

## Personal Data

Name: **Fouad Sufian El-Shehabi**

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## Education

**B.Sc.** (1990) in **Biological Sciences** (major) and **Chemistry** (minor)  
Yarmouk University, Irbid, Jordan.

**M.Sc.** in **ImmunoParasitology** (1996)

Yarmouk University, Irbid, Jordan.

Title of MSc Dissertation: “***Canine intestinal helminthosis in Jordan & assessment of Coproantigen assay for the diagnosis of Echinococcosis***”.

**Ph.D.** in **Molecular Parasitology** (2009),

McGill University, Montreal-Canada

Title of PhD Dissertation: “***Characterization of novel biogenic amine receptors in the human bloodfluke Schistosoma mansoni***”.

## Work Experience

**Lecturer/Assistant Professor** @ Biological Sciences and Biotechnology Department-  
faculty of Science-Hashemite University-Jordan (09/2018 – present)

**2<sup>nd</sup> Post Doc** @ Depart. Environment and Climate Change Canada ECCC, Science  
and Technology Branch (11/2014 – 11/2017)

St. Lawrence Centre (105 McGill, 7th floor)

Montreal-Canada

**1<sup>st</sup> Post Doc** @ Depart. Pharmacology and Therapeutics (09/2010-03/2013)  
Dr. Terry Hebert's lab, McGill University, Canada

**Research assistant** @ Institute of Parasitology (01/2010-06/2010)  
Dr. Timothy Geary's lab, McGill University, Canada

**Research assistant** @ Parasitology & Immunology Research Laboratory, Yarmouk University Jordan (06/1996-09/1997). Work involved both laboratory and field investigations dealing with the epidemiology of parasitic invertebrates including *E. granulosus* and other associated intestinal cestodes, nematodes and acanthocephalans.

## Honors and Awards

- \* Natural Sciences and Engineering Research Council of Canada (NSERC) Visiting Fellowships in Canadian Government Laboratories Program, (Nov 2014- Nov 2017).
- \* T.W.M. Cameron Award for Excellence in Parasitology, (2009/2010).
- \* Alma Mater McGill University Travel Grant (2008).
- \* Molecular Helminthology: An integrated approach, Keystone Symposium, Copper Mountain, Colorado, USA, (2005).

## Training Courses & Workshops

- \* Worked as lecturer of different undergraduate lab courses: Invertebrate Zoology 212 and Industrial Microbiology 433 in 1992-1993 and General Biology 105, Embryology 211, Invertebrate Zoology 212, General Biology for Education 233, Parasitology 312 and Immunology 432 in 1996-1998.
- \* Worked as a TA in Biotechnology lab course (BTEC 620) Graduate student in three consecutive years (2004-2006).
- \* Supervised and instructed four graduates during achieving their Master in Biotechnology (Applied) and assisted another two PhD students with their Fish parasitology projects and molecular data analyses
- \* Workplace Hazardous Materials Information System (WHMIS) Training for Laboratory Personnel, McGill University (2004 & 2009).
- \* The Occupational Health Program (OHP) for Animal Related Activities for dealing with rodents: rabbits and mice, McGill University (2002, 2007 & 2010).
- \* Hands-on Mouse methods workshop, McGill University (2008)
- \* Advanced level theory course on animal use, McGill University (2008).

## Technical Expertise

- \* Expert in morphological identification of invertebrate parasites including *Schistosoma mansoni* (trematoda), *Echinococcus granulosus*, *Taenia pisiformis*, *T. hydatigena*, *T. ovis*, *T. multiceps*, *T. taeniaeformis*, *Dipylidium caninum*, *Joyeuxiella*, *Diplopylidium* and *Mesocestoides corti* (cestodes), *Toxascaris*, *Toxocara canis*, *Uncinaria stenocephala*, *Oxynema* and *Protospirura* (nematodes) and *Macracanthorhynchus* (an acanthocephalan).
- \* Construction of various transgenic invertebrate free-living soil worm *Caenorhabditis elegans* lines via gene coated gold microparticle bombardment method.
- \* Culture and maintenance of *C. elegans* including transferring, synchronization and freezing.
- \* Heterologous protein expression of human genes in the transgenic worm strain.
- \* Specimen collection, tissue sampling, DNA processing/sequencing, molecular data managing and motif signature construction for quick identification of cryptic fish nematodes using mitochondrial Cytochrome c Oxidase 1 gene (COI) , nuclear rDNA and other molecular marker such as internal transcribed spacers (ITS).
- \* DNA Barcoding analysis of cryptic helminth species identification in Canadian fish hosts.
- \* DNA/Protein alignment, Phylogenetic tree construction (Maximum Likelihood, Bayesian or Neighbor-Joining) and genetic distance estimation.
- \* Cloned/expressed and full characterized three orphan GPCR genes of the invertebrate worm parasite *Schistosoma mansoni*.
- \* Experienced the heterologous expression of GPCRs (mammalian and yeast) and utilized the pheromone mediated yeast GPCR assay to deorphanize two *S. mansoni* orphan GPCRs. Furthermore, I studied the pharmacological profiles of the deorphanized receptors in yeast.
- \* *In vitro* and *in vivo* cultures of the invertebrate parasitic trematode *Schistosoma mansoni*. *In vivo* culture involves the cercarial stage of *S. mansoni* in mice to attain the adult stage. *In vitro* culture including mechanical and chemical transformation of cercarial stage to schistosomules before culturing them in RPMI1640 medium.
- \* *In vitro* culturing of several mammalian cell lines (e.g. HEK, Cos 7) or yeast,
- \* Life maintenance of invertebrate freshwater snail *Biomphalaria glabrata*, the intermediate host of human bloodfluke *Schistosoma mansoni*, for cercaria shedding.
- \* Molecular modeling and simulation (GPCR-ligand, Tubulin-Denzimidazole drugs molecular docking and dynamic simulation).
- \* Protein biochemistry (Gel filtration, electrophoresis, Western blot and Immunoprecipitation).
- \* Thoroughly familiar with routine lab equipment (ELISA readers, GelDoc, Spectrometry/Nanometers, cell counters and various thermal cyclers (Conventional and Real time PCR cyclers).
- \* **Confocal microscopy, Immunofluorescence Assay (IFA)** and ELISA.
- \* RNA interference (Cell based and whole animal parasite (siRNA)).
- \* Computer literacy: able to use general PC software such as MS office (Word, Excel, Powerpoint, Access and OneNote); Molecular biology and Bioinformatics software

such as MEGA, Geneious, CLC bio, Protein-ligand docking/simulation and drug discovery software (e.g. MOE & Accelrys Discovery Studio) and the statistical software GraphPad Prism.

## Publications and articles in preparation

**El-Shehabi, F.**, Mansour, B., Bayoumi, W. A., El Bialy, S. A., Elmorsy, M.A., Eisa, H. A., Taman, A. (2021). Homology modelling, Molecular dynamics simulation and Docking evaluation of  $\beta$ -tubulin of *Schistosoma mansoni*. *Biophysical Chemistry* 278 (106660): 1-13

Taman, A., El-Bardicy, S., Tadros, M., Ayoub, M., Mansour, B., **El-Shehabi, F.**, El-Beshbishi S.N. (2020). In vitro efficacy of new synthetic benzimidazole-related compounds against *Schistosoma mansoni* adult worms. *Asian Pacific Journal of Tropical Medicine* 13 (12): 566-572

**El-Shehabi, F.**, Marcogliese, D., Oliveira, K. (2018). New North American paratenic hosts of *Anguillicola crassus* and molecularly-inferred source of invasion. *Aquatic Invasions* 13 (2): 231-246

McLaughlin, D., **El-Shehabi, F.**, Marcogliese, D. The diversity of five *Contracaecum* species in Canadian Double-Crested Cormorant (*Phalacrocorax auritus*) and White Pelicans, (*Pelecanus erythrorhynchus*) (In preparation)

Marcogliese, D., Gendron, A., Forest, J., Li, W., Boyce, K., **El-Shehabi, F.**, Drake, D., Mandrak, N., Sherry, J., McLaughlin, J., (2016). Range expansion and molecular confirmation of the Asian fish tapeworm in the lower Great Lakes and St. Lawrence River with notes on infections in baitfish. *J. Great Lakes Res* 42(4).

**El-Shehabi, F.**, Taman A., Moali, L.S., El-Sakkary N., Ribeiro P, (2012). A Novel G protein-coupled receptor of *Schistosoma mansoni* (SmGPR-3) is activated by dopamine and is widely expressed in the nervous system. *PLoS Negl Trop Dis* 6(2): e1523.

**El-Shehabi, F.**, Ribeiro, P., (2010). Histamine signalling in *Schistosoma mansoni*: Immunolocalization and characterization of a new histamine receptor SmGPR-2. *Int. J. Parasitol* 40, 1395-1406

Kimber, M.J., Sayegh, L., **El-Shehabi, F.**, Song, C., Zamanian, M., Woods, D.J., Day, T.A., Ribeiro, P., (2009). Identification of an *Ascaris* G protein-coupled acetylcholine receptor with atypical muscarinic pharmacology. *Int. J. Parasitol.* 39, 1215-1222.

**El-Shehabi, F.**, Vermeire, J.J., Yoshino, T.P., Ribeiro, P., (2009). Developmental expression analysis and immunolocalization of a biogenic amine receptor in *Schistosoma mansoni*. *Exp Parasitol* 122, 17-27.

Nabhan, J.F., **EI-Shehabi, F.**, Patocka, N., Ribeiro, P., **(2007)**. The 26S proteasome in *Schistosoma mansoni*: bioinformatics analysis, developmental expression, and RNA interference (RNAi) studies. *Exp Parasitol* 117, 337-347.

Ribeiro, P., **EI-Shehabi, F.**, Patocka, N., **(2005)**. Classical transmitters and their receptors in flatworms. *Parasitology* 131 Suppl, S19-40.

**EI-Shehabi, F.S.**, Kamhawi, S.A., Schantz, P.M., Craig, P.S., Abdel-Hafez, S.K., **(2000)**. Diagnosis of canine echinococcosis: comparison of coproantigen detection with necropsy in stray dogs and red foxes from northern Jordan. *Parasite* 7, 83-90.

**EI-Shehabi, F.S.**, Abdel-Hafez, S.K., Kamhawi, S.A., **(1999)**. Prevalence of intestinal helminths of dogs and foxes from Jordan. *Parasitol Res* 85, 928-934.

## Conference Presentations & Posters

Gendron, A., Paquet, A., Marcogliese, D., **EI-Shehabi, F.**, Locke, S. **(2016)** Potential influence of the invasive round goby (*Neogobius melanostomus*) on the recruitment and dispersal of native mussels

Marcogliese D., **EI-Shehabi F.**, Boyce K., McClelland G. and Abbott C. **(2016)** A molecular survey of anisakid nematodes from marine fishes in Canadian waters. The 91st Annual Meeting of the American Society of Parasitologists. Edmonton, Alberta.

**EI-Shehabi F.** and Ribeiro P. **(2008)** De-orphanization of two novel *Schistosoma mansoni* G-protein coupled receptors (GPCRs), using a yeast expression system. American Society of Tropical Medicine and Hygiene (57th Annual Meeting), New Orleans, Louisiana, USA. *Amer. J. Trop. Med. Hyg.* 79 (6): 219-219. (oral presentation).

**EI-Shehabi F.** and Ribeiro P. **(2008)** De-orphanization of novel *Schistosoma mansoni* GPCRs, using a yeast expression system. 8th Annual Molecular Parasitology Symposium, Montreal, Qc, Canada. (oral presentation)

**EI-Shehabi F.**, Dernovici S. and Ribeiro P. **(2007)** Characterization of *Schistosoma mansoni* biogenic amine G-protein coupled receptors. 46th Annual Meeting of the Canadian Society of Zoologists, Montreal, Qc, Canada. (poster).

**EI-Shehabi F.** and Ribeiro P. **(2006)** Characterization of Histamine responsive receptor (SmGPCR) of *Schistosoma mansoni*. 45th Annual Meeting of the Canadian Society of Zoologists, Edmonton, Canada. (oral presentation).

**EI-Shehabi F.** and Ribeiro P. **(2005)** Characterization of a biogenic amine G-protein coupled receptor (SmGPCR) in *Schistosoma mansoni* (digenea, trematoda). *Molecular Helminthology: An integrated approach*, Keystone Symposium, Copper Mountain, Colorado, USA (poster).

**El-Shehabi F.** and Ribeiro P. (2004) Characterization of histamine responsive receptor in *S. mansoni*. 4th Annual Parasitology Symposium, Institute Armand Frappier, Laval, Quebec (poster).

**El-Shehabi F.** and Ribeiro P. (2004) Characterization of histamine responsive receptor in *S. mansoni*. 3rd Annual Québec Molecular Parasitology Symposium, Institute of Parasitology of McGill University, Macdonald Campus (poster).

## References

Dr. ~~Paula Ribeiro~~ (Associate Professor) ~~PASSED AWAY~~  
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Dr. **Sami K Abdel-Hafez** (Professor)  
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