

**ISOLATION AND IDENTIFICATION OF THE
ETIOLOGICAL AGENT OF PULMONARY
TUBERCULOSIS IN PATIENTS VISITING NATIONAL
TUBERCULOSIS CENTER,
THIMI, BHAKTPUR**

A
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AWARD OF THE DEGREE OF MASTER OF SCIENCE IN
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BY
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RECOMMENDATION

This is to certify that **Mr. Sudeep Singh** has completed this dissertation work entitled **“Isolation and Identification of the etiological agent of pulmonary tuberculosis in patients visiting National Tuberculosis Centre, Bhaktapur, Thimi”** as a partial fulfillment of M.Sc. Degree in Microbiology under our supervision. To our knowledge this work has not been submitted for any other degree.

Date:

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On the recommendation of **Dr. Keshab Bhakta Shrestha** and **Mr. Binod Lekhak**, this dissertation work of **Mr. Sudeep Singh** is approved for the examination and is submitted to the Tribhuvan University in the Partial fulfillment of the requirement for M. Sc. degree Microbiology.

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ABSTRACT

During the study period of June 2005 to May 2006 a total of 200 clinically suspected sputum samples were examined by ZN staining and cultured in Ogawa medium. Primary culture samples were subcultured in the LJ medium. The subcultures were observed for their cultural characters for 4 weeks and then subjected for biochemical tests for their confirmation as *M. tuberculosis*. From the 200 subcultures Niacin, Nitrate reduction, 68°C labile catalase test and growth on PNB containing medium was performed. Out 200 samples 190 (95%), 189 (94.5%), 6 (3%) and 7 (3.5%) were positive for Niacin, Nitrate reduction, 68°C labile catalase and growth on PNB containing medium and 10 (5%), 11 (5.5), 194 (97%) and 193 (96.5%) were negative for the respective tests.

Out of 200 samples 189 (94.5%) were positive for Niacin and Nitrate reduction and negative for 68°C labile catalase and growth on PNB containing medium which confirms that they were *M. tuberculosis*.

Thus with the combination of above mentioned tests 189 (94.5%) out of 200 culture positive were confirmed as *M. tuberculosis* and the rest may be MOTT. Biochemical tests although time consuming is a very good alternative to new quick methods like PCR and NAA.

Key words: Niacin, Nitrate, Catalase, PNB, *M. Tuberculosis*

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LIST OF ABBREVIATIONS

AFB	:	Acid Fast Bacilli
AIDS	:	Acquired Immuno Deficiency Syndrome
DOTS	:	Directly Observed Treatment Short Course Therapy
EPTB	:	Extra-Pulmonary Tuberculosis
FM	:	Fluorescent Microscopy
FN	:	False Negative
FP	:	False Positive
HIV	:	Human Immuno Deficiency Virus
IUALTD	:	International Union Association of Tuberculosis and Lung Disease
LJ	:	Lowstein-Jensen
LTBI	:	Latent Tuberculosis Infection
MDR	:	Multidrug Resistant
MOTT	:	Mycobacterium Other Than Tuberculosis
NAA	:	Nucleic Acid Amplification
NTC	:	National Tuberculosis Center
NTP	:	National Tuberculosis Program
PCR	:	Polymerase Chain Reaction
PNB	:	Para-nitrobenzoic acid
PPD	:	Purified Protein Derivative
PTB	:	Pulmonary Tuberculosis
SAARC	:	South Asian Association for Regional Countries
TB	:	Tuberculosis
TST	:	Tuberculin Skin Test
WHO	:	World Health Organisation
ZN	:	Ziehl-Neelsen

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