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# جامعة عين شمس

التوثيق الالكتروني والميكروفيلم



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#### MOLECULAR LOCALIZATION OF SOME GENES ON CHROMOSOMES OF SCHISTOSOMES

A Thesis
Submitted
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To
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BNOTY

#### MOLECULAR LOCALIZATION OF SOME GENES ON CHROMOSOMES OF SCHISTOSOMES

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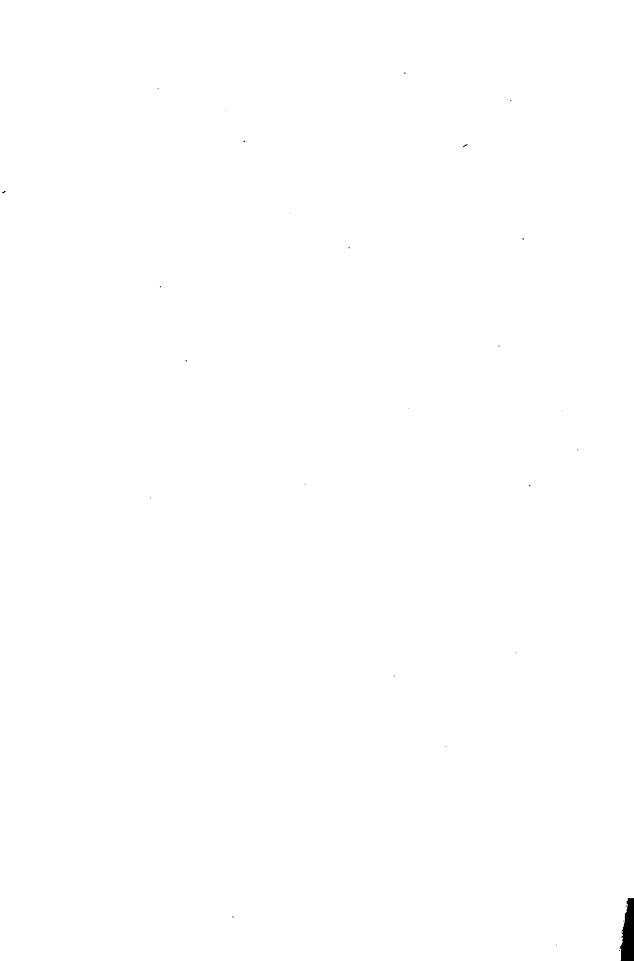


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# Abstract

In this study, two clones coding for two genes (aldolase and fimbrin) were isolated from cDNA library of Egyptian S. mansoni, with molecular size of 1.4 kb and 2.4 kb, respectively. These clones have been used to localize their genes on the chromosomes of S. mansoni and S. haematobium sporocysts, by in-situ hybridization and PRimed in-situ hybridization. Using enzymatic detection system : biotin streptavidin alkaline phosphatase and the signals visualized by using color dye, the aldolase gene has been localized on the distal region of the long arm (q) of autosomal chromosome number 1. The fimbrin gene has been localized on distal region of long arm (q) of autosomal chromosome number 4 in both S. mansoni and S. haematohium. Schistosome metaphase chromosomes, prepared for light microscopy cytogenetic analysis and processed for scanning electron microscopy. At low power, the chromosomes showed a three-dimensional cylindrical profile and a smooth surface morphology shows globular surface. The structure and chromatin fibres at higher magnifications.

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#### List of Abbreviations

AP Alkaline phosphatase

B. alexandrina Biomphalaria alexandrina.

BCIP 5-Bromo-4-chloro-3-indolyl-phosphate.

bp Base pair ·

BSA Bovine serum albumin

B. Truncatus Bulinus truncatus :

C-bands Constitutive heterochromatic bands. cDNA Complementary deoxyribonucleic acid.

DNA Deoxyribonucleic acid.
DNase Deoxyribonuclease

dNTP Deoxy nucleotide tri-phosphate.

E. coli Escherichia coli.

EDTA Ethylenediamine tetrachloro acetic acid.

ESTs Expressed Sequenced Tags.

FISH Fluorescence *in-situ* hybridization.

G-bands Giemsa bands .

GTG Giemsa-bands by trypsin using Giemsa ·

kb Kilo base. kDa Kilo Dalton. KV Kilo voltage

LM Light microscope

λZAP II Derivative of bacteriophage lambda.

mRNA Masenger ribonucleic acid.

NBT Nitro blur tetrazolium. ORF Open reading frame.

OD Optical density.

pBluescript Plasmid cloning vector.
PBS Phosphate buffer saline
PCR Polymerase chain reaction.

pfu Plaque forming unit.

PRINS PRimed *in-situ* hybridization rDNA Repeated deoxyribonucleic acid.

RNA Ribonucleic acid. RNase Ribonuclease.

SA-AP Streptavidin alkaline phosphatase

conjugate.

SCOX1 S. mansoni cytochrome oxidase.

SDS Sodium dedocyl sulphate.

SEM Scanning electron microscope
S. haematobium Schistosoma haematobium

Sm 22.9 S. mansoni protein, 22.9 kDa in size. Sm 22.7 S. mansoni protein, 22.7 kDa in size. SMDH S. mansoni malate dehydrogenase •

SSC Standard saline citrate ·
TCH Thiocarbo hydrazide ·
TE Tris EDTA buffer ·

UV Ultra violet ·

XL-Blue A strain of *Escherichia coli*. YAC Yeast artificial chromosome