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**STUDY OF THE HUMORAL AND CELLULAR
IMMUNE RESPONSES TO DIFFERENT
FASCIOLA GIGANTICA ANTIGENS**

A Thesis

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Submitted to the Faculty of Science, Cairo University in Partial
Fulfillment of the Requirements for the Degree of M.Sc. in Zoology
(Immunoparasitology)

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Abstract

A group of antigens were purified from excretory-secretory antigens (CP or FABP) of *Fasciola gigantica* using immunoaffinity chromatography. These antigens were studied to evaluate their protective effect against fascioliasis. The CP and FABP were used before and after infection. Parasitological parameters (worm burden and bile egg count) and immunological parameters (immunoglobulin and interleukin level) were undertaken. It was evident that CP was more potent and FABP in reducing worm burden and egg count and evaluating levels of immunoglobulin isotypes (IgM, total IgG, IgG2 and IgG4) and interleukins (IL-6, IL-10, IL-12 and TNF- α). Thus, it was proved that CP antigens could be candidate for developing a vaccine against fascioliasis

Keywords: Fascioliasis; *Fasciola gigantica*; worm burden; egg count; immunoglobulin levels; interleukins levels.

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List of abbreviation

ADCC	Antibody-dependent cellular cytotoxicity
BPB	Bromophenol blue
BSA	Bovine serum albumin
Cat L	Cathepsin L
CFA	Complete Freund's adjuvant
CL	Cathepsin L proteases
CP	Cysteine protease
DEAE	Diethyl amino ethyl
E/S	Excretory/ Secretory products
EITB	Enzyme linked immunoelectrotransfer blot
ELISA	Enzyme- Linked Immunosorbent Assay
Eo	Eosinophils
FABP	Fatty acid binding proteins
GLDH	Glutamate dehydrogenase
GST	Glutathione-S-transferases
hr	Hour
HRP	Horse-radish peroxidase
i.m	Intramuscularly
IFA	Incomplete Freund's adjuvant
IFN- γ	Interferon-gamma
IgG4	Immunoglobulin-G4
IL-1	Interlukin-1
ITT	Indonesian Thin Tail
kDa	Kilodalton
LAP	Leucine aminopeptidase

Mw	Molecular weight
NEJs	Newly encysted juvenile flukes
NK	Natural killer
OD	Optical density
PBMNCs	Peripheral blood mononuclear cells
PBS	Phosphate-buffered saline
PCVs	Packed cell volumes
PR	Percentage reduction
Pro	Proenzyme
rFABP	Recombinant FABP
RT-PCR	Real-time polymerase chain reaction
SBSP-TBRI	Schistosome Biological Supply Program, Theodor Bilharz Research institute
SDS-PAGE	Sodium dodecyl-sulfate polyacrylamide gel electrophoresis
TEMED	N,N,N,N-tetra-methyl-ethylene-diamine
Th	T-helper
TNF- α	Tumor necrosis factor-alpha
TyrK	Tyrosine kinases
vol	Volume
WB	Western Immunoblot
wk	Week (s)
wk PI	Weeks postinfection

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