سامية محمد مصطفى

شبكة المعلومات الجامعية

بسم الله الرحمن الرحيم

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شبكة المعلومات الجامعية

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التوثيق الالكتروني والميكروفيلم

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التوثيق الإلكتروني والميكروفيلم

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بالرسالة صفحات لم ترد بالأصل

STUDY ON THE POSSIBLE USE OF ULTRAVIOLET IRRADIATED CERCARIAE OF SCHISTOSOMA MANSONI AS A VACCINE IN EXPERIMENTAL ANIMALS

Thesis

Submitted in Partial Fulfillment of the Requirements of Master Degree

In

"Parasitology"

By

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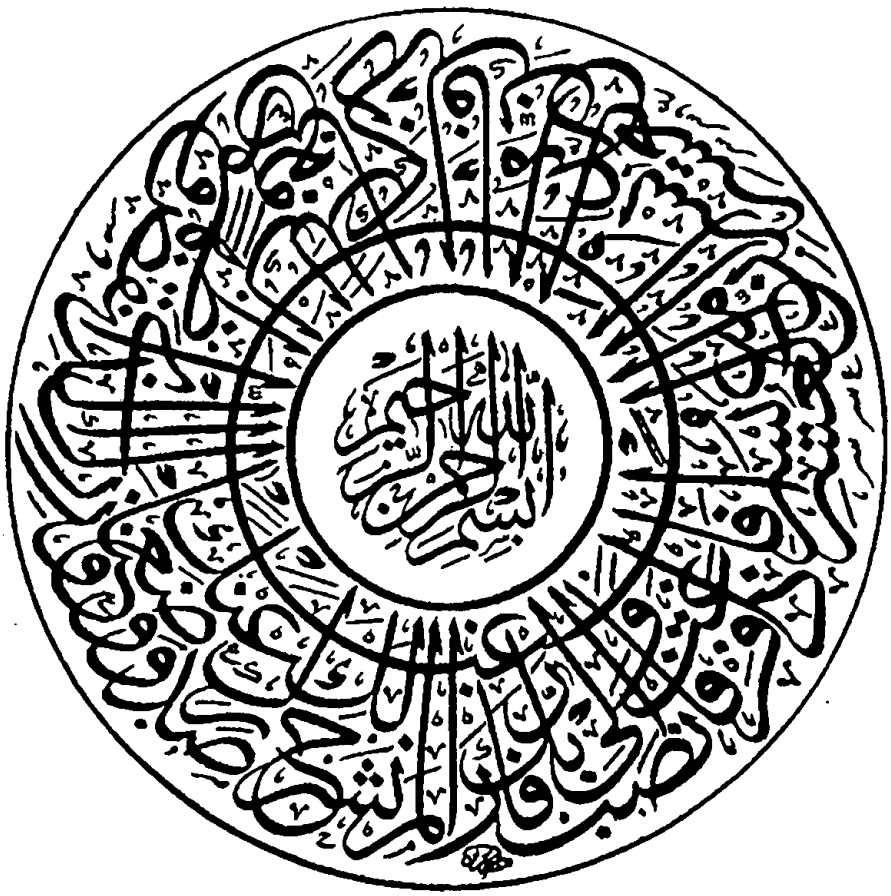

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Schistosoma mansoni; a trematode parasite that infects humans, causes serious health hazards in many tropical and subtropical areas of the world. Current World Health Organization (WHO) estimates more than 200 million people are infected with this parasite and another 600 million are at risk (WHO, 1998).

Chemotherapy is the most widely advocated method of schistosomiasis control (WHO, 1993). However; the application of mass chemotherapy will lead to many problems, on top of which is the drug resistance. Evidence of drug resistance or at least low susceptibility to praziquantel has developed in the last few years (Ismail ***et al.,*** 1996); also praziquantel treatment cannot prevent reinfection and progressive development of the pathology (Dupre ***et al.,*** 1999)

The use of vaccination to susceptible individuals has recently gained considerable attention by many authors using different stage- antigens of ***Schistosoma mansoni*** (Suri ***et al.,*** 1997,Wilson ***et al.,*** 1998 and Attallah ***et al.***, 1999). However, the fundamental obstacle to vaccine development in ***Schistosoma mansoni*** infection is the lack of understanding of what type of an immune response should be stimulated (Hoffman ***et al.,*** 1999). Further studies to obtain the optimum type of ***Schistosoma*** vaccine are still required.

The present study was designed to study the possibility of using ultraviolet irradiated cercariae of ***Schistosoma mansoni*** as a vaccine in experimental animals.

REVIEW OF LITERATURE

HISTORICAL REVIEW

Schistosomiasis, has a history that goes back to antiquity. The earliest beginning can most probably be traced back to the Great Lakes of East Africa (Bruijning., 1971). The ancient Egyptians recognized haematuria " the main sign of urinary schistosomiasis", and recorded it in the Kahun papyrus (1900 B.C.) as "a`- a –a`" disease (Bader ***et al.***, 1981). Some of the features of the disease were known to the physicians of ancient Egypt and was reported in the Ebers papyrus (1550 B.C.) They described a variety of drugs for treatment, most of that were palliative in nature. Amazingly, there is an early mention of Antimony, which was until later used as specific anti – bilharzial drug (Koraitim, 1994).

In 1815, in the post mortem room, Thiodor Bilharz, a German physician working at Kasr-El-Aini, saw a tiny thread-like organism moving in the mesenteric veins of a young Egyptian boy. He called it Diastoma .In 1859, Cobbold discarded the term Diastoma and suggested the name Bilharzia after its discoverer but Weinland (1858) had already proposed the generic term ***Schistosoma*** (from Schistos=split; Soma=body). In 1893, Sir Patric Manson affirmed that there were two different species of bilharzia. Later, in 1907, Sambon announced that the lateral-spined ova were produced by a knew species affecting intestine and choosed the name mansoni for it (Koraitim, 1994).

EPIDEMIOLOGY

Schistosomiasis, is considered as the second most important tropical disease after malaria in the world. Globally, about 120 million of the 200 million infected people are estimated to be symptomatic, and 20 million are thought to suffer from severe consequences of the infection. Yearly, 20,000 deaths are estimated to be associated with schistosomiasis. This mortality is mostly due to bladder cancer or renal failure associated with urinary schistosomiasis and to liver fibrosis and portal hypertension associated with intestinal schistosomiasis. (WHO, 1998) .The proportion of population at risk in 42 countries endemic for human schistosomiasis was estimated as 21 percent (Iarotski and Davis, 1981).

The distribution of ***Schistosoma mansoni*** covers most of Africa and Madagascar (Manson–Bahr and Bell, 1987). The original endemic area of ***Schistosoma mansoni*** is thought to have been the Great Lakes region of Central Africa, where both the parasite and the snail hosts are in a state of active evolution (Nelson ***et al.***, 1962).

The global distribution of schistosomiasis has changed significantly in the past 50 years, with control successes achieved in Asia, the Americas, North Africa and Middle East. Schistosomiasis has been eradicated from Japan and some of the islands in the Lesser Antilles. Transmission has been stopped in Tunisia, and is very low in Morocco, the Philippines, Saudi Arabia, and Venezuela. (WHO, 1998).