

ANTIBIOTIC RESISTANT BACTERIA ISOLATED FROM BATS IN THE STATE OF CEARÁ

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Bats (Chiroptera) are the second largest order of mammals, distributed worldwide, and are known as natural reservoirs of many pathogens, thus, have been associated with spillover events. Brazil harbours approximately 15% of bat species diversity. Studies in Brazil alert about the increasing proximity between bats and humans in urban areas, a factor that may contribute to new outbreaks of zoonotic pathogens. An important public health problem is the increasing rates of antibiotic resistance, which have associated with the inappropriate use of antimicrobials. As of today, only two studies have reported isolates of antibiotic-resistant bacteria from Brazilian bats from South and Southeast regions. The aim of this study was to report resistant bacteria isolated from the oral cavity, rectum and feces of bats in Ceará (CE) state, Northeast Brazil. Protocol numbers, SISBIO 76351-1, CEUA 4291150121. Samples were collected in 2021, in the city of Pacatuba, from eighteen bats belonging to seven different species, with three distinct dietary habits. Samples consisted of swabs (oropharynx and rectum) and guano, which were transported in saline solution (0.9%) and in sterile dry falcon tubes, respectively. Then samples were centrifuged at 3000 RPM/ten minutes, seeded on MacConkey and Columbia blood agar (5%), which were incubated at 37°C/24h. Bacterial isolates were initially identified by Gram staining and catalase or oxidase tests for Gram positive (Gp) and Gram negative (Gn) bacteria, respectively. For species identification, bacteria were submitted to biochemical tests or automated identification using Walkaway system (Ws). Antimicrobial susceptibility was performed by Kirby-Bauer disk diffusion method or microdilution using Ws. Overall, 46 Gp (cocci, cocci-bacilli or bacilli) and nineteen Gn bacilli were recovered. The most prevalent cocci species was *Staphylococcus xylosus* (26%) from oral swabs and guano; fermenting Gn was *E. coli* (35.7%), mainly from guano, while *Pseudomonas fluorescens/putida* complex the most non-fermenting Gn, from guano. Concerning antimicrobial susceptibility, 47.4% of Gn strains were resistant to at least one drug, and 15.8% were multi-resistant. As for Gp cocci, 73.3% were resistant to at least one drug and 33.3% were multi-resistant, including β -lactamase producers. These unprecedented findings of antimicrobial resistance in bacteria from bats from CE emphasizes the importance to study their commensal bacteria, especially with the scarce data.

Keywords: bats, bacteria, resistance, Ceará

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