

Diagnosis of Pulmonary Tuberculosis Using Secreted Antigen(s)

A Thesis

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Presented By

Shaimaa El-Sayed Mohammed Rihan

B.Sc., Biochemistry, (2004)
Demonstrator in Department of Biochemistry, Faculty of Science,
Ain Shams University

Under Supervision of

Prof. Dr. Ibrahim Hassan Kamal

Professor of Biochemistry - Faculty of Science
Ain Shams University

Prof. Dr. Nabila Anwar El-Sheikh

Professor of Microbiology- Faculty of Medicine for
Girls Al-Azhar University

Dr. Abdel-Rahman Badr El-Din Abdel-Ghaffar

Lecturer of Biochemistry - Faculty of Science
Ain Shams University

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تحت إشراف

أ. د / إبراهيم حسن كمال

أستاذ الكيمياء الحيوية كلية العلوم- جامعة عين شمس

أ. د / نبيلة أنور الشيخ

أستاذ الميكروبيولوجى كلية الطب بنات – جامعة الازهر

د. عبد الرحمن بدر الدين عبد الغفار

مدرس قسم الكيمياء الحيوية كلية العلوم- جامعة عين شمس

كلية العلوم
جامعة عين شمس
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Summary and conclusion

Tuberculosis is a chronic granulomatous disease caused by tubercle bacterium *Mycobacterium tuberculosis* and is responsible for the highest mortality. Approximately one third of the world population is infected with *Mycobacterium tuberculosis*, and it is estimated that 8 million new cases and 3 million deaths occur each year. Although TB can be fully cured with the use of appropriate antibiotics, the major hurdle to treatment for TB lies in the late diagnosis of the disease due to the lack of simple and cost effective diagnostic products. The control of the disease depends largely on early detection and the treatment of active cases.

A definite diagnosis of TB can be made by the demonstration of the tubercle bacillus in clinical material by microscopy or by culture techniques and considered as “gold standard”. The specificity of acid fast bacilli (AFB) staining is typically 99% and the sensitivity of this test varies between 25 and 75%. The culture technique has an advantage in distinguishing the morphology of *Mycobacterium tuberculosis* from those of some non-tuberculous mycobacteria. However, it requires more time for results (3–4 weeks).

Newer techniques such as polymerase chain reaction, DNA Probes, restriction fragment length polymorphism

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List of Abbreviations

1-DE	One dimensional electrophoresis
2-DE	Two dimensional electrophoresis
AG	Arabinogalactan
AMTD	Amplified <i>Mycobacterium tuberculosis</i> Direct Test
APC	Antigen presenting cell
APS	Ammonium persulphate
BCG	Bovis bacillus calmette-guérin
Be	Effector B cell
bp	Base pair
BSA	Bovine serum albumin
Ca⁺²	Calcium ion
CCL	Chemokine
cDNA	Complementary deoxyribonucleic acid
CD	Cluster of differentiation
CFP	Culture filtrate protein
CIC	Circulating immune complex
CR3	Complement receptor 3
CSF	Cerebrospinal fluid