

NASR-ELDIN MOHAMED AREF

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EDUCATIONAL BACKGROUND

- 2003-2008** Doctor of Philosophy (Ph.D.) in Large Animal Clinical Sciences with an emphasis on design and evaluation of highly immunogenic *Escherichia coli* heat-stable enterotoxin (STa) and characterization of the immune response in laboratory animals. College of Veterinary Medicine, Michigan State University (MSU), USA.
- 1995-1998** Master of Internal Veterinary Medicine (MVSc) with an emphasis on neonatal calf diarrhea, acid-base balance and rehydration therapy. Faculty of Veterinary Medicine, Assiut University, Assiut-Egypt.
- 1989-1994** Bachelor of Veterinary Sciences (B.V.Sc). Faculty of Veterinary Medicine, Assiut University, Assiut-Egypt.

ACADEMIC POSITIONS

- Sept. 2018-present** Professor of Internal Veterinary Medicine, Assiut University, Assiut-Egypt
- Feb. 2018-Aug. 2018** Visiting Scholar on Gut Microbiome and Antibiotics Resistance Project. College of Veterinary Medicine, University of Illinois at Urbana Champaign, USA.
- 2013-2018** Associate Professor of Internal Veterinary Medicine, Assiut University, Assiut-Egypt.
- 2008-2013** Lecturer of Internal Veterinary Medicine, Assiut University, Assiut-Egypt.
- 2003-2008** Research Assistant/PhD Candidate on STa – Antibodies/Vaccine Project, National Food Safety Toxicology Center, MSU, USA.
- 1998-2002** Assistant Lecturer of Internal Veterinary Medicine, Faculty of Veterinary Medicine, Assiut University, Assiut-Egypt.
- 1995-1998** Demonstrator of Internal Veterinary Medicine, Faculty of Veterinary Medicine, Assiut University, Assiut-Egypt.

INSTITUTIONAL POSITIONS

- 2014-2015** Vice Dean for Education & Student Affairs, Faculty of Vet. Med, New Valley, Assiut University.
- 2012-2014** Vice Director of Quality Assurance Unit, Faculty of Veterinary Medicine, Assiut University, Assiut-Egypt.
- 2009-2011** . Coordinator of strategic plan teamwork group for Continuous Improvement and Quality Assurance Project (CIQAP), Faculty of Veterinary Medicine, Assiut University, Egypt.



TEACHING EXPERIENCES

Year	Institution	Level	Courses Taught
1995-2002	Assiut University Faculty of Vet. Med.	Undergraduates	Practical courses of: <ul style="list-style-type: none"> • Internal Veterinary Medicine • Clinical Laboratory Diagnosis
2008-present	Assiut University Faculty of Vet. Med.	Undergraduates	<ul style="list-style-type: none"> • General animal medicine • Diseases of ruminants • Equine & pet animals medicine
	Assiut University (New Valley Branch) Faculty of Vet. Med.	Undergraduates	<ul style="list-style-type: none"> • General animal medicine • Diseases of ruminants
	Sohag University Faculty of Vet. Med.	Undergraduates	<ul style="list-style-type: none"> • Internal Vet. Med. (Part I) • Internal Vet. Med. (Part II)
	Assiut University Faculty of Vet. Med.	Postgraduates	<ul style="list-style-type: none"> • Diseases of neonatal animals • Bovine medicine • Disturbance of body fluid electrolyte & acid base balance

M.V.Sc. COURSES AND GRADES

1995-1996	<ol style="list-style-type: none"> 1. General Internal Veterinary Medicine with grade Excellent 2. Special Laboratory Diagnosis with grade Excellent 3. Bacterial and Viral Diseases of Neonatal Calves with grade Very Good 4. Non-Infectious Diseases of Neonatal Calves with grade Excellent 5. Statistics with grade Very Good
June 1998	MVSc. of Internal Veterinary Medicine, Faculty of Veterinary Medicine, Assiut University, Assiut- Egypt.

M.V.Sc. THESIS

Title	"Clinical Approach to Neonatal Calf Diarrhea with Special Reference to Acid-Base Balance and Rehydration Therapy"
Thesis work	<p>Thesis work focused on the clinical approach to neonatal calf diarrhea under field condition. The study aimed to:</p> <ul style="list-style-type: none"> ▪ Classify neonatal calf diarrhea according to severity of dehydration and metabolic acidosis. ▪ Correlate clinical signs with blood indices of acid-base balance and other laboratory parameters of dehydration. ▪ Establish a therapeutic regime for medical intervention under field condition.



PH.D. COURSES

1. Advanced Internal Veterinary Medicine
2. Diseases of Intensive Production
3. Herd Medicine
4. Advanced Clinical Laboratory Diagnosis
5. Basic Biochemistry
6. Protein Structure and Function
7. Veterinary Immunology
8. Veterinary Microbiology and Infectious Diseases
9. Principles of Drug-Tissue Interaction
10. Introduction to Descriptive and Analytic Epidemiology
11. Design & Conduct of Epidemiological Studies & Clinical Trials
12. Special Problems in Large Animal Medicine
13. Epidemiology of Food-Borne Diseases and Food Safety
14. Statistics

May 2008 Ph.D. of Large Animal Clinical Sciences, CVM, MSU, USA

PH.D. DISSERTATION

Title

“Design and Evaluation of Immunogenic *Escherichia coli* Heat-Stable Enterotoxin (STa) and Characterization of the Immune Response in Laboratory Animals”

Dissertation work

Dissertation work focused on construction of highly immunogenic STa conjugate and characterization of the neutralizing capacity and binding kinetics of STa- antibodies.

The study's objectives:

- Purification and characterization of ETEC-STa
- Design and molecular characterization of an immunogenic STa
- Production of neutralizing mammalian (IgG) antibodies against STa

CLINICAL AND LABORATORY RESEARCH SKILLS

1. **Microbiome:** DNA extraction, PCR and Basic Bioinformatics
2. **Protein purification, structure and function:** Dialysis, chromatography (RP-HPLC, SEHPLC, GFC, AC), MALDI-TOF/ Mass spectroscopy, amino acid compositional analysis, ligand-receptor interaction.
3. **Hapten-carrier conjugation:** Different conjugation protocols and techniques.
4. **Mammalian antibody (IgG) production, purification and evaluation:** Immunization, sample collection and processing, antibody harvesting, antibody purification using AC, antibody assessment using different ELISA techniques.
5. **Egg- yolk antibodies (IgY) production, purification and evaluation:** Immunization, sample collection and processing, antibody harvesting, antibody purification using AC, antibody assessment using different ELISA techniques.
6. **Clinical applications of avian and mammalian antibodies:** Studying the



neutralization capacity of avian and mammalian antibody against heat-stable enterotoxin of ETEC.

7. **Large Animal Diseases, Diagnosis and treatment:** Clinical diagnosis, Hematology, blood biochemistry, blood gas and acid-base balance: Sampling, analysis and data interpretation.
8. Study design and conduct clinical trials.

SCIENTIFIC MEMBERSHIP

1. Member of American Association of Bovine Practitioners.
2. Member of American Association for the Advancement of Science.
3. Member of Egyptian Society for Cattle Diseases.
4. Member of Egyptian Society for Equine Diseases.
5. Member of Egyptian society for Camel Diseases.

WORKSHOP AND TRAINING COURSES

1. Intensive workshop on the uses of electron microscope, Assiut University-Egypt, 1-6 April, 2000.
2. Navigating the PhD workshop: Demystifying the dissertation, personal management, forming committees, topic & proposals, MSU2003, USA.
3. Biological safety and medical waste training courses. MSU. USA.
4. Biodiversity of genera and species of fungi which deteriorate food materials with special attention to toxigenic human, animal and plant pathogenic species. Mycology Center, Assiut University, Egypt, 7-11 March, 2009.
5. Computer aided drug design using molecular operating environment program (CADD-MOE). 7-12 Feb., 2009 College of Pharmacy, Assiut University-Egypt.
6. Protein analysis and applications. Molecular Biology Research Units, Assiut University, Egypt, 24-25 Oct., 2010
7. Environmental pollutants: Methods of their detection and prevention. Faculty of Veterinary Medicine, Assiut University, Egypt, 18-20/2/2013.
8. Amino acid composition analysis. Biochemistry Dept. Faculty of Medicine, Assiut University, Egypt, 2-3/2/2016.

QUALITY ASSURANCE TRAINING PROGRAMS IN HIGHER EDUCATION

1. Ethics in Education. 8-10 August, 2005. Faculty and Leadership Development Center (FLDC) Assiut University, Egypt.
2. Credit Hour System. 28-30 June, 2008. FLDC, Assiut University, Egypt.
3. Technology in Education. 28 -30 June, 2008. FLDC, Assiut University, -Egypt.
4. Time & Meeting Managements. 8 -10 July, 2008. FLDC, Assiut University, Egypt.
5. Financial and Law Aspects in University. 12-14 July, 2008. FLDC, Assiut University, Egypt.



6. Strategic Planning. 15-17 Dec., 2008. FLDC, Assiut University, Egypt.
7. International Publishing of Research. 23 -25 May, 2009. FLDC, Assiut University, Egypt.
8. E-Learning: 6 - 8 June, 2009. FLDC, Assiut University, Egypt.
9. Institutional Self-Evaluation in Higher Education. 7-11 Nov., 2009, National Authority for Quality Assurance and Accreditation of Education (NAQAE), Ministry of Higher Education, Egypt.
10. External Reviewing of Higher Education Institutions. 15-19 Nov., 2009. NAQAE, Ministry of Higher Education, Egypt.
11. World Federation for Medical Education. 7-9 Dec., 2009, NAQAE, Ministry of Higher Education, Egypt.

ACADEMIC ACTIVITIES

- Providing comprehensive clinical training for final years of veterinary students at Veterinary Teaching Hospital and Upper Egypt villages, Faculty of Veterinary Medicine, Assiut University, Egypt, 1995-2002, 2008-present.
- Active member of community service program for screening, diagnosis and treatment of animal diseases in Upper Egypt, Faculty of Veterinary Medicine, Assiut University, Assiut, Egypt, 1995-2002, 2008-present.
- Providing training for a summer intern on the use of Bellco bioreactor, ELISA and RP-HPLC, MSU, USA, summer, 2007.
- Providing training for laboratory staff on STa and IgY purification protocols, safe handling of Bellco Bioreactor, ELISA and RP-HPLC machines, MSU, USA, 2007.
- Active contribution in the scientific conferences, Faculty of Veterinary Medicine, Assiut University, Egypt, 1995-2002, 2008-present.

PUBLICATIONS

1. Nasr-Eldin M. Aref, Mohammed Zeineldin, Ameer Megahed, Benjamin Blair, Brian Aldridge and James Lowe, Gut Microbiome Ecosystem in Ceftiofur-challenged Preweaned Lambs (under preparation)
2. Nasr-Eldin M. Aref, Abdel-Raheem A. Abdel-Raheem, Hanaa F. Kamaly, Soher Z. Hussien (2018): Clinical and sero-molecular characterization of Escherichia coli with an emphasis on hybrid strain in healthy and diarrheic neonatal calves in Egypt. Open Veterinary Journal 8 (4), 351-359.
3. Arafat Khalphallah*, Nasr-Eldin M. Aref, Ashraf M. Abu-Seida, Enas Elmeligy, Sara A. Bayoumi, Al-lethie A. Al-lethie, Doaa Salman (2018): Hepatobiliary Diseases in Buffaloes (Bubalus bubalis): Clinical, Laboratory and ultrasonographic findings. Journal of Veterinary Science, 19(3), 1-000 · <https://doi.org/10.4142/jvs.2018.19.3.1>



4. [Nasr-Eldin M. Aref*](#), Arafat S. Sayed, Ahmed K. Diab, and Maheetab M. Mohamed (2018): Prospective Study of Clinical and Epidemiological Trends of Intestinal Nematodes Infection in Dogs in Upper Egypt. *Assiut Veterinary Medical Journal*, 64 (157), 28-40.
5. [Nasr-Eldin M. Aref](#), Maha Nasr, Rehab Osman (2018): Construction and immunogenicity analysis of nanoparticulated conjugate of heat-stable enterotoxin (STa) of enterotoxigenic *Escherichia coli* *International journal of biological macromolecules* 106, 730-738.
6. [Nasr-Eldin M. Aref](#), Ahmad A. Aamer, Shimaa Hassanin, Mohamed E. Radwan (2018): Evaluation of hemostatic parameters and serum amyloid (A) in horses with abdominal pain *Assiut Veterinary Medical Journal*, 64 (156), 90-104
7. [Nasr-Eldin M. Aref*](#), Arafat S. Sadek, Asmaa M. Zahran, Ghada A. Abd-Elaal Eman A. Nasser (2017): Flow cytometric analysis of somatic cells and oxidant/antioxidant profile in dairy cows with subclinical mastitis, *Bulgarian Journal of Veterinary Medicine*, 21, No 3, pp. 347-357
8. [Nasr-Eldin M. Aref*](#), Maha Nasr, Rehab Osman (2017): Novel heat-stable enterotoxin (STa) immunogen based on cationic nanoliposomes: Preparation, characterization and immunization. *Journal of Vaccine and Vaccination*, 8:(2).1-8.
9. [Nasr-Eldin M. Aref*](#), Ali El-Sebaie and Hammad Z. Hammad. (2016): New Insights on Ill-thriftiness in Early-weaned Buffalo Calves. *The International Journal of Veterinary World*, 12;9(6):579-86.
10. Arafat Khalphallah, [Nasr-Eldin M. Aref*](#), Enas Elmeligy and Sayed F. El-Hawari (2016): Clinical and Ultrasonographic Observations of Functional and Mechanical Intestinal Obstruction in Buffaloes (*Bubalus bubalis*), *The International Journal of Veterinary World*, 9(5):475-480.
11. [Nasr-Eldin M. Aref*](#) and Mohamed H. Abdel-Hakeim, (2013): Clinical and Diagnostic Methods for Evaluation of Sharp Foreign Body Syndrome in Buffaloes, *The International Journal of Veterinary World*, 6:9, 586-591.
12. Nasr-Eldin M. Aref* and Mohamed H. Abdel-Hakim, (2013) Azotemia and Metabolic Alkalosis in Calves with Urolithiasis Associated with Urinary Bladder and Urethral Rupture , *Assiut Veterinary Medical Journal*, 59 (137) , 86-92.
13. Rasha G. Sayed; Ahmed Abdel-Hameid; [Nasr-Eldin M. Aref*](#), and Mohammed Sayed (2013) Modulating effect of camel's milk on alloxan-induced experimental diabetes in laboratory animal model, *Assiut Vet. Med. J.*
14. [Nasr-Eldin M. Aref*](#) and Hateem A. Hamdon (2012) Some indices of metabolic profile and oxidative stress in Sohagi ewes during transition period., *Assiut Veterinary Medical Journal*, Faculty of Veterinary Medicine-Assiut, Egypt, 58:132, 217-228.
15. [Nasr-Eldin M. Aref *](#) and A. Mahdi Saeed, (2012): Generation of high-titer of neutralizing polyclonal antibodies against heat-stable enterotoxin (STa) of enterotoxigenic *Escherichia coli*, *Vaccine*, Vol.30 - No.45, pp. 6341– 6346.
16. [Nasr-Eldin M. Aref*](#) and A. Mahdi Saeed (2012): An enhanced protocol for expression and purification of heat-stable enterotoxin of enterotoxigenic *Escherichia coli* , *J of Biochemistry and Molecular Toxicology*, Vol 26-No 4, 168-175.
17. [Nasr-Eldin M. Aref *](#) and Waleed Senosy (2012) Diagnostic and prognostic value of blood gases and acid base balance in uterine torsion in buffaloes, *Assiut Veterinary Medical Journal*, Vol.58, No.133, pp.174-183.
18. [Nasr-Eldin M. Aref](#) (2012): Vaccine and Vaccination: Impact and Challenges. *J Vaccines Vaccin*, Vol. 3 - No. 3.



19. Nasr-Eldin M. Aref (2012): ETEC Vaccine between Reality and Expectations., J Vaccines Vacci., Vol. 3 - No.5, 8.
20. Mohamed A. H. Abdel-Hakiem and Nasr-Eldin M. Aref* (2012): Prospective Study on Ano-rectal Anomalies in Neonatal Farm Animals, Journal of Veterinary Advance, ScopeMed, 2(12):, 595-604, <http://www.scopemed.org/?jid=74>.
21. Nasr-Eldin M. Aref*, Hatem A. Hamdon (2012) Some Indices of Metabolic Profile and Oxidative Stress in Sohagi Ewes during Transition Period, Assiut Vet. Med J. 58, 132, 217-228.
22. Nasr-Eldin M. Aref* and MoatamedElSayed Ali, (2011): Therapeutic effect of vitamin C in endotoxin-induced metabolic acidosis and oxidative stress in lambs., Assiut Veterinary Medical Journal, Faculty of Veterinary Medicine-Assiut, Egypt, 57:128, 170-184.
23. Nasr-Eldin M. Aref* and A. Mahdi Saeed, (2011): Design and characterization of highly immunogenic heat-stable enterotoxin of enterotoxigenic Escherichia coli K99+, Journal of Immunological Methods, 366, 100-105.
24. Nasr-Eldin M. Aref*, Abd Ellah, M. R., Khamis, G. F, Abd El-Moaety, M. and Amer, A. A. (2009): Some trace elements and antioxidants profile in Ill-thrift Fresian calves. Assiut Veterinary Medical Journal, Faculty of Veterinary Medicine-Assiut, Egypt, 55, 144-153.
25. Ali El-Sebaie, Ali H. Sadiq and Nasr-Eldin M. Aref*, (1999): Clinical approach to neonatal calf diarrhea: II. Prognostic aspect of rehydration therapy. , 5th Cong of Egyptian Society for Cattle Diseases, 28-30/11, Faculty of Veterinary Medicine, Assiut University.
26. Ali El-Sebaie, Ali H. Sadiq and Nasr-Eldin M. Aref* (1999): Clinical approach to neonatal calf diarrhea: I. Relationship between the clinical signs and the severity of acidosis, 5th Cong of Egyptian Society for Cattle Diseases, Faculty of Veterinary Medicine, Assiut University, Faculty of Veterinary Medicine, Assiut University.

DOCTORAL AND MASTER THESES SUPERVISED

1. **Hammad Zaglol Hammad:** Clinical and Laboratory Assessment of Weaning-related Stress and Ill-thriftiness in Buffalo and Cow Calves, Ph.D. Department of Animal Medicine, Faculty of Veterinary Medicine, Assiut University Assiut Egypt, 2015.
2. **Ghada Ahmed Abd-Elal:** Flow Cytometric Cell Counts and Oxidative Stress Associated with Subclinical Mastitis In Dairy Cows. Ph.D., Department of Animal Medicine, Faculty of Veterinary Medicine, Assiut University Assiut Egypt, 2016.
3. **Amal Farag:** Clinical Evaluation and Determination of Some Antioxidants and Immunological Parameters in Vitamin A - Deficient sheep. Ph.D. Department of Animal Medicine, Faculty of Veterinary Medicine, Assiut University Assiut Egypt, 2017
4. **Heba Abdel-Baset Nasr Sayed:** Some Hematological and Biochemical Studies on Diseases of the Compound Stomach in Cattle and Buffalos. MVSc. Department of Animal Medicine, Faculty of Veterinary Medicine, Assiut University Assiut Egypt, 2017.
5. **Shimaa Hassan Mohammed Hasanin,** Coagulopathy and Some Biomarkers Investigations in Acute Abdominal Pain in Equines. MVSc. Department of Animal Medicine, Faculty of Veterinary Medicine, Assiut University Assiut Egypt, 2017.
6. **Hanaa Fawzy Kamaly,** Clinicolaboratory Study on Aerobic Bacterial Enteritis in Neonatal Calves with Special Reference to E. coli Infection. MVSc. Department of Animal Medicine, Faculty of Veterinary Medicine, Assiut University Assiut Egypt, 2017.



7. **Eman Adel Abdel-Rahman:** Oxidant and Antioxidant Levels in Weak Calves Reared By Small House Holder, MVSc. Department of Animal Medicine, Faculty of Veterinary Medicine, Assiut University Assiut Egypt, 2017.
8. **Mahetab Mahdy Mohamed:** Clinical, Hematological and Biochemical Studies on Intestinal Nematodes in Dogs. Department of Animal Medicine, Faculty of Veterinary Medicine, Assiut University Assiut Egypt, 2017.

MASTERS THESES UNDER SUPERVISION

1. **Ahmed Ibrahim Hassanin:** Erythrocytic energy, oxidative stress and stability in post parturient hemoglobinurea, Department of Animal Medicine, Faculty of Veterinary Medicine, Assiut University Assiut Egypt.
2. **Eman Hassan Abdel-naeem:** Cytomorphological Evaluation of Anemia in Dogs, Department of Animal Medicine, Faculty of Veterinary Medicine, Assiut University Assiut Egypt.
3. **Eman Ramadan Mohamed Abdel Mohsen:** Liver Function Tests and Lipid Profile in Post parturient Dairy Cows and Buffaloes, Department of Animal Medicine, Faculty of Veterinary Medicine, Assiut University Assiut Egypt.

RESEARCH FUNDING

Project: STa- ETEC nanovaccine development

- Address: Faculty of Veterinary Medicine, Assiut University-Egypt
- Role: Principal investigator
- Duration: 2014-2016 (2 years)
- Funding organization: Science Technology Development Fund (STDF)-Egypt

Project: STa – Antibodies/Vaccine Project,

- Address: National Food Safety and Toxicology Center, MSU, USA
- Role: Research Assistant/Ph.D. candidate
- Duration: 2007-2008 (2 years)
- Funding organization: National Institute of Health, USA.

PATENT

A patent out of my PhD work has been issued under the title of “Immunogenic *Escherichia coli* Heat-Stable Enterotoxin” (Pub. #: WO/2010/027473, Appl. #: PCT/US2009/004976), USA 2014.

JOURNALS REFEREE

1. Pharmaceutical Sciences, Journal of Developing Drugs, OMICS Group Publishing, USA.
2. Toxins, MDPI Publisher, Switzerland.
3. Scandinavian Journal of Infectious Diseases, Informa Healthcare Publisher, UK, USA.
4. African Journal of Microbiology Research, Academic Journals Publisher Victoria Island, Lagos.
5. WebmedCentral Plus, UK, <http://www.webmedcentral.com>
6. Microbiology and Immunology, Wiley Publisher.



EDITORIAL BOARD

- Guest Associate Editor of Frontiers in Immunotherapies and Vaccines, Lausanne, Switzerland.
- Journal of Vaccines & Vaccination, OMICS Publishing Group, NV, USA.
- SciFedJournal of Immunology, Scientific Federation Publishing, USA.
- Immunology- WebmedCentral Plus, UK.
- International Journal of Veterinary Science and Research, Peertechz Publisher, INDIA.
- Open Access Journal of Veterinary Science & Research, Medwin Publishers, USA.
- Austin Chromatography Journal, Austin Publishing Group, NJ, USA.
- Immunology Research and Therapy Journal, Scientific Literature, USA.

AREA OF RESEARCH INTEREST

1. Enterotoxin- Mediated Diarrheal Diseases and Diarrheal Mechanisms
2. Clinical Immunology
3. Protein Purification and Characterization
4. Acid-Base Balance and Rehydration Therapy

LANGUAGE

1. English (Excellent listening, speaking, reading and writing)
2. Deutsch (Fair)
3. Arabic (native)

COMPUTER SKILLS

1. MS (Word, PowerPoint, Excel)
2. Statistical package software (SPSS)
3. Windows, web page designing and publishing

