

Ogunbanwo Samuel Temitope, Oloketuyi Sandra F. and Adegoke C.O. mark the start of new Era in Antimicrobials with Louis Pasteur Research Award-2015 in Antimicrobials

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Ogunbanwo Samuel Temitope, Oloketuyi Sandra F. and Adegoke C.O. are helping to cultivate world's future scientists. Under their leadership the research area is surely likely to excel. In historic victory the celebrity scientists: Ogunbanwo Samuel Temitope, Oloketuyi Sandra F. and Adegoke C.O. honored with Louis Pasteur Research Award-2015 in Antimicrobials. Ahead of several thousands competitors, Ogunbanwo Samuel Temitope, Oloketuyi Sandra F. and Adegoke C.O. representing Nigeria won prestigious Louis Pasteur Research Award-2015 in Antimicrobials. Again Nigeria has proved its International leadership via producing brilliant scientists in the form of Ogunbanwo Samuel Temitope, Oloketuyi Sandra F. and Adegoke C.O.. IASR expressed, 'It is a privilege to have such international celebrity from Antimicrobials among us who will shape the future of this domain.' Ogunbanwo Samuel Temitope, Oloketuyi Sandra F. and Adegoke C.O. made International news headlines while IASR announced them among World's 500 Most Influential Microbiologists for Year 2015 on Earth.

Ogunbanwo Samuel Temitope, born on the 3rd of February 1969. He is a native of Owu-Ijebu in Ogun State of Nigeria. He began his academic career as a student at the Lagos State University, Lagos, Nigeria where he obtained B.Sc (Microbiology) degree in 1992. He preceded to University of Ibadan, Nigeria and obtained M.Sc and Ph.D degrees in Microbiology in 1997 and 2003 respectively. He is presently working at the University of Ibadan as a lecturer in the Department of Microbiology, Faculty of Science. He enjoyed teaching and research. His research focus is in the area of food microbiology with emphasis on taxonomy of microorganisms of food origin, starter cultures selection, biopreservation, food safety, probiotic cultures and microbial genetics.

Caleb Oladele Adegoke, born on March 3rd 1976 into the family of Pa and Mrs Adegoke Jacob in Otu Oyo State Itesiwaju Local Govt. He is a graduate of Ambros Ali University Ekpoma, Edo State, Nigeria where he studied Medical Laboratory Science medical (Microbiology option) and passed out in 2003. Later, he proceeded to do M.Sc in Medical Microbiology at Oabisi Onabanjo Ago Iwoye in Ogun State, Nigeria and completed the program in 2012. Currently is undergoing his Ph.D program at the University of Ibadan. My hobby is reading and sport. He is lecturer at Ogun State College of Health Technology Ijebu.

Sandra Folarin Oloketuyi, born on the 21st April, 1991 in the South West, Nigeria. He is a graduate assistant at Joseph Ayo Babalola University, Osun State, Nigeria. She currently resides at the JABU staff quarters, Osun State. She received her Master of Science in Food Microbiology at the University of Ibadan, Oyo State, Nigeria. During her master studies, she worked on the biopreservation of Nigerian white soft unripened cheese 'wara' using bacteriocinogenic *Enterococcus* species. She is currently a member of the Nigerian Society for Microbiology.

Ogunbanwo Samuel Temitope, Oloketuyi Sandra F. and Adegoke C.O. from Nigeria made a historical victory over the international competition and won Louis Pasteur Research Award-2015 in Antimicrobials. Their research was highlighted in international media and gathered a large worldwide attention in scientific circles while it appeared in world's most read journal 'Journal of Antimicrobials'. In their report on Potency of Bacteriocin Produced by *Enterococcus* Species Isolated from Wara a Nigerian White Soft Unripened Cheese against Pathogenic Organisms they mention that Development of antibiotic resistance and antibiotic-induced diseases could tilt the scale towards preference for selecting *Enterococci* isolates from wara and tested for spectrum of their bacteriocin activity against pathogenic organisms in treating infections. *Enterococci* isolation, characterization and screening for bacteriocin production against pathogens were carried out. Effect of pH, temperature and enzymes on the bacteriocin activity was performed followed by the safety assessment of the isolates. *E. mundtii* and *E. durans* produced bacteriocins that had broad spectrum bacteriocin activity against *Bacillus subtilis*, *Bacillus cereus*, *Staphylococcus aureus*, *Listeria monocytogenes*, *Klebsiella pneumonia* and *Escherichia coli*. The bacteriocins were stable at acidic pH range (2-6) and temperature range of 40-100°C. The bacteriocins were partly inactivated by trypsin while catalase and neutralization of pH had no effect on bacteriocin activity showing the proteinoous nature of the metabolites. All the isolates were negative to gelatinase and DNase but two of the isolates (*E. durans* EC7 and *E. faecium* EC12) showed incomplete hemolysis on blood agar and were susceptible to vancomycin indicating its safety. Bacteriocin from *Enterococcus* species could be of interest in preventing infection acquired on the part of the consumers and could serve as potential protective agents to the society. Under their leadership the research area is surely likely to expand beyond the horizons. It will be worthy to explore the further potential under their legacy. Ogunbanwo Samuel Temitope, Oloketuyi Sandra F. and Adegoke C.O. as valuable intellectuals for the Nigeria offer exclusive opportunities for scholars around the world. One of the most attractive weightage for Nigeria is to have the awardees for promotion of the concerned scientific discipline for the benefit of its civilians. Thus Nigeria which has excellent track record to produce brain storming intellectuals, has offered a new extension in terms of Ogunbanwo Samuel Temitope, Oloketuyi Sandra F. and Adegoke C.O. to world.

The potency of bacteriocin produced by the *Enterococcus* species against pathogenic organisms and their stability at varying pH and temperature enhancing its application. The use of bacteriocinogenic enterococci as starter and/or protective cultures in wara processing may offer additional barrier against spoilage and pathogenic microorganisms. Further study can be carried out at molecular level to determine the genes that code for production of bacteriocin for probiotic usage.

E. mundtii and *E. durans* produced bacteriocins that had broad spectrum activity against *Bacillus subtilis*, *Bacillus cereus*, *Staphylococcus aureus*, *Listeria monocytogenes*, *Klebsiella pneumonia* and *Escherichia coli*. The bacteriocins were partly inactivated by trypsin while catalase and neutralization of pH had no effect on bacteriocin activity

showing the proteineous nature of the metabolites. Heating the bacteriocins produced by *E. mundtii* EC11, *E. faecium* EC12 and *E. durans* EC14 for 30 minutes at 40° C, 60° C, 80° C and 100° C did not affect the antimicrobial activity. Bacteriocins were more stable at acidic pH values of 2-6, than at alkaline pH 8-10. The absence of pathogenicity traits such as haemolytic, gelatinase and Dnase activity in the *Enterococcus* species isolated in this work confirmed its safety.

The potential of using bacteriocin as alternative therapy against pathogenic organisms needs to be validated at molecular level by determine the gene responsible for its potency.

The potency of bacteriocin produced by *Enterococcus* species in this work may compel its use as alternative therapy against pathogenic organisms.

In view of antimicrobial resistance of pathogenic organisms there is need for alternative therapy for improved patient management to fight against antibiotic resistance before the situation is out of control. This research was investigated to provide information on the use of bacteriocin as potential agent to inhibit pathogens.

This work was carried out in collaboration between all authors. Ogunbanwo S.T. designed the study and Oloketuyi Sandra F. performed the experimental part. Ogunbanwo S.T. and Adegoke C.O. wrote the protocol, wrote the first draft of the manuscript and managed the literature searches.

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