**CURRICULUM VITAE**

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| **Name** | **Tarek Hamdy Abd-Elhamid** |
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**PERSONAL DATA:**

**EDUCATION:**

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| University of Mississippi Medical Center | Ph.D degree in Anatomy  Defended dissertation in the 4th of February 2014  Title of the dissertation: (**Temporal expression of hLAMP-1 and BMP-2 during heart development in the chick**)  Supervisor: Allan R. Sinning, Ph.D | 2014 |
| University of Mississippi Medical Center | M.Sc. Biomedical sciences | 2009 |
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| Assiut University, Egypt | M.Sc. Histology | 2003 |
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| Assiut University, Egypt | M.B.B.CH Degree in Medicine and Surgery | 1997 |

**ACADEMIC APPOINTMENT:**

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| December 2014- | Lecturer, Department of Histology, Faculty of Medicine, Assuit University, Assuit Egypt. |
| 2014 | Postdoctoral Research fellow in Dr. Angela R. Subauste laboratory. The project name is **Role of lipid Intermediate in the limited Human Adipose Tissue Expandability Associated with Insulin Resistance**. |
| 2007-2014 | Graduate student in the Department of Neurobiology and Anatomical Sciences, University of Mississippi Medical Center, Jackson, MS, USA. |
| 2003- 2007 | Assistant Lecturer in the Histology Department, Faculty of Medicine, Assiut University, Assiut, Egypt. |
| 1999-2003 | Instructor and Research Assistant in the Histology Department, Faculty of Medicine, Assiut University, Assiut, Egypt |

**PUBLICATIONS:**

**Articles:**

**Abd-Elhamid TH**., Conway ML. and Sinning AR. Temporal expression pattern of the particulate matrix during chick heart development. (In preparation).

**Abd-Elhamid TH**., Conway ML. and Sinning AR. (2013) The hLAMP-1-positive Particulate matrix involved in cardiac mesenchyme formation in the chick does not include BMP-2. Cells Tissues Organs. 198: 338-348. (DOI: 10.1159/000357614).

**Abd-Elhamid TH**. (2003) Post-natal development of Peyer’s patches in Male albino rats. M.Sc. thesis. Faculty of Medicine, Assiut University, Assiut, Egypt.

**Abstracts:**

**Abd-Elhamid TH**., Conway ML. and Sinning AR. (2013) Chick embryo particulate matrix involved in cardiac mesenchyme formation does not include BMP-2. FASEB J. 27:529.4

**Abd-Elhamid TH.**, Conway ML. and Sinning AR. (2012) Is BMP-2 a component of the particulate matrix that is responsible for epithelial/mesenchymal transformation during heart development. FASEB J. 26:525.2

**Abd-Elhamid TH**., Conway ML. and Sinning AR. (2011) Evaluation of the effect of miR hLAMP-1 on hLAMP-1 expression in chick embryo myocardial cultures. FASEB J. 25: 683.

**TEACHING EXPERIENCE:**

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| 2014- | Faculty of Medicine  Assiut University, Assiut, Egypt.  Faculty of medicine, Aswan University. Aswan, Egypt | Teaching Histology to medical students |
| 2009-2010 | Department of Neurobiology and Anatomical Sciences, University of Mississippi Medical Center, Jackson, MS, USA | Teaching Assistant, Human Histology  School of Medicine |
| 2003-2007 | Faculty of Medicine  Assiut University, Assiut, Egypt | Assistant Lecturer, Human Histology  School of Medicine and Pharmacy |
| 1999-2003 | Faculty of Medicine  Assiut University, Assiut, Egypt | Instructor, Human Histology, School of Medicine and Pharmacy |

**RESEARCH**

I was working in Dr. Allan R. Sinning’s laboratory in the department of Neurobiology and Anatomical Sciences, University of Mississippi Medical Center in Jackson, MS. In this lab, we are interested in studying early heart development in chick embryos. At stage 5, paired heart forming regions are situated anteriorly in the lateral plate mesoderm. At stages 6 and 7, the lateral plate mesoderm splits into two layers, the somatic and splanchnic mesoderm. The heart-forming regions reside in the splanchnic mesoderm, which migrates toward the ventral midline allowing fusion of the bilateral heart fields, approximately at stage 10, forming the heart tube. At this time, the heart is composed of an inner tube, the endothelium, and an outer tube, the myocardium, which are separated by a layer of extracellular matrix called cardiac jelly. Cardiac jelly expands in two regions, the atrioventricular canal (AVC) and outflow tract (OFT). These expansions are termed the endocardial cushions. These cushions become populated with mesenchymal cells that originate from the transformation of endothelial cells to mesenchymal cells, a process called endothelial mesenchymal transformation (EMT). This process is under the control of the particulate form of extracellular matrix, secreted by the myocardium into the endocardial cushion. The particulate matrix can be detected by anti-hLAMP-1. We had a partial cDNA sequence of hLAMP-1 (the whole molecule is about 7 kb). Our known sequence was 1100 bp at the 3ˋ end. Initially, down-regulation of hLAMP-1 expression was analyzed first, by transfecting cardiomyocytes cultures with anti-sense oligonucleotides using oligofectamine and testing the hLAMP-1 expression using ELISA. Then, miRNA transfection with lipofectamine 2000 was used to downregulate hLAMP-1followed by assessment of hLAMP-1 expression in the myocardial culture using qRT-PCR. Currently, I am testing whether BMP-2 is a part of the chick embryo particulate matrix. It has been shown that the particulate matrix can induce EMT in stage 15-16 chick embryo. Other investigators have shown a role for BMP-2 in this process. Therefore, if this is true, we predict that BMP-2 should be a part of the particulate matrix. We tested this hypothesis through double immunostaining of stage 15-16 chick embryo heart section with anti-hLAMP-1 and anti-BMP-2. Next, I immunoprecipitated the particulate matrix of EDTA heart extract and myocardial conditioned media, both of which are sources for the particulate matrix, using anti-hLAMP-1 and tested the hLAMP-1 bound fraction for the presence of BMP-2 using western blotting. Second, I am studying the temporal expression of hLAMP-1 during chick embryo heart development. Previously, hLAMP-1 expression is detected within the Hensen’s node at stage 4. Later on development, it is detected in the lateral mesoderm anterior to the level of the node with increased expression in the left side during stages 5 to 6. At stage 7, it expression becomes enriched within the left precardiac field and ventral foregut region. Also, in other sets of experiments, hLAMP-1 expression was shown in stage 15-16 AV canal and OT. Since we do not know the expression pattern of hLAMP-1 between stage 8 and stage 14 chick embryo hearts, therefore, it seemed of interest to determine the expression pattern of hLAMP-1 during this time period. To determine hLAMP-1 expression pattern during this time period, we immunostained stage 8-14 chick embryo heart containing sections with anti-hLAMP-1.

**TECHNIQUES:**

Working in this lab made me familiar with the following techniques;

1. Preparation of tissues for histological staining
2. Immunohistochemistry (Paraffin and gelatin embedded tissues).
3. Establishing primary cultures.
4. Working with cell lines.
5. Cloning and Restriction enzyme digest.
6. PCR and agarose gel electrophoresis
7. ELISA
8. SDS-PAGE and western blotting

**MEMBERSHIP:**

American Association of Anatomist

**REFERENCES:**

**Dr Allan R. Sinning**

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