

TITLE: ANTIMICROBIAL RESISTANCE IN ENTEROBACTERALES OF BATS (CHIROPTERA, MAMMALIA) FROM THE URBAN REGION OF SÃO PAULO, SP, BRAZIL

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ABSTRACT:

Bats have a wide range of biological functions to maintain the balance of the ecosystem. However, they are considered potential reservoirs of clinically significant and resistant pathogens, making epidemiological surveillance necessary in the One Health context. This research aimed to study the antimicrobial resistance profile of Enterobacterales of fecal samples of insectivorous and frugivorous bats of São Paulo. Rectal swab samples of 14 bats (*Sturnira lillium*, *Myotis* cf. *nigricans*, *Artibeus fimbriatus*, *A. lituratus*, *Platyrrhinus lineatus*) of different ages and sex were collected. All bats were captured using mist nets according to availability in natural and artificial shelters and forest fragments in the urban and rural area of São Paulo, Brazil. Each swab was placed in peptone water and incubated at 37 °C under aerobic conditions for 12 h. Then, 10 µl of each sample were streaked on 5% sheep blood agar plates, MacConkey agar plates, and XLT4 agar plates, followed by incubation at 37 °C under aerobic conditions for 24 hours. Species were confirmed using MALDI-TOF. All isolates were subjected to antimicrobial susceptibility test using the disk-diffusion tests according to the Clinical Laboratory Standards Institute guidelines with the following drugs: aztreonam (30 µg), sulfonamide-trimethoprim (25 µg), amoxicillin-clavulanate (20/10 µg), cefepime (30 µg), cefotaxime (30 µg), ceftriaxone (30 µg), ceftazidime (30 µg), ertapenem (10 µg), imipenem (10 µg), meropenem (10 µg), gentamicin (10 µg), tetracycline (30 µg), ciprofloxacin (5 µg), and nalidixic acid (30 µg). Twenty-four isolates of 10 species were obtained [*E. coli* (N=9), *S. marcescens* (N=3), *K. pneumoniae* (N=1), *C. freundii* (N=4), *K. oxytoca* (N=2), *M. morgani* (N=1), *K. ascorbata* (N=1), *E. asburiae* (n=1), *A. caviae* (N=1), *C. youngae* (N=1)]. Four isolates (16.7%) were resistant to amoxicillin-clavulanate acid [*S. marcescens* (N=1), *C. freundii* (N=1), *M. morgani* (N=1), *E. asburiae* (N=1)]. Three isolates (12.5%) showed the presence of AmpC [*C. freundii* (N=2), *E. asburiae* (N=1)], and two strains of *S. marcescens* (8.3%) were resistant to tetracycline. No multidrug-resistant or ESBL-producing bacteria were detected. These preliminary results show low antimicrobial resistance profiles in Enterobacterales recovered from bats of São Paulo. The presence of clinically important pathogens in wildlife highlights the urgent need for epidemiological surveillance in the One Health context.

Keywords: Chiropteran, Antimicrobial resistance; AmpC; One Health; Bacterial zoonosis

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