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Pathogen screening of brown rats from Iran

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Norway rats (*Rattus norvegicus*) are synanthropic rodents associated with a wide variety of pathogens. In Iran, limited information exists on the prevalence and diversity of zoonotic pathogens in commensal rodents. In this study, approximately 100 wild Norway rats from the capital Tehran were screened by RT-PCR and PCR assays for the presence of various bacterial and viral agents.

Five viral and three bacterial agents were detected, including four zoonotic agents. The most prevalent RNA viruses were murine kobuvirus-1 (MuKV1), rat astrovirus (RAstV), and rat hepatitis E virus, with several animals being coinfected with these viruses. *Leptospira interrogans* DNA was found in about 6% of rats, while *Bartonella* spp. DNA was found in 14% of rats. *Streptobacillus moniliformis* DNA was detected in 14.3% of faecal samples. *Rattus norvegicus* polyomavirus 1 (RnorPyV1) DNA was detected at very low prevalence.

The high prevalence of some zoonotic and animal pathogens may have implications for local communities. Genome characterization of these pathogens provide a better understanding of their genomic diversity in this region and may improve diagnostic capabilities. A future One Health approach, integrating pathogens in humans, animals, and the environment, would allow for a greater understanding of rat-borne zoonotic infection risk in this city.

Keywords

Rattus norvegicus, pathogens, viruses, zoonoses

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No, I am not a Junior Scientist.

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