

**STUDY OF SOME ANAGIOGENIC FACTORS FOR UTILIZATION  
IN THE DIAGNOSIS OF BLADDER CANCER ASSOCIATED  
WITH URINARY BILHARZISIS AND/ OR SMOKERS**

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**A thesis Submitted**

**Towards a Doctor of Philosophy Degree**

**In Environmental Science**

**Department of Biological Science**

**Institute of Environmental Studies & Research**

**Ain Shams University**

**2011**

دراسة لبعض العوامل المخلقة للأوعية الدموية لاستخدامها  
في تشخيص سرطان المثانة المصاحب للمصابين بالبلهارسيا  
البولية و/أو المدخنين

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للحصول على درجة دكتوراة الفلسفة في العلوم البيئية

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أجيزت الرسالة بتاريخ 2011/ /

موافقة الجامعة

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2011/ /

2011/ /

## **Abstract**

**Background** : HIF-1 $\alpha$  has emerged as a useful target for cancer therapy few publications advertising the hypoxic inducing factor -1 $\alpha$  (HIF-1 $\alpha$ ) .

A variety of markers for identification of microvessels in histological sections are available, CD34 is one of the most commonly used factors .Our study was designed to investigate HIF-1 $\alpha$  in urine using Enzyme-linked immunosorbent assay (ELISA) technique and CD34 in tumor tissues by immunohistochemistry method. **Methods**: Samples were collected from thirty nine malignant patients, fifteen benign patients, and fifteen as controls. Urine samples, pathological samples from parafine embedded tissues were included. HIF-1 $\alpha$  was detected using ELISA in urine pellete and CD34 was detected in immunohistochemistry in parafine sections. **Results**: There was a statistically significant difference between benign and malignant groups regarding HIF-1 $\alpha$  level but there was no significant difference between stages or grades of malignant samples as regard HIF-1 $\alpha$  activity and CD34 level. **Conclusion**: HIF-1 $\alpha$  is expressed in all histopathological types of bladder cancer and Cd34 was expressed in different tumor tissues.

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*Before all I would like to express my deep thanks to **GOD**, without his great blessings, I have never accomplished this work,*

*I would like to express my deep obligation to **Dr. Ahmed Mohamed Salem**. Professor of Biochemistry Ain Shams University Faculty of Science. For his valuable and generous help, faithful supervision and great cooperation. I would like to take this opportunity to thank him for his continuous encouragement and support throughout the whole work,*

*It is a great pleasure and honor to present my deepest gratitude to **Dr. Abd el. Hamid Yousuf** Professor of Urology Ain Shams University Faculty of Medicine for accepting the supervision of my work and for the helpful guidance, directions and encouragements throughout my working period.*

*Indeed I would like to express my deepest thanks to **Dr. Hala Ibrahim Awadallah** Ass.Prof. of medical Science Institute of Environmental Studies and Research Ain Shams University for the fruitful suggestions and sincere advice which have been the main factors to complete this work,*

*It is a great pleasure to express my sincere gratitude and highest appreciation to **Dr. Soheir Bader El.Dien** Asst. Prof. of Clinical and Biochemical Pathology Ain Shams University under her guidance and constant supervision this work has been prepared.*



*I would like to express my sincere gratitude and deepest appreciation to **Dr. Nahla Mohamed Awad** Ass. Prof. of Pathology Early Cancer Detection Unit .Pathology department, Ain Shams University Hospitals, she spared no effort in helping me throughout this work,*

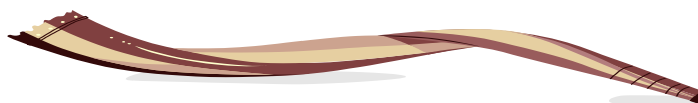
*My deepest appreciation is to **Dr. Sanaa Eissa** Professor of medical Biochemistry and molecular biology and head of Oncology Unit Faculty of Medicine Ain Shams University for her great support and valuable advice throughout the work,*

*I am too grateful to **Dr. Abo Zeid Awad Mansour**, Prof. of Urology and head Institute of Urology for his generous help and unlimited support in collection of samples.*

*I would like also to express my sincere gratitude and appreciation to **Dr. Yazid Hodhod** Prof. of Urology and head of Palestine Hospital and **Dr. Nema Abo Medien**, head of Palestine Hospital, Palastine Hospital and to all Palestine Hospital family for there helpful guidance, valuable advice, meticulous care, and generous help in this work,*

*I would be remiss if I failed to acknowledge My Mother, Father, Sister and my Daughter, for their tolerance and their emotional support pushing me to finish this work, many thanks.*

*Amany El Sayed Bakr*



## LIST OF ABBREVIATIONS

AA	: Aromatic amines
ABP	: Aminobiphenyl
AIG1	: Androgen induced gene-1
AIM2	: Interferon inducible metallo protein-2
ANXA1	: Annexin A1
aFGF	: Fibroblast growth factors: acidic
BC	: Bladder cancer
bFGF	: Basic fibroblast growth factors
IM2	: Interferon inducible metallo protein-2
CA	: Carbonic anhydrases
G-CSF	: Granulocyte colony- stimulating factor
CASP1	: Caspase 1, apoptosis related cysteine protease
CCNE	: Human mRNA for cyclin-E binding protein1
CCNT2	: Cyclin T2
CD34	: Cluster of differentiation 34.
CDC2	: Cell cycle control gene CDC2.
CDKN1	: Cyclin dependent kinase inhibitor1
CFLAR	: CASP8 and FADD-like apoptosis regulator
CLDN7	: Claudin 7
Cox	: Cyclooxygenase
CT	: Computed tomography
CTGF	: Connective tissue growth factor

## LIST OF ABBREVIATIONS (CONT...)

CTSD	:	CathepsinD
CYP	:	Cytochrome P450
CYR61	:	Cysteini-rich angiogenic inducer 61
DPA1	:	Histocompatibility complex, class II, DP alpha 1
DRB3	:	Histocompatibility complex, class 11, DR beta-3
ECS	:	Endothelial cells.
EXU	:	Excretory Urography
ETS	:	E-twenty six family
FER	:	Human tyrosine kinase (FER) mRNA
GLUT1	:	Glucose transporter-1 protein
GST	:	Glutathion S- transferase
HGF	:	Hepatocyte growth factor
HIF-1 $\alpha$	:	Hypoxia inducible factor -1 alpha.
HLA-1	:	Major histocompatibility complex, class II, DP beta 1
HPV	:	Human papilloma virus
HSPG2	:	Heparan sulfate proteoglycan 2
IFNGR1	:	Interferon gamma receptor1
IGL	:	Immunoglobulin lambda locus
IL-8	:	Interleukin-8
IL13	:	Interleukin-13
IL4R	:	Interleukin-4 receptor

## LIST OF ABBREVIATIONS (CONT...)

Igfbp5	:	Insulin-like growth factor binding protein 5
IFI30	:	Interferon, gamma-inducible protein 30
ISUP	:	The International Society of Urological Pathology
ITGA3	:	Integrin alpha 3
ITGA5	:	Integrin, alpha-5
ITGAE	:	Integrin alpha E
1RF1	:	Interferon regulatory factor 1
KRT4	:	Cytokeratin 4(408AA)
LAMA3	:	Laminin alpha 3
MMP12	:	Matrix metalloproteinase- 1 2
MRI	:	Magnetic resonance
MVD	:	Microvessel density
NAT	:	N acetylamine S-transferase.
NO	:	Nitric oxide
8-OHdG	:	8-hydroxy-2-deoxyguanosine-
PAHS	:	Polycyclic aromatic hydrocarbons.
PDCD2	:	Programmed cell death2
PD-ECGF	:	Platelet-derived endothelial cell growth factor .
PDGFR	:	Platelet-derived growth factor receptor
PDGF-BB	:	Platelet-derived growth factor-BB

## LIST OF ABBREVIATIONS (CONT...)

PTN	:	Plerotrophin
PRG1	:	Proteoglycan 1 secretory granule
Rb	:	Retinoblastoma proteins
RNH	:	Ribonuclease/angiogenin inhibitor
ROS	:	Reactive oxygen species
S100P	:	S100 calcium binding protein
SF	:	Scatter factor
SCC	:	Squamous cell carcinoma
ST14	:	Suppression of tumorigenicity14
STMN1	:	Stathmin 1/oncoprotein 18
TGF-alpha	:	Transforming growth factor-alpha
TCC	:	Transitional cell carcinoma
TCFL1	:	Transcription factor-like- 1
TJP2	:	Tight junction protein 2
TNM	:	Tumor, lymph nodes, and metastasis
TP53	:	Wild type P53 activated fragment1
TUS	:	Transurethral Ultrasound
TNFalpha	:	Tumor necrosis factor-alpha
UC	:	Urethelial carcinoma.
UGB7	:	Integrine beta-7
VEGF	:	Vascular endothelial growth factor.

## **LIST OF ABBREVIATIONS (CONT...)**

VEGFC	:	Vascular endothelial growth factor C
VPF	:	Vascular permeability factor
WHO	:	World Health Organization
WTAP	:	Wilms tumor1 associated protein
ZnF173	:	Zinc finger protein173

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