جـــامعة الفـــيوم
Fayoum University

IWaTec

UNIVERSITÄT DUISBURG ESSEN
Open-Minded

Research project

1.Title of the project	**Genetic Studies and Molecular Identification of lymnaeid snails (Family *Lymnaeidae*) in certain governorates in Egypt**	
2. Project partners/supervisors	**Egypt**	**Germany**
	Prof. Dr. Samia El Bardicy **Prof. Dr. Hanaa El Khayat** **(Bilharz Institute)**	**Prof. Dr. Bernd Sures** **Dr. Daniel Grabner** **(UDE)**
3. Profile student	BSc. (Hons) Biotechnology	
4. Duration of the project	18 months	
5. Work summary	• Collection of lymnaeid snails from different districts in Egypt especially which are known to suffer from fascioliasis problems. • Collected snails will be maintained in the laboratory under standard conditions for morphological and anatomical identification, parasitological examination and molecular identification. • Collection of "ecological" data at the sampling sites (Dissolved oxygen, conductivity, temperature, pH, …) in various sampling sites. • DNA extraction of the whole genome using kits. • PCR amplification of 18S rDNA fragments. • Restriction digestion of the PCR products. • PAGE (Polyacrylamide gel electrophoresis) for the digested products. • DNA sequencing for the 18S ribosomal DNA gene of the most abundant subspecies of lymnaeid snails in Egypt. • PCR and/or real time PCR analyses for *Fasciola gigantica* in order to obtain information about the infection status of the collected snails. • Statistical analysis for the results obtained to deduce the most abundant lymnaeid species, the prevalence of fascioliasis in Egypt and the correlation with ecological data.	
6. Funding and resources available to complete the project	For collection of snails, ecological data, Maintaining in the lab, morphological study and anatomical identification.	PCR amplification, restriction digestion, electrophoresis, DNA sequence.
7. General impact of the project	This project aims at developing an accurate, sensitive and specific molecular technique to differentiate between different lymnaeid species and to diagnose their infection status with fascioliasis to help in constructing a database on the infected areas. This semi-survey will help to construct a database on abundance of lymnaeid species and the fascioliasis prevalence in Egypt. In addition, detection of ecological conditions associated with snail distributions and infection may help to improve control strategies and to minimize water pollution.	
8. Outlook of the project	Future development of a reliable molecular tool to differentiate between different lymnaeid species in water resources and to diagnose their infection status with fascioliasis, types, density.	