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Abstract

In the present study suggested that is the BACTEC MGIT 960™ system was rapid method for recovery of mycobacteria form clinical specimens when compared with conventional culture method (L.J.).The Bovine – PPD has potent sensitivity for serodiagnosis of tuberculosis by ELISA test when compared with MBSE antigen. The strong association between nitric oxide level, adenosine deaminase activity (ADA) and tuberculosis in sera of naturally infected cows make the nitrite production test and adenosine deaminase activity a valuable tool as complementary test for diagnosis of tuberculosis. PCR technique is significantly faster and simpler than conventional mycobacteriological methods for routine differential identification of culture of *M. bovis* and *M. tuberculosis*.

(Key Words: Mycobacterium - ELISA - nitrite - adenosine deaminase – PCR)

القاهرة
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تجهيز وتقييم بعض المشخصات الحديثة لمرض السل فى الأبقار

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المستخلص

فى هذه الدراسة تم إجراء مقارنة فى عزل الميكوبكتيريا بين نظام BACTEC MGIT 960™ system والطرق التقليدية (L.J.) وكانت الأفضلية لنظام BACTEC MGIT 960™ system كما وجد أن الـ ب. ب. د. البقري (B – PPD) قد أعطى حساسية أفضل من مستخلص الميكوبكتيريم بوفس (MBSE) فى تشخيص مرض السل بواسطة الإليزا وقد أظهرت الدراسة أيضاً أنه يمكن استخدام كلاً من إختبار إنتاج النيتريت وقياس نشاط الأدينوسين دايميناز (ADA) فى المصل كإختبارات مكملة لتشخيص أسرع و أسهل لمرض السل البقري كما وجد أن استخدام إختبار تفاعل البلمرة المتسلسل (PCR) يساعد فى سرعة ودقة الكشف عن الإصابة بالميكوبكتيريا لحين ظهور نتائج العزل والتصنيف بالطرق التقليدية لزيادة حساسية وخصوصية إختبار التيوبركلين.





(الكلمات الدالة : ميكوبكتيريم - الإليزا - النيتريت - الأدينوسين دايميناز- إختبار تفاعل البلمرة)

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List of Abbreviations

Ab	: Antibody.
ADA	: Adenosin Deaminase Activity.
AFB	: Acid Fast Bacilli.
Ag	: Antigen.
AS	: Absorbance of Samples.
AST	: Absorbance of Standard .
BALF	: Bronchoalveolar Lavage Fluid.
BCG	: Bacillus Calmette – Guérin.
B- PPD	: Bovine Purified Protein Derivatives.
bp	: Base pair.
CMI	: Cell Mediated Immunity.
CFT	: Caudal Fold Test.
CTT	: Comparative Tuberculin Test.
DNA	: Deoxyribonucleic acid.
dNTPs	: Deoxynucleotide triphosphate.
DTH	: Delayed Type Hypersensitivity.
EBr	: Ethidium bromide.
EDTA	: Ethylene Diamine Tetra Acetic acid.
ELISA	: Enzyme Linked Immunosorbent Assay.
g	: gram.
GGT	: Glutaraldehyde Gelification Test.
GOVS	: General Organization of Veterinary Services
HA	: Haemagglutination.
HIV	: Human Immuno deficiency Virus.
ICGA	: Immuno - Chromatographic Assay.

IDTT : Intradermal Tuberculin Test.

IFA : Indirect Fluorescent Antibody.

IL : Interleukin.

IFN- γ : Interferon Gamma.

iNOS : Nitric Oxide Synthetase.

IS1081 : Insertion Sequence 1081.

IS6110 : Insertion Sequence 6110.

Iu : International unite.

Kb : Kilo base.

KDa : Kilo Dalton.

LBAA : Latex Bead Agglutination Assay.

L.N. : Lymph Node.

LMI : Lymphocyte Migration Inhibition.

L.J. : Lowenstein Jensen.

L.S.D. : Least Significant Difference.

M : Mole.

M. : ***Mycobacterium.***

MAPIA : Multi Antigen Print Immuno Assay.

MBSE : ***Mycobacterium bovis*** Sonic Extracted.

MDR : Multi Drug Resistant.

mg : milligram.

μ g : microgram.

MGIT : Mycobacterium Growth Indicator Tube.

ml : milliliter.

μ l : microliter.

MOTT : Mycobacterium Other Than Tuberculosis.

m- PCR : multiplex – Polymerase Chain Reaction.

MTC : Mycobacterium Tuberculosis Complex.

NK : Natural Killer cells.

No. : Number.

NO : Nitric Oxide.

NOS : Nitric Oxide Synthesize.

NRAMPI : Naturally Resistance Associated Macrophages Protein.

N – PCR : Nested – Polymerase Chain Reaction.

NVL : NonVisible Lesion.

OT : Old Tuberculin.

OADC : Oleic acid – Albumin – Dextrose – Catalase.

OD : Optical Density.

OPD : Orthophenylene Diamine.

PANTA : Polymyxin B – Amphotericin B – Nalidixic acid –
Trimethoprim – Azlocillin.

PBMC : Peripheral Blood Mononuclear Cells.

PBS : Phosphate Buffer Saline.

PCR : Polymerase Chain Reaction.

PGL : Phenolic glucolipid.

PI : Post Infection.

P.M. : Post Mortem.

PNBA : P – nitro benzoic acid.

PPD : Purified Protein Derivatives.

PPDA : Purified Protein Derivatives of *Mycobacterium avium*.

PPDM : Purified Protein Derivatives of *Mycobacterium tuberculosis*.

RD : Region of Difference

RFLP : Restriction Fragment Length Polymorphism.

RNA : Ribonucleic Acid.

rpm : Round per minute

RT : Room Temperature.

S.D. : Standard Deviation.

SDS : Sodium Dodecyl Sulphate.

S.E. : Standard Error.

SE : Sonicated Extract.

SID : Single Interadermal Cervical Tuberculin test.

Spp. : Species.

TB : Tuberculosis.

TB1 : Primer 1.

TB2 : Primer 2.

TCH : Thiophen-2-Carboxylic acid Hydrazide.

TE : Tris –EDTA.

TLA : Thin Layer Agar.

TM : Trade Mark.

TNF - α : Tumor Necrosis Factor alpha.

TSP : Triton X - 100.

TTD : Mean time for detection.

UV : Ultra Violet.

VL : Visible Lesion.

VSVRI : Veterinary Serum and Vaccine Research Institute.

Z.N : Ziehl Neelsen stain.