



Mohammed B.M EL-Mahdi  
**BSc & MSc (Egypt); MSc (Oxford); PhD (London)**  
**South Valley University, Qena, EGYPT**  
002-01093166706

### **QUALIFICATIONS:**

- 2000/01-2005** Ph D. Molecular Genetics (Gene expression and genomic organisation of CDK105, a candidate gene for diabetic nephropathy), Division of Life Sciences, **King's College London, the University of London**
- 1997-1999** MSc. Molecular Biology (Transcriptional mapping in the human chromosome 6 band 6p23), Department of Biochemistry Immunochemistry Unit, the **University of Oxford;**
- 1989-1992** MSc. Biology, Zoology  
**Faculty of Science 'Qena', the University of Assiut, Egypt**
- 1982-1986** BSc. (Hons, 1<sup>st</sup> class) Biology, Zoology  
**Faculty of Science 'Qena', the University of Assiut, Egypt.**

### **PROFESSIONAL APPOINTEMENTS**

#### **Faculty of Science, Zoology Department, South Valley University**

**November 2006 --- Present-** Academic staff and Lecturer in molecular Genetics, involved duties in lecturing of molecular genetics, molecular and cellular biology, behavioural and evolution genetics. In addition, doing research regarding the genetic aspects of diabetes & its complications, also other common genetic disease in the area and supervision for postgraduate students

#### **School of Biomedical and Health Sciences, King's College London**

**April-October (2006)-** Visiting Research Associate (full-time), Laboratory of Professor Livio Malluci, Research regarding the cell death program (molecular pathways involved in cell cycle arrest/apoptosis)

#### **Department of Education and Professional studies, Kings College London**

**Academic Year (2002/203)** Technical Assistance in the department involved duties in biology laboratories including technical and administrative support and maintains teaching and research facilities as required by the Technical Services Manager

#### **the University of Assiut, Zoology Department, Faculty of Science, Qena, Egypt**

**1992-1997.** Assistant lecturer, Doing research and teaching practical courses for both undergrads and postgrads

#### **the University of Assiut, Zoology Department, Faculty of Science, Qena, Egypt**

**1987-1992** Demonstrator, zoological laboratory, assistance for undergraduates and postgrads

## **RESEARCH EXPERIENCES AND KEY SKILLS**

**Visiting Research Associate (full-time):** Research regarding the cell death program focusing on the molecular pathways involved in cell cycle arrest/apoptosis.

**Ph.D research (Molecular Genetics):** I was interested in identification of genes and their products involved in DN which may be of value in treating the condition as genes showing differential expression in the kidneys of Goto-Kakizaki (GK) non-obese diabetic rats were being characterised.

**MSc research (Biological Sciences, Molecular Biology):** The MSc project involved the transcriptional mapping in human chromosome band 6p23. The 6p23 is a Giemsa-negative band, generally shown to have a higher gene density as several clones were isolated, sequenced by Dye terminator chemistry and tested for identity using restriction digest analysis.

**Demonstrator & Assistant lecturer positions.** I did contribute as researcher in biological and zoological studies with a number of publications

**Molecular: Nucleic acid-related techniques;** cDNA library construction and screening, DNA sequencing/genotyping using automated DNA sequencer, DNA cloning and manipulations, Preparation/purification of plasmid and chromosomal DNA, DNA restriction digestion, genomic DNA and RNA extraction/purification, gel electrophoresis, Southern and Northern Blotting, Nucleic Acid labelling and detection, *In situ* hybridization, *In vitro* amplification of DNA by Polymerase Chain Reaction (PCR), real time RT-PCR and various applications of PCR.

**Cellular; Recombinant DNA techniques;** molecular cloning, Cell culture and viability, proliferation assay, transfection (electroporation, calcium phosphate, and lipo transfection), and expression/purification of recombinant genes. Immunoprecipitation, and immunoblotting assays. Immunocytochemistry, and fluorescence imaging

**Genome analysis:** Literature's interpreting to identify key genes variation and signaling pathways that may be involved in disease, positional cloning, mapping of cDNA clones by hybridisation blotting assays and extensive experience in bioinformatics.

**Histology, Anatomy and Physiology:** Histological and immunohistochemistry-frozen and paraffin embedded section preparation/staining, Confocal, fluorescence and electron microscopy, Comparative anatomy-vertebrate dissecting and comparing, electrophysiology, nutrient physiology, metabolism, and blood samples routine work.

**Laboratory related-duties:** Maintenance and calibration of instruments as required. Safety aspects as per COSHH regulations, waste disposal and safety rules for carcinogenic and mutagenic chemicals.

**Work-related and communication skills:** Designing research projects (Suitable for MSc students and postdocs, writing proposals, data analysis, and reporting. Work efficiently and innovatory closely as a team. Responsible and honest towards work. Tend to come up with new ideas.

## **COMPUTER SKILLS**

- Literate with WINDOWS operating systems, MS Packages (Word, Power Point, Excel)
- Statistical packages (MINITAB and SPSS)
- Graphic software ( e.g Corel Draw, Adobe photoshop).

- Literate with the Macintosh, Unix/Sun (using Exceed, the PC X software as a Unix emulator) workstations.

## **BIOINFORMATIC EXPERIENCE**

- Literate with the GCG (Wisconsin Package):-Unix/Sun workstations.
- Similarity searches of DNA and amino acids sequences, translation of DNA sequence (Translate, and EMBOSS Transeq), generating the multiple alignments (Clustal W, and DIALIGN), GeneBank submitting tool (blanket), restriction enzyme mapping and PCR primer design softwares.
- Analysis 'query amino acid sequences' for motifs and domains (ScanProsite, Motif Scan), potential cleavage sites, computation of pI and Mw, and protein post-translational modifications (Peptide Cutter, Compute pI/Mw and NetPhos).
- Topology prediction including hydropathicity of protein sequences (Kyte-Doolittle Hydropathy), 2<sup>nd</sup> structures (ProtParam, COILS), molecular visualisation (RasMol V2.6) and phylogenic analysis of protein sequences (PHYLIP software).
- Significant experience with gene identification, genomics and promoter analyses: GRAIL, GENSCAN, FGENES, NetGene2 (splice site prediction), GeneBuilder (Gene Structure Prediction System), the BLAT program, TRANSFAC database searching, MatInspector V2.2 promoter analysis, and ModelInspector (promoter module).
- Experienced in the analysis using molecular biology suites {ExpASy proteomics tools, EMBOSS (European Molecular Biology Suite), Ensembl, Genome Browser, the Sanger institute, Genomatix suite, and Pôle Bio-Informatique Lyonnais.

## **TEACHING**

Currently, I am lecturing the major courses in molecular genetics, molecular and cellular biology, behavioural and evolution genetics, comparative anatomy (teaching language; Arabic) for biology student of Educational College. In addition, I'm drafting some work for publication.

During my Ph.D studies, I was participating in the departmental teaching activities, my duties was to demonstrate to undergraduate students (laboratory classes).

Assistant lecturer (1992-1997): I had the opportunity to teach the practical courses for both undergrads and postgrads: Courses include medical physiology, histology, anatomy, comparative anatomy, embryology immunohistochemistry, cellular biology and genetics.

Demonstrator (1987-1992): I was assistance for undergraduates and postgrads taking part in student teaching activities and practical classes.

## **SELECTED PUBLICATIONS:**

1-Hamad, N. E. F., Aly, M. Z. Y. and **El-Mahdi, M. B. M.** (1991): Laboratory studies on certain aquatic insect predators in Qena *Bull. Fac. Sci., Assiut Univ.* 20 (1-E) :31-38.

2-Aly, M. Z. Y., Hamad, N. E. F. and **El-Mahdi, M.B.M** (1992): General survey and seasonal distribution of aquatic insects in Qena Governorate, Egypt *Bull. Fac. Sci., Assiut Univ.*, 21 (2- E): 56-75.

3-Aly, M. Z. Y., Hamad, N. E. F and **El-Mahdi, M.B.M** (1993): Seasonal abundance and effect of chemo-physical factors on immature stages of order Odonata in Qena *Ger. Soc. Zool.* 11(D) : 77-89.

4-Aly, M. Z. Y., Hamad, N. E. F. and **EL-Mahdi, M.B.M** (1995): Seasonal abundance of some aquatic insects of order Coleoptera and effect of certain physical factors on their distribution in Qena, Egypt. *Bull. Fac. Sci. Qena*, 1(1):59-72.

5-A novel nuclear protein is up regulated in GK rats, non-obese diabetic rats. **EL-Mahdi M.B.M.** (In preparation)

6-Isolation and full length characterisation of a novel gene from HEK cells. **EL-Mahdi M.B.M** (In preparation).

## **SELECTED CONFERENCES AND SYMPOSIUMS**

### **Attending as Presenter:**

**March 2002** Diabetes UK, Annual Professional Conference, Birmingham, England. Sequence analysis and mRNA expression of CDK105, a novel candidate gene for diabetic nephropathy. **EL-Mahdi M.B.M, Zaidi QA and Malik AN**

**January 2001** Annual Postgraduate Research Symposium, King's College London, London, UK. The role of CDK105: a novel gene in diabetic nephropathy. **EL-Mahdi M.B.M, and Malik A.**

**April, 1998** Postgraduate Symposium, Green College, the University of Oxford. Oxford, UK. Transcriptional mapping in the human chromosome 6 band 6p23. **EL-Mahdi M.B.M and Campbell R.D**

### **Attending for Training:**

**June, 1999** Fourth Chromosome 6 workshop, the Sanger Centre, Wellcome Trust  
Genome Campus, Hinxton, Cambridge, UK.

**April, 1994** 5<sup>th</sup> International Conference of the Egyptian German Society  
of Zoology, South Valley University, Egypt.

## **SELECTED COURSES, SIMINARS, AND WORKSHOPS**

**.2003** DNA chip and microarray technology, Stratagene Europe, London

**2004** Isolation of biological material, TLC and HPLC, Pharmacy Department,  
Kings College London, London.

**2001** Advanced bioinformatic and sequence analysis tools, Division of Life Sciences, Kings college  
London, London.

**1998** Radiology and work with radioactive materials and safety, the University of Oxford, Oxford

**1998** Bioinformatic, GCG Packages, sequence analysis tools the university of Oxford, Oxford

**1998** Writing a scientific paper, the university of Oxford, Oxford

**1995** the Electron microscope: the University of Assiut, Egypt

## **AWARDS AND SCHOLARSHIPS:**

**2000/2001** South Valley University (Egypt) Scholarship to King's College London,

- 1998** International student representative, Green College, Oxford, (MCR committee member)
- 1997** South Valley University (Egypt) Scholarship to the University of Oxford, UK.
- 1986** Assiut Unveristy (Egypt) award for Honours degree (BSc., Hons) achievement.
- 1984** Assiut Unveristy (Egypt) award for 1<sup>st</sup> achievement student, University Representative (German-Egyptian Universities, Munich, Germany).

## **Referees**

### **Dr Ram Abuknesha, Senior lecturer**

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Pharmaceutical Sciences,  
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### **Professor Ahmed Sayed Moustafa**

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