GASP	:	Gut associated proteoglycon
IFN	:	Interferon
IL	:	Interleukin
LAP	:	Lymphocyte activating factor
LGL	:	Large granular lymphocytes
LPS	:	Lipopolysaccharides
LT	:	Lymphotoxin
MHC	:	Major histocompatibility complex
MSA	:	Major serological antigen

NK-cells	:	Natural killer cells
PEG	:	Polyethylene glycol
PHA	:	Phytohaemagglutinin
SDIF	:	Schistosome derived inhibitory factor
SEA	:	Soluble egg antigen
SWAP	:	Soluble adult worm antigenic preparation
T_3	:	Immature T-cells
T_4	:	Helper/inducer T-cells
T_8	:	Suppressor/cytotoxic T-cells
TCGF	:	T-cell growth factor
TGF_β	:	Transforming growth factor-beta
TNF	:	Tumour necrosis factor

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Introduction

INTRODUCTION

Schistosomiasis is one of the serious endemic parasitic infections in Egypt due to its major complications and its affection of a large category of Egyptians (Khalil et al., 1977).

Chronic infections (like schistosomiasis) and autoimmune conditions (like collagen diseases) are settings in which the body's immune system is more or less continuously bathed in antigenic stimuli. The antigenic sources can be invading organisms (in schistosomiasis), or altered and normal cross-reacting self components (in collagen diseases). The result of these long-term interactions between a person's immune system and antigens can be immunopathogenic, resulting in severe morbidity and mortality (George and Colley, 1992).

Human intestinal and hepatic schistosomaisis is associated with characteristic alterations of T-cell mediated immune responses (Feldmeier et al., 1985). Among the most critical features of the immune response is the secretion of the T-lymphocyte derived growth factor interleukin-2 (IL-2) and the expression of receptors for this lymphokine (Smith, 1989). Since soluble interleukin-2 receptors (sIL-2R) could be detected in vivo, and the preliminary observations of certain diseases associated increase in serum levels of this molecule, the applicability and relevance of

sIL-2R determination in a broad spectrum of disease conditions (Nelson et al. 1987).

Another aspect about immune system in human intestinal and hepatosplenic schistosomiasis is the role of macrophages and the macrophage mediator tumour necrosis factor-alpha (TNF-α) in granuloma formation which is the key pathogenic event in this disease (Payman et al., 1992 and Joseph and Boros, 1993). Beside the possible role of TNF-α in host defense against parasitic infection and tumour cell growth, it appears to have a more general role as an effector molecule in various inflammatory processes. The gene coding for human TNF-α has been cloned (Wang et al., 1985) and mapped to the short arm of chromosome six, and is in close linkage with genes of the major histocompatibility complex (MHC) (Speis et al., 1986). Since, some haplotypes of the MHC are associated with certain diseases, the possibility of abnormal TNF gene expression as a factor in various disease mechanisms has been proposed (Maury and Teppo, 1989).

The association between schistosomiasis and arthritis was reported by Mousa and El-Garem (1956) and the term "bilharzial arthropathy" was introduced by Bassiouni (1962). However, the term bilharzial or schistosomal arthropathy is still in need for further research to add more in its pathogenesis and more in its criteria for diagnosis and discrimination of it from other types of arthritis or arthropathies.