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**Detection of zoonotic agents in vampire bats and urban bats in Brazil: unraveling the reservoir during the COVID-19 pandemic**

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**Abstract:**

**Background/Objective:** Reservoirs are living organisms that carry pathogens, harboring them chronically while suffering little or no disease. Bats are classic examples, acting as reservoirs for thousands of years. The aim of this study was to detect, in the organs of 203 bats, zoonotic agents responsible for diseases that are prevalent in Brazil and have been neglected during the COVID-19 pandemic.

**Methods:** The samples of fruit bats and insectivorous bats came from animals that had fallen into people’s homes in urban areas and were sent alive by the municipalities for rabies diagnosis. The samples of vampire bats were obtained in conjunction with the Agricultural Defense Office (EDA), which carries out active rabies surveillance work in the state of São Paulo. After removal of the brain for rabies diagnosis, fragments of the heart, spleen, lungs, liver, intestines and kidneys were collected aseptically for investigation. Real-time PCR and conventional PCR followed by genetic sequencing protocols were used to detect the pathogens.

**Results:** DNA of *Trypanosoma cruzi*, which causes Chagas disease, was detected in 2.97% of the bats. DNA of *Leishmania infantum*, which causes visceral leishmaniasis, was detected in 1.97%. DNA of *Leishmania amazonensis*, which causes tegumentary leishmaniasis, was detected in 2.46%. DNA of *Bartonella henselae*, which causes cat-scratch disease, was detected in 4%. RNA of rabies virus was detected in 3.92%. DNA from *Coxiella burnetii* and *Rickettsia rickettsii*, which cause Q fever and Brazilian spotted fever respectively, was not detected.

**Conclusion:** Ecological imbalance undoubtedly leads to the emergence of new infection conditions, where microorganisms find species that are not adapted to their pathogenicity mechanisms. Changes in ecosystems, such as deforestation, urbanization, climate change and environmental degradation, can lead to an increase in find between wildlife and humans. The potential of bats as possible transmission agents for humans needs to be investigated.

**Keywords:** emerging disease; molecular epidemiology; qPCR; Chiroptera.

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