

PAULYN TRACY AERNAN (Ph.D.)

Correspondence Address:

Department of Microbiology
Federal University of Agriculture
PMB 2373
Makurdi
Benue State, Nigeria
Tel. +234 7035074574
E-Mail: paulynaernan@gmail.com

RESEARCH

Molecular Characterization of virulent and Extended Spectrum Beta Lactamase producing *Pseudomonas aeruginosa* from asymptomatic bacteriuric pregnant women in Makurdi, Benue State, Nigeria.

Objectives:

- Isolate and identify organisms commonly associated with asymptomatic bacteriuria in pregnant women, attending the antenatal clinic of a tertiary health care Centre in Makurdi.
- Determine the prevalence of asymptomatic bacteriuria in pregnant women attendees of the tertiary health care Centre.
- Evaluate the antibiotic susceptibility profile of *Pseudomonas aeruginosa* isolates.
- Determine the multidrug resistance index (MDRI) in *Pseudomonas aeruginosa* isolates.
- Determine the genetic characteristics of *Pseudomonas aeruginosa* isolates using ERIC- based PCR.
- Determine the presence and prevalence of *alg D*, *las B*, *tox A*, *plc H*, *plc N* and *exo S* virulence genes using singleplex PCR.
- Investigate the presence of Extended Spectrum Beta Lactamase genes in the genomic DNA of *Pseudomonas aeruginosa* isolates using multiplex PCR.

Main Publications

1. **Aernan, P.T** and Umeh, E.U. (2016) Molecular Characterization of Extended- Spectrum Beta-Lactamase (ESBLs) genes in *Pseudomonas aeruginosa* from pregnant women attending a tertiary health centre in Makurdi, Central Nigeria. *International Journal of Scientific and Research Publications*. Vol. 6. Issue 10. Pp. 19-25; ISSN 2250-3153.

This is the first report in Nigeria of ESBLs genes present in genomic DNA and not in genetic mobile element like plasmids or transposons.

2. **Aernan, P.T**, Umeh, E.U. and Nna, E. (2016) Detection of virulence genes in Urinary *Pseudomonas aeruginosa* from pregnant women attending antenatal clinic in Makurdi, Central Nigeria. *Science Research Journal*. Vol 4, Issue 8. ISSN 2201-2796. Pp.57-65. **The first to report the presence of virulence genes in asymptomatic bacteriuric pregnant women in Nigeria.**

3. **Aernan, P.T.**, Umeh, E.U. and Amali O. (2016) Antibiotic Susceptibility pattern of Asymptomatic *Pseudomonas aeruginosa* Bacteriuria in Pregnant women attending a tertiary Health care centre in Makurdi, Benue State Central Nigeria. *International Journal of Advanced Research*. Vol 4(8); ISSN 2320-5407 DOI: 1021474/1406. Pp1896-1901.
The first report in Benue State that presented 100% susceptibility to the Quinolone group of antibiotics and highly resistant to the macrolide group of antibiotics.

EMPLOYMENT

Current Position: October 2018: Senior Lecturer (Medical microbiology) Department of Microbiology, Federal University of Agriculture, Makurdi.

Responsibilities: Teaching and supervision of project (Undergraduate and postgraduate).

Previous positions:

1. October 2015- October 2018: **Lecturer I**, Department of Biological Sciences, Federal University of Agriculture, Makurdi.
2. October 2012- October 2015: **Lecturer II**, Department of Biological Sciences, Federal University of Agriculture, Makurdi.

3. April 2009- October 2012: **Assistant Lecturer**, Department of Biological Sciences, Federal University of Agriculture, Makurdi.
4. January 2009- October 2009: **Assistant Lecturer**, Department of Biological Sciences, University of Mkar, Mkar Gboko, Benue State.

Teaching and Supervision

1. General Microbiology and Biology courses at B.Sc level at the Department of Biological Sciences, microbiology unit now Microbiology Department of the Federal University of Agriculture Makurdi. (2009-date).
2. General Microbiology and applied microbiology courses at B.Sc level at the Department of Biological Sciences, University of Mkar, MKar Gboko. (Jan.-Dec. 2009)
3. Medical microbiology courses at the PGD and M.Sc. levels at the Department of Microbiology, Federal University of Agriculture Makurdi.
4. Supervision of B.Sc. student's projects and co-supervision of PGD and M.Sc. thesis in the area of microbiology at the Department of Microbiology, Federal University of agriculture, Makurdi.

MEMBERSHIP/ FELLOWSHIP OF PROFESSIONAL BODIES:

1. Nigeria Society for Microbiology, (NSM). (Member)
2. Parasitology and Public Health Society of Nigeria, (PPSN) (Member)
3. International Research and Development Insitute. (Member)
4. Institute of Policy Management Development. (Fellowship)

PERSONAL INFORMATION

1. PERMANENT HOME ADRESS: NO 4, Fanen Johnson Street, Judges Quarters Extension Makurdi. Benue State.
2. Date of Birth: 20TH September, 1978; Place of birth: Makurdi LGA of Benue State.
3. Nationality: Nigerian; Marital status: Married; Number of Children: five
4. Hobbies: Reading, Travelling, Writing and carrying out Scientific Research.

PUBLICATIONS

1. **Aernan, P.T.**, and Umeh, E.U. (2010) Epidemiologic and Biologic Interactions between Vulvovaginal Candidiasis (VVC) and Staphylococcal Infections among Women attending a Tertiary Health Centre in Makurdi, Benue State. (*Journal of Biological Sciences and Bioconservation* Vol. 2 December) pp39-55.
2. **Aernan, P.T.**, Akande, T and Yange, T.S. (2010) TB/HIV Co-infection Rates among Patients Attending Secondary Health Centres' in Gboko Metropolis of Benue State, Nigeria. *Journal of Medical and Applied BioSciences* Vol. 2 December).pp67-71.
3. T.T.Sar, **P.T. Aernan** and R.S. Houmsou. (2010) H1N1 Influenza Epidemic: Public Health Implications for Nigeria. *International Journal of Virology* 6:1-6.
4. **Paulyn Tracy Aernan**, Terdzungwe Thaddeus Sar, Simon Hiifan Torkula. (2011) Prevalence of Plasmodia and hepatitis B virus co-infection in blood donors at Bishop Murray Medical Centre, Makurdi, Benue State, Nigeria. (*Asian Pacific Journal of Tropical Medicine* 224-226).
5. **Aernan, P.T.**, Agbulu, C.O., Adi, I.A., and Deke, O.S. (2011) Helminth Parasites of Pork Slaughtered in Makurdi, Benue State. (*Journal of Agriculture and Veterinary Sciences* Vol. 3 March). Pp35-38.
6. **Aernan, P.T.**, Ebah, E.E. and Ukange, P. (2011) Microbial Contaminants Associated with fermented milk "NUNU" sold in Makurdi metropolis, Benue State of Nigeria. (*Journal of Science and Multidisciplinary Research* Vol. 3 March).pp 27-34
7. Adi Iorhen. A; C. C. Iheukwumere; C.O. Agbulu, Yaji M.E. and **P.T. Aernan**. (2011) Studies on the Antimicrobial potentials of Hyptis Suaveolens, Hymenocardia Acida and Allium Sativum crude extracts. *International Journal of Bioscience*, Vol 6. pp 1-9.
8. T.Akande, **P.T. Aernan**, A.D. Iorhen and O.C. Nkwokorah.(2012) Effects of Starter Culture on the rate of fermentation of Yoghurt. *Journal of Science and Multidisciplinary Research* vol 4:27-33.
9. **Aernan, P.T.**, Okoh, T and Adejo, O.E. (2014) Microorganisms Associated with Post-Harvest Spoilage of Tomato. (*Lycopersicum esculentum*) in Makurdi, Central Nigeria. (*Nigerian journal of pure and Applied Sciences* ISSN: 0795-25070 Vol. 6.. Pp. 28-34.

10. Yaji, M.E., **Aernan, P.T.**, Sule, M. (2016). Microorganisms Associated with the Spoilage of Cucumber, Garden egg, and Pawpaw in Makurdi Metropolis, Benue State. *International Journal of Recent Research in life Sciences* 3 (1):11 – 18.
11. **Aernan, P.T** and Umeh, E.U. (2016). Molecular Characterization of Extended- Spectrum Beta-Lactamase (ESBLs) genes in *Pseudomonas aeruginosa* from pregnant women attending a tertiary health centre in Makurdi, Central Nigeria. *International Journal of Scientific and Research Publications*. Vol. 6. Issue 10 Pp. 19-25; ISSN 2250-3153.
12. **Aernan, P.T**, Aondofa, T.J, Angbian, T.T. (2016) In-Vitro Antibacterial Activity of Leaf and Stem extract of *Passiflora edulis* (Passion fruit) planted in Federal University of Agriculture Makurdi. Central Nigeria. *International Journal of Science and Research (IJSR)* vol 5. DOI:1021275/ART20161583. pp.499-503.
13. **Aernan, P.T**, Umeh, E.U. and Nna, E. (2016) Detection of virulence genes in Urinary *Pseudomonas aeruginosa* from pregnant women attending antenatal clinic in Makurdi, Central Nigeria. *Science Research Journal*. vol4, Issue 8. ISSN 2201-2796. Pp.57-65.
14. **Aernan, P.T.**, Umeh, E.U. and Amali O. (2016) Antibiotic Susceptibility pattern of Asymptomatic *Pseudomonas aeruginosa* Bacteriuria in Pregnant women attending a tertiary Health care centre in Makurdi, Benue State Central Nigeria. *International Journal of Advanced Research*. Vol 4(8); ISSN 2320-5407 DOI:10.21474/1406.Pp1896-1901.
15. **Aernan, P.T.** Umeh, E.U. and Gberikon, G.M. (2016) Asymptomatic Bacteriuria (ASB) in Pregnant women attending a Tertiary Health Care Centre in Makurdi, Central Nigeria. *International Journal of Innovative Research and Advanced studies*. Vol 3 Issue 9; ISSN:2394-4404.Pp. 189-192.
16. **Aernan, P.T.** PCR Identification of Urinary *Pseudomonas aeruginosa* from Pregnant women attending a tertiary health care centre in Makurdi, Central Nigeria. *The International Journal of Science and Technoledge*. Vol 4 Issue 8.(2016) ISSN 2321-919X.Pp.137-141.
17. **Aernan, P.T.** (2016) Dipstick Urine analysis screening among asymptomatic bacteriuric pregnant women in Makurdi, Central Nigeria. *International Journal of Life Sciences Research*.vol4, Issue 3,pp:115-122. ISSN 2348-3148.

18. Hashimu, G.A. Umeh, E.U. **Aernan, P.T.** Sugun, M.Y, Gyang, M.D. Yerima, and I.N Obinna Nwankiti (2017). Seroprevalence of Brucellosis in Cattle in Central zone of Plateau State, Nigeria. *J.Bio.Innov* 6(2). Pp.194-202. ISSN 2277-8330.
19. Manyi, M.M., **Aernan, P.T.** and Obilikwu, E. (2018) Studies on *Plasmodium falciparum* Infection rates among children less than ten years of age attending Federal Medical centre Makurdi, Benue State, Nigeria. *Journal of Medical And Biological Science Reseach* 4 (2), pp.72-75.
20. G.M. Gberikon, S.A. Golmwen, **P.T. Aernan** (2019). AminoAcids and Vitamins, Determination of Laboratory cultivated and Wild mushrooms (*Agaricus bisporus*) with other protein sources. *International Journal of Current trends in Science and Technology*; Vol 9 (2),pp 20191-20196 ISSN 0976-9730

EDUCATIONAL INSTITUTIONS ATTENDED WITH DATES:

University of Agriculture, Makurdi	-	2009-2017
National Open University of Nigeria (NTI)	-	2014-2015
University of Agriculture, Makurdi	-	2005-2008
Benue State University, Makurdi	-	1998-2002
Queen of the Rosary Sec. Sch.	-	1990-1995
Lower Benue Staff School, Mkd.	-	1983-1989

QUALIFICATION OBTAINED WITH DATES:

Ph.D Medical microbiology, 2017.

PGDE, 2015

M.Sc. Medical microbiology, 2008.

B.Sc Biology, 2002.

S.S.C.E. 1995/ W.A.S.S.C. 2015

F.P.S.L.C. 1989

PRIZES RECEIVED:

Best French Student, Primary section, (L.B.S.S.) 1989

Best Mathematics student, SSII, (Q.R.S.S.) 1994.

Best Graduating student, Dept. of Biological Sciences, (BSU), 2002.

COURSES TAUGHT.

Biology for Physical Sciences, General Biology II, Introductory Microbiology I and II, Biology of Microorganisms, Microbial Pathogenesis, Microbiological Techniques, Bacteriology, Microbial ecology, Virology, Microbial Physiology and biochemistry, Medical Entomology, Aquatic Microbiology, Microbial Genetics, Principles of Public Health & Epidemiology, Soil Microbiology, Fermentation Microbiology, Petroleum microbiology, Industrial microbiology and Food microbiology.

CONFERENCES ATTENDED WITH DATES:

- (1) Nigeria Society for Microbiology, October, 2008, Usman Danfodio University, Sokoto.
- (2) Parasitology and Public Health Society of Nigeria, 2009, Usman Danfodio University, Sokoto.
- (3) Nigeria Society for Microbiology, October, 2010, FUTU, Imo State.
- (4) Nigeria Society for Microbiology, September, 2015, Univ. of Lagos, Lagos State.
- (5) Nigeria Society for Microbiology, December, 2017, ATBU, Bauchi State.
- (6) Nigeria Society for Microbiology, September, 2018, UMYUK, Katsina State.

REFEREES

1. Prof. C.C. Iheukwumere
Department of Botany
University of Agriculture, Makurdi. Benue State.
2. Prof. (Mrs) E.U. Umeh
Head, Department of Microbiology
University of Agriculture, Makurdi. Benue State.