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Measurement of Infiltrated CD_4^+ / CD_8^+ Ratio and Cyclin D1 Level and Ploidy Status and S-phase Fraction in Colorectal Cancer Patients

Presented by

Noha Ibrahim Mohamed

B.SC., Zoology /Chemistry

**A thesis submitted
To**

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Faculty of Science
Cairo University
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APPROVAL SHEET FOR SUBMISSION

Thesis Title:

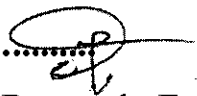
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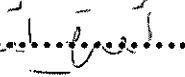
Noha Ibrahim Mohamed

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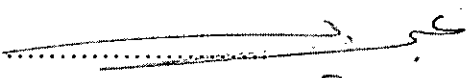
1- Prof. Dr. Maged Mostafa El-Sherbiny


The head of the Ministry of Scientific Research, Egypt
Assistant Minister for scientific Research in Egypt
Professor of Immunology, Zoology Department,
Faculty of Science, Cairo University, Egypt

2-Prof. Dr. Amira Raafat


Professor of Pathology, Pathology Department,
National Cancer Institute, Cairo University, Egypt

3- Prof. Dr. Abeer Ahmed Bahnassy


Professor of Pathology, Pathology Department,
National Cancer Institute, Cairo University, Egypt.

**Chairman of Zoology Department
Faculty of Science,
Cairo University
Prof.Dr. Abd El-Rahman Bashtar**

TO WHOM IT MAY CONCERN

This is to certify that **Noha Ibrahim Mohamed**, has attended and passed successfully the following Postgraduate Courses as a Partial Fulfillment of the requirements of the degree of Master of Science, Zoology (**Immunology & Parasitology, June 2008**).

- 1- Immunochemistry (1).
- 2- Immunochemistry (2).
- 3- Immunodiagnosis.
- 4- Biochemistry of Parasites.
- 5- Advanced Immunity (1).
- 6- Advanced Immunity (2).
- 7- Immunoparasitology.
- 8- Electronmicroscope.
- 9- Nematology.
- 10- Structural Function of Parasites.
- 11- Phylogeny of Invertebrate
- 12- Parasitology (1).
- 13- Parasitology (2).
- 14- Fine Structure of Protozoa.
- 15- Applied Immunity.
- 16- Biostatistics.
- 17- Comparative and Advanced Immunity.
- 18- Molecular Biology.
- 19- German Language.
- 20- Parasites diagnosis.
- 21- Computer Science.

This Certificate is issued at her own request.

Date of Birth: 4/11/1983

Place of Birth: Giza

Chairman of Zoology Department
Faculty of Science,
Cairo University
Prof.Dr. Abd El-Rahman Bashtar

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ABSTRACT

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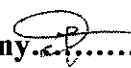
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In this study we measured (infiltrated CD_4^+ , CD_8^+ and their ratio, cyclin D1 expression level, ploidy status and S-phase fraction) in Egyptian colorectal cancer (CRC) patients and their correlation with clinicopathological parameter (type, grade, size of tumor and lymph node metastasis) to assess their role in CRC development and progression of CRC in Egypt. Forty four specimen of CRC cases were collected from National Cancer Institute (NCI), Cairo University. Ploidy status and SPF were determined by Flow cytometry while the expression levels of cyclin D1, CD_4^+ and CD_8^+ were assessed by immunohistochemistry (IHC) using tissue microarray assay (TMA). Results: cyclin D1 was expressed in (84.1%), CD_4^+ (77.2%), CD_8^+ (79%), (25%) of cases were aneuploid, (25%) have high SPF. A significant relation was found between infiltrating CD_4^+ and lymph nodes number, infiltrating CD_4^+ and site of tumor, infiltrating CD_4^+ and the size of tumor, cyclin D1 expression level and stage of tumor, cyclin D1 and type of tumor, S-phase fraction and ploidy status (p -value < 0.05). But more samples are needed to confirm those assumptions.

Key words: Colorectal cancer, CD_4^+/CD_8^+ Ratio, Cyclin D1, Ploidy status, S-phase fraction.

Supervisors:

1. Prof. Dr. Maged Mostafa ElSherbiny.....

2. Prof. Dr. Amira Raafat.....

3. Prof. Dr. Abeer Ahmed Bahnassy.....

Chairman of Zoology Department
Faculty of Science,
Cairo University
Prof.Dr. Abd El Rahman Bashtar

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List of Abbreviations

a.a	Amino Acid
Ab	Antibody
Ag	Antigen
AJCC	American Joint Committee on Cancer
APCs	Antigen Presenting Cells
ARK5	AMP-Activated Protein Kinase Related kinase
B-cells	Bone Marrow Derived Cells.
C.V	Coefficient of Variance
CD3	CD3-Associated Signal Transduction
CD4+	Helper-T Cells
CD8+	Cytotoxic T-Lymphocyte
Cdk	Cyclin-Dependent Kinases
CEA	Carcinoembryonic Antigen
CEN	Chicken Erythrocyte Nuclei
cFLIP	FLICE-Like Inhibitory Protein
CMI	Cell Mediated Immunity
CRA	Colorectal Adenoma
CRC	Colorectal Cancer
CTL	Cytotoxic T-Lymphocyte
DCBE	Double Contrast Barium Enema
DCs	Dendritic Cells
Dist. H₂O	Distilled Water
DNA	Deoxyribonucleic Acid
DRE	Digital Rectal Exam
ECM	Extracellular Matrix
FAP	Familial Adenomatous Polyposis

FAP	Familial Adenomatous Polyposis
FAP-1	Fas-Associated Phosphatase-1
Fas-L	Fas-Ligand
Fas-R	Fas-Receptor
FCM	Flow Cytometric Studies
FSC	Forward-Angle Scatter
G0	Rest Phase in Cell Cycle
G1	Gap 1 Phase
G2	Gap 2 Phase
GALT	Gut-Associated Lymphoid Tissue
GIT	Gastro-Intestinal Tract
gm	Gram
h	Hour
H&E	Hematoxyline and Eosine
HEV	High Endothelium Venules
HNPCC	Hereditary non-Polyposis
Ig	Immunoglobulines
IHC	Immunohistochemistry
IL-10	Interlukin-10
IL-2	Interlukin-2
IP	Propidium Iodide
LF	Lymph Follicles
LN	Lymph Node
M	Mitosis Phase
M m	Micro-Mole
MALT	Mucosal-Associated Lymphoid Tissue
MHC-I	Class II Major Histocompatibility Complex

MHC-II	Class I Major Histocompetiability Complex
min	Minute
mm	Mili-Mole
mRNA	Massenger Ribonuclic Acid
MSI	High-Microsatellite Instability
MSI	Microsatellite instability
MSS	Microsatellite Stable
NCI	National Cancer Institute
NK	Natural Killer
PET	Positeron Emission
PI	Proliferatinve Index
pRp	Retinoblastoma Protien
ROS	Reactive Oxygen Species
S	Synthesis
SP	Synthesis Phase
SPF	Synthesis Phase Fraction
SSC	Side Scatter
TAA	Tumor Associated Antigen
TAMs	Tumor-Associated Macrophages
Tc	Cytotoxic T-cell
TCR	Thymus- Derived Cell Receptor
TGF-b	Tumor Growth Factor Beta
TH	T- Helper Cell
TH1	T- Helper Cell 1
TH2	T- Helper Cell 2
TILs	Tumor Infiltrating Lymphocytes
TLI	Thymdine Labeling Index
TMA	Tissue Micro-Array
TNM	Tumor-Node Metastasis