CURRICULA VITAE

NAME: AMR MOHAMED ABDEL FATTAH MOHAMED

<u>amamohamed@aun.edu.eg</u> <u>amrmohamed2004@yahoo.com</u>

TITLE:

Professor of Clinical Laboratory Diagnosis & Molecular Diagnostics of Infectious Diseases,

CURRENT WORK AND MAILING ADDRESS:

Clinical Laboratory Diagnosis Department of Animal Medicine Faculty of Veterinary Medicine Assiut University, Assiut, EGYPT



AUTHOR RESEARCH INDEX

Research Gate:

https://www.researchgate.net/profile/Amr_Mohamed6

Scopus Preview:

https://www.scopus.com/authid/detail.uri?authorld=7402739223

ORCID:

https://orcid.org/0000-0003-4330-3151

Google Scholar:

https://scholar.google.com/citations?user=lwDjDuYAAAAJ&hl=en

EDUCATION:

Bachelor of Veterinary Science, Faculty of Veterinary Medicine, Assiut University, Egypt, 1991.

Master of Veterinary Science, Faculty of Veterinary Medicine, Tanta University, Egypt, 1996

Title of Master: "Some studies on helminthes of domestic and wild birds with special reference to host-parasite interaction"

Ph.D. of Molecular Diagnostics of Infectious Diseases, Pathology and Microbiology, University of Nebraska Medical Center, Omaha, Nebraska, USA, 2004.

Title of PhD: "Molecular approach to differential identification of *Mycobacterium* species and detection of drug resistant tuberculosis"

CAREER:

2019 - present	Professor, Molecular Diagnostics, Clinical Laboratory Diagnosis, Dept.
	Animal Medicine, School of Veterinary Medicine, Assiut University,
	Assuit, Egypt.

- 2014 -2019 Professor, Molecular Diagnostics, Dept. Laboratory Medicine, Faculty of Applied Medical Sciences, Umm Al-Qura University, Makkah KSA.
- 2009- 2014 Associate Professor, Molecular Diagnostics, Dept. Laboratory Medicine, Faculty of Applied Medical Sciences, Umm Al-Qura University, Makkah KSA.
- 2004-2009 Assistant Professor, Molecular Diagnostics, Clinical Laboratory Diagnosis, Dept. Animal Medicine, School of Veterinary Medicine, Assiut University, Assuit, Egypt.
- 1999-2004 Ph.D. graduate student, University of Nebraska Medical Center, Nebraska State University, USA
- 1997-1999 Assistant Lecturer, Clinical Laboratory Diagnosis, Dept. Animal Medicine School of Veterinary Medicine, Assiut University, Assuit, Egypt.
- 1996-1997 Assistant Lecturer, Dept. of Parasitology, School of Veterinary Medicine, Tanta University, Kafr El-Sheikh, Egypt.
- **1992-1996** Demonstrator, School of Veterinary Medicine, Tanta University, Kafr El-Sheikh, Egypt.

PREVIOUS POSITIONS:

2020 - present	Vice Dean for Postgraduate Studies and Research, Molecular Biology
	Research & Studies Institute, Assiut University
2012-2019	Head of QA team and coordinator of quality assurance and accreditation, program of Laboratory Medicine, Faculty of Applied Medical Sciences, Umm Al-Qura University, KSA
2014-2016	Head of Dept. Laboratory Medicine, Faculty of Applied Medical Sciences, Umm Al-Qura University, Makkah – KSA.
	Director of Central Research Laboratory, Faculty of Applied Medical Sciences, Umm Al-Qura University, Makkah – KSA.
2012-2016	

ACHIEVEMENTS AND MEMBERSHIPS:

- International academic accreditation (AHPGS Accreditation) of Laboratory Medicine Program, Faculty of Applied Medical Sciences, Umm Al-Qura University, KSA in 2015.
- Establishment of "Tuberculosis Research Unit" ant Central Research Laboraotry, Faculty of Applied Medical Sciences, Umm Al-Qura University, KSA
- Establishment and Director of the "Biotechnology laboratory" at the Dept. Animal Medicine, Faculty of Veterinary Medicine, Assiut University.
- Establishment and Instructor of Graduate courses "Fundamentals of Molecular Biology" and "Molecular Diagnostics".
- Member of American Society of Microbiology.
- National Certified Trainer at the "National Center for Faculty and Leadership Development" (NCFLP), EGYPT.
- Member of International Society of Camelids Research and Development (ISCRD).
- Member of International Veterinary Information Services (IVIS).
- Member of the Egyptian Society for Cattle Diseases.
- Reviewer at "Veterinary Journal", UK
- Reviewer at "Journal of Diagnostic Veterinary Investigation", USA
- Member of Organizing and Scientific Committees of the Faculty of Veterinary Medicine Conference and the Egyptian society of Cattle Disease Conference.

GRANTED PROJECTS:

A) Scientific projects:

- Principle Investigator of MUCIA-EARI institutional Linkage Biotechnology Project titled "Molecular Evaluation of the Tuberculin skin test: Towards the Development of a Reliable Field diagnostic Test for Control of Bovine Tuberculosis". Supported by the Midwest Universities Consortium for International Activities (MUCIA)–(USAID funded) 2005-2007, (\$65,000).
- 2. Co-investigator of Scientific Research Institute grant titled "Evaluation of the anti-oxidant status of oregano (Origanum vulgare) and its influence on the 1,2-dimethylhydrazine (DMH)-induced rat colon carcinogenesis" Umm Al-Qura University, 2009-2010 (SR 135,000).
- 3. Co-Investigator of Pilgrimage Research Institute grant titled "Sero-epidomiological survey of Rift Valley Fever among sacrifice animals during Pilgrimage season in Mecca". 2009-2010 (SR 75,000).
- Co-Investigator of Scientific Chair for Colon Cancer Researches, Umm Al-Qura University titled "Investigation of the influence of anti-oxidant effect of oregano (Origanum vulgare) on the fate of colorectal carcinogenesis" 2011-2012 (SR 300,000).
- 5. **Principle Investigator** of Pilgrimage Research Institute grant titled "**Sero-epidomiological survey of Hemorrhagic Fever viruses among sacrifice animals and their close contacts during Pilgrimage season in Mecca" 2011-2012 (SR 80,000).**
- 6. **Principle Investigator** of National Science, Technology and Innovation Plan grant of titled "**Molecular characterization and cloning of a 60 KDa** *Mycobacterium bovis*-specific antigen as a recombinant protein: Towards the development of a reliable skin test for control of tuberculosis among humans and animals" 2013-2015 (SR 1,975,000).
- 7. Co- Investigator of National Science, Technology and Innovation Plan grant titled "Novel host markers for the prediction of treatment outcome in patients with chronic hepatitis C infection in Saudi Arabia: The role of activins, interleukin-10, interferon gamma-inducable protein-10 and interleukin-28B gene polymorphism" 2013-2015 (SR 1,850,000).
- 8. Co- Investigator of National Science, Technology and Innovation Plan grant titled "Novel Combinatorial Therapeutic Strategies by Vitamin D or its analogue Paricalcitol, Thymoquinone and Conventional Cytotoxic Drugs against Colorectal Carcinoma: Efficacy, safety and mechanisms. 2015-2017 (SR 2,000,000)

B) Educational Development projects:

- 1. Member of Quality Assurance and Accreditation project (QAAP) Implementation team Faculty of Veterinary Medicine, Assiut University. 2004-2006, (\$30,000).
- 2. Member of Higher Education Enhancement Project fund (HEEPF) Implementation team titled "Developing Of Veterinary Education In the Faculty of Veterinary Medicine To Prepare Veterinarians For The Labour Market", 2005-2007, (\$88,000).
- 3. Member of Higher Education Enhancement Project fund (HEEPF) Management team titled "Continuous Improvement and qualification for accreditation project (CIQAP)". 2008-2010, (\$2,000,000)

ATTENDED WORKSHOPS AND TRAINING PROGRAMS:

- 1. Workshop on "Advanced Diagnostic Immunology". Medical Technology Center for Research and Services, Medical Research Institute, Alexandria University. 2-7 July 2005.
- 2. Training of Trainers (T.O.T) in field of quality Assurance and Accreditation System, Assiut University, 2005.
- 3. Workshop on "Laboratory Performance and Quality Assurance". Medical Technology Center for Research and Services, Medical Research Institute, Alexandria University. 2-4 April 2007.
- 4. Training of trainers (T.O.T) in Course Specification and Course Reports. Cairo University 2007.
- 5. Trainer and coordinator of workshop titled "Advanced Teaching Methods Educational Movies" for teachers of Agricultural High schools. Sponsored by Midwest Consortium for International Activities (MUCIA). 22-24 October, 2007.
- 6. Training of Trainers (T.O.T) Introductory Level (Level I): towards international Certified Trainers. National Center for Faculty and Leadership Development (NCFLP). Cairo, Egypt, November, 2008.
- 7. Training of Trainers (T.O.T) Complementary Level (Level II): towards international Certified Trainers. National Center for Faculty and Leadership Development (NCFLP). Cairo, Egypt, June 2008.
- 8. Workshop on "Quality Assurance of Medical Laboratories" Faculty of Applied Medical Science, Umm Al-Qura University, Makkah, KSA, March 2012

SELECTED PUBLICATIONS AND MEETINGS:

A) SELECTED PUBLICATIONS:

- Mohamed AM, Bastola DR, Morlock GP, Cooksey RC, Hinrichs SH. 2004.
 Temperature Mediated Heteroduplex Analysis for Detection of pncA Mutations
 Associated with Pyrazinamide Resistance and Differentiation Between
 Mycobacterium tuberculosis and Mycobacterium bovis Using Denaturing High
 Performance Liquid Chromatography. Journal of Clin. Microbiol., 42 (3), 10161023.
- 2. <u>Mohamed AM</u>, Iwen PC, Tarantolo S, Hinrichs SH. 2004. *Mycobacterium nebraskiae* sp. nov., A New Slow-Growing Scotochromogenic *Mycobacterium*. *Int. J. Syst. Evol. Microbiol. Nov;54(Pt 6):2057-60.*
- Mohamed AM, D Kuper, H Ali, DR Bastola, PC Iwen, and SH Hinrichs. 2005. Computational Approach Involving Use of the Internal Transcribed Spacer-1 Region for Identification of Mycobacterium Species. <u>Journal of Clin.</u> <u>Microbiol.</u>, 43 (8), 3811-3817.
- 4. Iwen PC, Tarantolo SR, Mohamed AM, SH Hinrichs. 2006. First report of Mycobacterium nebraskense as a cause of human infection. <u>Diagn. Microbiol. Infect. Dis.</u> Dec;56(4):451-453.
- Elkamel A. A., <u>Mohamed A. M.</u>, Abd El-Moneim R. and Ahmed Sh. M. 2007. Mycobacteriosis in Sharptooth Catfish, *Clarias gariepinus*. <u>Vet. Med. J.</u>, 55 (2), 537-553.
- **6.** Mohamed A.M., Ghada A. Abou El-Ella, and Nasr, E.A. (2009): Phenotypic and molecular typing of tuberculous and nontuberculous *Mycobacterium* species from slaughtered pigs in Egypt. *Journal of Veterinary Diagnostic Investigation*, 21 (1): 48-52.
- 7. <u>Amr M. Mohamed</u>, Hani Ghazi, Ahmed M. Ashshi, Hani S. Faidah and Esam I. Azhar. 2011. Serological Survey of Rift Valley Fever among Sacrifice Animals in Holy Mecca During Pilgrimage Season. *International Journal of Tropical Medicine*, 6(4):85-89.
- 8. Amr M. Mohamed, Ahmed Abdel-Rady, Laila S. Ahmed and Amira El-Hosary. 2011. Evaluation of indirect TaSP enzyme-1 linked immunosorbent assay for diagnosis of tropical theileriosis in cattle (Bos indicus) and water buffaloes (Bubalus bubalis) in Egypt. Veterinary Parasitology, 186, 486–489.
- **9.** Hani S. Faidah, Ahmed M. Ashshi, Amr M. Mohamed. Isolation of Candida spp. and E. coli as the most frequently isolated causative agents of women Urinary Tract Infection in Makkah Al-Mukaramah. Umm Al-Qura Univ. Medical J. 2011, 2 (3) 28-39.

- 10. Ahmad A. Elkamel and <u>Amr M. Mohamed</u>. 2012. Differential Identification of *Flavobacterium* Species by Sequence Analysis of Genus-Specific Hypervariable 16S-23S rDNA Intergenic Spacer Target. World Journal of Fish and Marine Sciences, 4 (6): 597-603,
- 11. Amr M. Mohamed, Ghada A. Abou El-Ella, Essam A. Nasr and Youssef A. Soliman. 2012. Evaluation of Fibronectin-Binding Protein Ag85-B as Target for Serodiagnosis of Swine Mycobacteriosis in Living Animals. Journal of Mycobacterial Diseases, S:2
- **12. Hani S. Faidah, Ahmed M. Ashshi, Ghada A. Abou El-Ella, Ahmad K. Al-Ghamdi And <u>Amr M. Mohamed</u>. Urinary Tract Infections among Pregnant Women in Makkah, Saudi Arabia. Biomedical & Pharmacology Journal Vol. 6(1), 01-07 (2013).**
- 13. Ahmed M. Ashshi, Hani S. Faidah, Abdullah A. Saati, Ghada A. Abou El-Ella, Ahmad K. Al-Ghamdi and Amr M. Mohamed. Urinary Tract Infections in Pregnant Women, Assessment of Associated Risk Factors in Makkah, KSA. Biosciences Biotechnology Research Asia, 2013, 10 (1) 47-54. DOI: http://dx.doi.org/10.13005/bbra/1091
- 14. Dina A.M. Zaglool, <u>Amr M. Mohamed</u>, Yousif A.W. Khodari and Mian U. Farooq. 2013. Crypto-Giardia antigen rapid test versus conventional modified Ziehl-Neelsen acid fast staining method for diagnosis of cryptosporidiosis. Asian Pacific Journal of Tropical Medicine. Doi: 10.1016/S1995-7645 (13) 60025-5.
- 15. Ghada A. Abou El-Ella; Amr M. Mohamed and Ahmed A. Aamer. Prevalence Of Enteropathogens Associated With Neonatal Calf Scour In Cattle And Buffalo Calves Using (Fastest® Strips) Rapid Field Test. Assiut Vet. Med. J. 2013, 59 (138) 19-26.
- 16. Amr M. Mohamed; Ghada A. Abou El Ella And Islam A. Hayder. Antioxidant Effect Of Bee Pollen On Immune Status Of Hyperglycemic Rats. Assiut Vet Med. J. 2013, 59 (139) 107-116.
- **17.**Atif H. Asghar, Ibrahim H. A. Abd El-Rahim, Amr M. Mohamed, Omar Bashir Ahmed. **2014.** Clinical and Molecular Investigations of Johne's Disease among Small Ruminants In Makkah, Saudi Arabia. Int. J. Bioassays, 3 (11): 3445-3451.
- 18. Mohamed A.M., Abdelfattah M.A., Dina, A.Z., El-Ghany S.A. 2015. Molecular Evaluation of Conventional Microscopic Method Versus Fecal Antigen Capture Enzyme-Linked Immunosorbent Assay and Rapid Immunochromatographic Assay for Diagnosis of Cryptosporidium Infection. Infectious Diseases in Clinical Practice, 23(1):26–31.

- 19. Refaat B.A., El-Shemi A.G., Kensara O.A., Mohamed A.M., Idris Sh., Ahmad J., and Khojah A. 2015. Vitamin D3 enhances the tumouricidal effects of 5-Fluorouracil through multipathway mechanisms in azoxymethane rat model of colon cancer. J Exp Clin Cancer Res. 34 (1): 71.
- 20. Amr M. Mohamed, Ahmed M. Ashshi, Basem A. Refaat, Mohamed A. Basalamah, Ahmed A. Althagafi. Towards Improvement of Tuberculin Skin Test: Five Potential Antigenic Proteins Elicited in vitro Specific Immune Reaction Against Tuberculous Mycobacterium Species Using Sensitized Guinea Pig Models. Journal of Animal and Veterinary Advances. 2015,14 (10) 281-292.
- 21. Adel Galal El-Shemi, Bassem Refaat, Osama Adnan Kensara, Amr Mohamed Mohamed, Shakir Idris, and Jawwad Ahmad. Paricalcitol Enhances the Chemopreventive Efficacy of 5-Fluorouracil on an IntermediateTerm Model of Azoxymethane-Induced Colorectal Tumors in Rats . 2016; DOI: 10.1158/1940-6207.CAPR-15-0439.
- **22.** Kensara OA, El-Shemi AG, Mohamed AM, Refaat B, Idris S, Ahmad J. Thymoquinone subdues tumor growth and potentiates the chemopreventive effect of 5-fluorouracil on the early stages of colorectal carcinogenesis in rats. Drug Des Devel Ther. **2016**;10:2239–53.
- 23. Amal M. Abdo Almatary, Raafat Y. Hassanein, Raafat T. Makhlof, Hanaa Y. Bakir and Amr M. Mohamed. First Record of Indigenous Furuncular Myiasis Due to Cordylobia anthropophaga in Unusual Ecologic Niche, Makkah, Saudi Arabia. International Journal of TROPICAL DISEASE & Health 2016, 19(1): 1-7, DOI: 10.9734/IJTDH/2016/29086.
- **24. Abd El-Rahim IHA, Asghar AH, Mohamed AM, Fathi SM (2016).** The impact of importation of live ruminants on the epizootiology of foot and mouth disease in Saudi Arabia. Rev. Sci. Tech. Off. Int. Epiz., 2016, 35 (3), No. 29112016-00086-EN 1/22
- 25. Ashshi AM, Alghamdi S, El-Shemi AG, Refaat BA, Mohamed AM, Ghazi HO, Azhar El and Al-Allaf FA. (2017) Seroprevalence of Asymptomatic Dengue Virus Infection and Its Antibodies Among Healthy/Eligible Saudi Blood Donors: Findings From Holy Makkah City
- 26. Mohamed AM, Refaat BA, El-Shemi AG, Kensara OA, Ahmad J, Idris Sh. (2017) Thymoquinone potentiates chemoprotective effect of Vitamin D3 against colon cancer: a pre-clinical finding. Am J Transl Res 2017;9(2):774-790.

- 27. Mohamed AM (2017) Tuberculin Skin Test for Control of Bovine Tuberculosis: Limitation History, Current Challenges and Future Opportnities. J Microbiol Exp., 2017, 4(4): 00118. DOI: 10.15406/jmen.2017.00118
- 28. Mohamed AM, Mona A. Ahmed, Sabah A. Ahmed, Sherif A. Al-Semany, Saad S. Alghamdi and Dina A. Zaglool. (2017): Predominance and association risk of Blastocystis hominis subtype I in colorectal cancer: a case control study. Infectious Agents and Cancer 12:21. DOI 10.11/s13027-017-0131-z
- 29. Mohamed AM, Ashshi AM, El-Ella GA, Basalamah MA, Alandiyjany MN & Alsaegh AA. (2018) Augmentation of DTH reaction of mycobacterial antigenic cocktail using synthetic mycobacterial 19-kDa lipoprotein as a TLR-stimulant. Journal of Immunoassay and Immunochemistry. doi.org/10.1080/15321819.2018.154370.
- **30.** Mubashir A Khan, **Amr M Mohamed**, Aftab Faiz, Jawwad Ahmad: Enterobacterial infection in Saudi Arabia: First record of Klebsiella pneumoniae with triple carbapenemase genes resistance. J Infect Dev Ctries 2019; 13(4):334-341.
- **31.Amr Mohamed Mohamed**, Mubashir Ahmad Khan, Aftab Faiz, Jawwad Ahmad, Elsheikh Babiker Khidir, Mohammed Abubakar Basalamah, and Akhmed Aslam: 1Group B Streptococcus Colonization, Antibiotic Susceptibility, and Serotype Distribution among Saudi Pregnant Women. Infect Chemother. 2020 Mar;52(1):70-81
- **32.** Raafat A. Hassanein, **Amr M. Mohamed**, Mohammad O. ALKURBI, And AMAL M. Almatary: Laboratory Diagnosis Of Malaria Infection In Clinically Suspected Cases Using Microscopic Examination, Rapid Antigen Tests & PCR. J. Egypt. Soc. Parasitol. (JESP), 50(1), 2020: 11 20 11

B) Attended Conferences:

- Mohamed AM, Bastola DR, Iwen PC and Hinrichs, SH. Detection of pyrazinamide resistance and differentiation between Mycobacterium tuberculosis and Mycobacterium bovis by temperature mediated Heteroduplex analysis using denaturing high-pressure liquid chromatography. 103 rd Meeting of the American Society for Microbiology, Washington D.C., Abstract No. C224, 2003
- 2. Mohamed AM, D. Kuper, H. Ali, PC Iwen, and SH Hinrichs. Internal transcribed spacer sequence-based algorithm for differential identification of Mycobacterium species. Presented at the 104th General Meeting of the American Society for Microbiology, New Orleans, LA, 26 May, 2004.
- 3. **D. Kuper, H. Ali, <u>A. Mohamed</u> and S. Hinrichs,** Identification of Mycobacterium Species Using Curated Custom Databases, Proceedings of the Third IEEE International Workshop on High Performance Computational Biology (HiCOMP 2004), Santa Fe, New Mexico, April 26-30, 2004.
- 4. **Mohamed, A.M.** *Mycobacterium bovis*-Specific Antigen: Towards Production of Reliable Skin Test for Bovine Tuberculosis. **Research, Development, Innovation: Biotechnology in the Arab World.** Amman, Jordan. 3rd -6th March 2008.
- 5. Mohamed, A.M., Nasr, E.A., and GH. A. Abou El-Ella. Molecular characterization of a 60 kDa Mycobacterium bovis-specific protein: Towards production of reliable skin test for bovine tuberculosis. XXV World Buiatrics Congress, Budapest, Hungary. July 6-11, 2008.
- 6. <u>Amr M. Mohamed</u>, Hani Ghazi, Ahmed M. Ashshi, Hani S. Faidah and Esam I. Azhar. Serological Survey of Rift Valley Fever among Sacrifice Animals in Holy Mecca During Pilgrimage Season. *XXVII World Buiatrics Congress, Lisbon, Portugal, 3-8 June 2012.*
- 7. <u>Amr M. Mohamed</u>, Ahmed Abdel-Rady, Laila S. Ahmed and Amira El-Hosary. Evaluation of indirect TaSP enzyme-1 linked immunosorbent assay for diagnosis of tropical theileriosis in cattle (Bos indicus) and water buffaloes (Bubalus bubalis) in Egypt. XXVII World Buiatrics Congress, Lisbon, Portugal, 3-8 June 2012.
- 8. Mohamed A.M, Ashshi A.M, Abou El-Ella G.A., Asghar A.H., Abd El-Rahim I.H., El-Shemi A.G. Rift Valley Fever in Saudi Arabia: Is there a risk for Outbreak during Pilgrimage Season. XX International Congress of Mediterranean Federation of Health and Production of Ruminants, 19-22 February (2013), Assiut University, Egypt.
- 9. <u>Amr M. Mohamed</u>, Ahmed M. Ashshi and Basem A. Refaat. Characterization of five potential antigenic proteins that elicited specific immune reaction using PMBC from sensitized guinea pig models of both tuberculous and non-tuberculous

Mycobacterium species. 4th International Conference on Clinical Microbiology & Microbial Genomics on the theme "Analyzing the Innovation & Future Trends in Clinical Microbiology" October 5-7, (2015), Philadelphia, USA.

LIST OF THESIS SUPERVISION:

GRANTED MASTER THESIS:

- 1- Heba M. Kuraa, 2007 "STUDIES ON EXPERIMENTALLY INDUCED STRANGULATION OBSTRUCTION OF SMALL INTESTINE IN DONKEYS". Master of Animal Surgery, Dept. Animal Surgery, Faculty of Veterinary Medicine, Assiut University.
- 2- Sara A.H., Bayomi, 2008 "THE EFFECT OF ANTICOAGULANTS AND STORAGE OF SAMPLES ON HAEMOGRAM AND SOME BLOOD ENZYMES IN HEALTHY SHEEP". Master of Clinical Laboratory Diagnosis, Dept. Animal Medicine, Faculty of Veterinary Medicine, Assiut University.
- 3- Mohamed Said, 2008 "THE IMPACT OF SOME TRACE ELEMENTS DEFICIENCY AND INTERNAL PARASITES INTER-RELATIONSHIP AS A PREDISPOSING FACTOR FOR FOREIGN BODIES FORMATION IN THE RUMEN OF SHEEP AND GOATS". Master Thesis of Clinical Laboratory Diagnosis, Dept. Animal Medicine, Faculty of Veterinary Medicine, Assiut University.
- 4- Amira A. Al-Hosary, 2009 "SEROLOGICAL, MOLECULAR AND THERAPEUTIC STUDIES ON BOVINE THEILERIASIS" Master Thesis of Infectious Diseases, Dept. of Animal Medicine, Faculty of Veterinary Medicine, Assiut University.