



## Potential efficiency of conventional and advanced approaches used to detect *Mycobacterium bovis* in cattle

Abdelazeem M. Algammal<sup>1</sup>, Ali Wahdan<sup>1</sup>, Mahmoud M. Elhaig<sup>2</sup>

<sup>1</sup>Department of Bacteriology, Mycology and Immunology, Faculty of Veterinary Medicine, Suez Canal University, Ismailia, 41522, Egypt.

<sup>2</sup>Department of Animal Medicine (Infectious Diseases), Faculty of Veterinary Medicine, Suez Canal University, Ismailia, 41522, Egypt.

### Abstract:

The present study was aimed to assess the prevalence and efficiency of techniques for the diagnosis of bovine tuberculosis (bTB) including enzyme-linked immunosorbent assay (ELISA), Gamma interferon assay (IFN- $\gamma$ ) and polymerase chain reaction (PCR) in comparison to skin tuberculin test and culture technique. A total of 2600 cross-breed dairy cattle in Menoufia and Daqahlia governorates were tested by the single intradermal tuberculin test where the disease prevalence was 1.8%. Serum and whole blood samples were collected from positive tuberculin reactors for ELISA and IFN- $\gamma$  assay, respectively. After slaughtering of positive tuberculin reactors, the post-mortem examination was carried out and tissue samples were collected for the bacteriological examination and PCR. The percentage of visible lesions of tuberculin reactors was 78.7%, while non-visible lesions were 21.27%. Culture technique revealed that the percentage of bTB was 63.8%. The ELISA and IFN- $\gamma$  assay using short-term culture filtrate (ST-CF) prepared antigen revealed higher sensitivity (72.3% and 82.9%) than the bovine purified protein derivative (PPD-B) antigen. Although prepared ST-CF antigen has great efficiency and eligibility for the diagnosis of bTB, PCR appeared to have a higher sensitivity (85.1%) than other diagnostic methods when dealing with post-mortem samples. Gamma interferon assay using ST-CF antigen is recommended for ante-mortem diagnosis of bTB in cattle

### Biography:

Abdelazeem Mohammed Algammal works as Associate Professor of Bacteriology, Immunology and Mycology. Department of Bacteriology, Immunology and Mycology. Faculty of Veterinary Medicine, Suez Canal University. Egypt. B.Sc. of veterinary medicine (2004), Faculty of Veterinary Medicine, Suez Canal University, Egypt. Master degree in Microbiology "Bacteriology, Immunology and Mycology" - (Characterization of microorganisms causing



subclinical bovine mastitis), (2008). PhD. in Microbiology "Bacteriology, Immunology and Mycology". (Molecular typing of exotoxins genes in *S. aureus* isolates) (2011).

### Recent Publications:

1. Abdelazeem M. Algammal, et al, Methicillin-resistant *Staphylococcus aureus* (MRSA) isolated from chicken meat and giblets often produces staphylococcal enterotoxin B (SEB) in non-refrigerated raw chicken livers, 2020
2. Abdelazeem M. Algammal, et al, Genes Encoding the Virulence and the Antimicrobial Resistance in Enterotoxigenic and Shiga-toxigenic *E. coli* isolated from Diarrheic Calves, 2020
3. Abdelazeem M. Algammal, et al, Prevalence, the antibiogram and the frequency of virulence genes of the most predominant bacterial pathogens incriminated in calf pneumonia, 2020
4. Abdelazeem M. Algammal, et al, Prevalence, Antimicrobial Resistance Profiles, Virulence and Enterotoxins-Determinant Genes of MRSA Isolated from Subclinical Bovine Mastitis in Egypt, 2020
5. Abdelazeem M. Algammal, et al, The Pharmacological Activity, Biochemical Properties, and Pharmacokinetics of the Major Natural Polyphenolic Flavonoid: Quercetin, 2020

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