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Bawa Boya, PhD, Microbiology and Molecular Biology, Laboratory of Biology and Molecular Typing in Microbiology (LBTMM), Department of Biochemistry and Cell Biology, Faculty of Sciences and Techniques, University of Abomey-Calavi, Cotonou, Benin. Bachelor's degree in Microbiology and Application (2012), Master's degree in Microbiology and Food Technology (2016), PhD (2020), at the National University of Abomey Calavi. He has co-authored several publications and has participated in several international and national scientific conferences. From 2011 to 2014, he was granted the Excellence Scholarship from the Government of Benin, University of Abomey-Calavi, Benin.

In 2020, Member of the Think Tank on Antimicrobial Resistance, Geneva International (A consortium of over 60 global experts on antimicrobial resistance (AMR/AMR)). In 2021, Member of the SAHFA-JamboMama group which works on the protection of the health of pregnant women. Winner of the Professor Jacques SIMPORE Prize for the best poster communication of the thematic health research program at the fourth scientific days of the African and Malagasy Council for Higher Education USDC-4}, organized at the Regional Institute of Public Health (IRSP). Ouidah (Benin), December 02-4, 2019. 2019, Best Project Award of the 4th edition of Workshop organized between the University of Tokyo (Japan) and the University of Abomey-Calavi (Benin) on Global Research in Science and Engineering. 2018, Finalist of the 3rd edition of my thesis in 180 seconds contest in Benin.

Project

Resistance and virulence factors of *Salmonella* spp. strains isolated from cholera endemic waters

Salmonella infection is a common bacterial disease that affects the intestinal tract. *Salmonella* bacteria usually live in the intestines of animals and humans and are excreted in the feces. Humans are most often infected through contaminated water or food, such as cholera. Despite having the same modes of transmission, typhoid fever is not studied as a co-infection in cholera epidemics. Our research aims to determine the antibiotic resistance profile and virulence factors of *Salmonella* strains isolated from cholera endemic waters in Benin. To do this, 220 water samples will be collected using the Rodier technique, with 20 samples per commune. For the collection of water samples to be analyzed, 11 cholera endemic communes will be visited, namely Abomey-Calavi, Dassa-Zoumé, Savalou, Djougou, Cotonou, Porto-Novo, Sô-Ava, Parakou, Sèmè-Kpodji, Athiémey and Aguégué. After water sampling, *Salmonella* will be isolated according to standard microbiology methods. Typical *Salmonella* spp. colonies will be confirmed by biochemical tests using the API 20E gallery. All *Salmonella* isolates will be serotyped by agglutination tests based on O and H somatic antisera according to the Kauffmann-White scheme. These isolated *Salmonella* strains will be confirmed by amplification of the 16S rRNA gene region. The presence of resistance genes (str A/ str B, aad A, aad B, aac C, flo F, flo R, cat 1, cat 2, mcr 1, mcr 2, mcr 3 , mcr 4, mcr 5 , aph AI-IAB, aph A1, aph A2, tetA, tet B, tet C, sul 1, sul 2, sul 3, dfr A1, dfr A10 and dfr A12) and virulence

genes (*invA*, *invE*, *himA* and *phoP*, *espvA*, *spvB* and *spvC*, *ToxR*) will be analyzed using specific primer pairs by conventional PCR. These results will be used to implement the guidelines for the control and management of typhoid fever in Benin. In addition, they will be disseminated through feedback workshops to stakeholders and scientific publications.

Key words: Water, *Salmonella spp.*, virulence and resistance factor, Benin