

**RECENT ADVANCES IN THE**  
**DETECTION OF MINIMAL**  
**RESIDUAL DISEASE**

An Essay

Submitted in partial fulfillment of the Master Degree in Clinical  
and Chemical Pathology.

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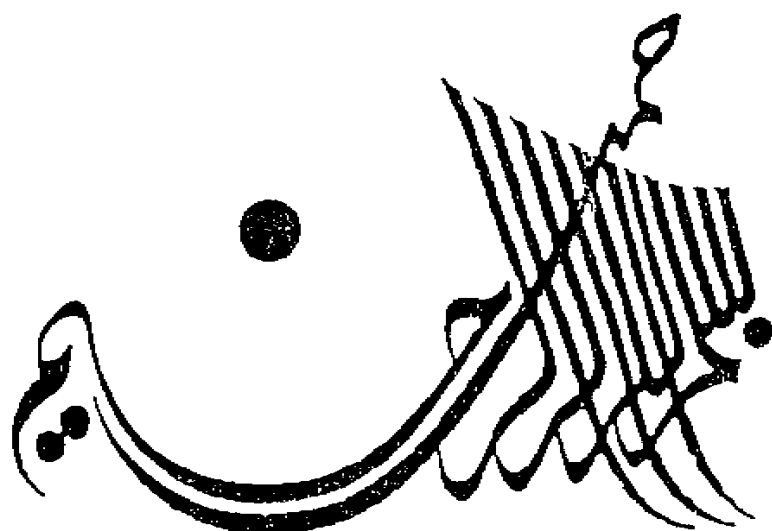
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قَالُوا

سُبْحَنَكَ لَا عِلْمَ لَنَا إِلَّا بِمَا عَلَّمْتَنَا  
إِنَّكَ أَنْتَ الْعَلِيمُ الْحَكِيمُ

صَدَقَ اللَّهُ الْعَلِيمُ

الآيَةُ (٢١) سُورَةُ الْبَقَرَةِ



## ACKNOWLEDGEMENT

*I wish to admit that I am greatly indebted to Professor Dr. Nevine Ahmed Kassim for her encouragement, constant guidance and honest supervision. I am very much obliged for her patience and her precious advises.*

*I would like to express my deepest gratitude to Dr. Lama Akram Al-Safadi who had spared no effort in guiding me throughout this work. I will always remember her sincere help.*

**Taghreed Aly Mohamed**



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## **LIST OF ABBREVIATIONS**

$\alpha$  /  $\beta$  : Alpha /Beta  
**ABM** :Autologous Bone Marrow  
**ABMT** :Autologous Bone Marrow Transplantation:  
**AFP**: Alpha Fetoprotein  
**ALL** :Acute Lymphoblastic Leukemia  
**AML**: Acute myeloid leukemia  
**AT** : Adenine thymidine  
**BFU-E** :Burst Forming Unit Erythroid  
**BM** : Bone marrow  
**BMT**: Bone marrow Transplantation  
**bp**: base pairs  
**BSC**: Blood Stem Cell  
**BudR**: Bromodeoxyuridine  
**CD** :Cluster of Differentiation  
**CEA**: Carcinembryonic antigen  
**CFU-S**: Colony Forming Unit -Spleen  
**CLL** : Chronic Lymphocytic Leukemia  
**CML** :Chronic Myeloid Leukemia  
**CNS** :Central Nervous System  
**CR** : Compete Remission  
**CSF**: Colony Stimulating Factor  
**CSF**: Cerebrospinal Fluid  
 $\delta$  /  $\gamma$  : Delta /Gamma  
**DFS** :Disease Free Survival  
**DH** : Diversity Segment  
**DNA** :Deoxyribonucleic acid  
**EPO**: Erythropoeitin  
**FACs**: Fluorescence Activated Cell sorting  
**FISH**: Fluorescent In Situ Hybridization  
**GC**: Guanine Cytosine  
**G-CFU** :Granulocyte Colony Forming Unit

**G-CSF** :Granulocyte Colony Stimulating Factor  
**GM-CSF**: Granulocyte- Monocyte Colony Stimulating Factor  
**GVHD**: Graft Versus Host Disease  
**H-chain**: Heavy chain  
**IF** :Immunofluorescence  
**Ig** :Immunoglobulin  
**ILS**: Interleukins  
**JH**: Joining region  
 $\kappa/\lambda$  :Kabba/Lamda  
**L-chain** : Light chain  
**LRP**: Lung Resistance Protein  
**Mb**: Megabases  
**M-CSF**: Monocyte Colony Stimulating Factor  
**MDR-1**:Multidrug resistance  
**MGG** :May Grunewald Geimsa  
**MoAb** :Monoclonal Antibodies  
**MRD**: Minimal Residual Disease  
**mRNA** :messenger RNA  
**NHL** :Non Hodgkin Lymphoma  
**PB** :Peripheral Blood  
**PBSC**: Peripheral Blood Stem Cell  
**PCR** :Polymerase Chain Reaction  
**PgP** :P-glycoprotein  
**Ph** :Philadelphia  
**PHA**: Phytohaemagglutinin  
**PSA** :Prostate Specific Antigen  
**PSM** :Prostate Specific Membrane Antigen  
**RNA** :Ribonucleic Acid  
**RT-PCR**: Reverse Transcription PCR  
**RQ-PCR** :“Real Time” Quantitative PCR  
**TCR** :T-cell Receptor  
**TdT** :Terminal Deoxynucleotidyl Transferase  
**VH** :Variable segment **YAC**: Yeast Artificial Chromosome

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# Introduction and AIM of the Work

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