

Molecular Identification of Pneumocystis SPP Isolated from Wild Rats in Tehran, Iran

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Abstract : Pneumocystis carinii pneumonia (PCP) is one of the main causes of morbidity and mortality among immunocompromised and HIV-positive patients and remained one of the most important common opportunistic infections in these individuals in the world. Pneumocystis infection has been reported in many mammals. The aim of this study was to determine the Pneumocystis infection in wild rats as natural reservoirs of this organism in Tehran city, Iran. Fifty three rats (*Rattus rattus*) were live trapped in different areas of Tehran city, Iran. After isolation of their lung tissues and homogenization in sterile conditions, DNA was extracted. DNAs from all of the Pneumocystis species were amplified by pAZ102-H and pAZ102-E primers, and Nested PCR was performed using pAZ102-X and pAZ102-W primers from the initial PCR product for all the species of Pneumocystis. Amplification of the genome revealed the presence of Pneumocystis in the lungs of 17 rats (32%) through a PCR product with a bandwidth of 346 bp. In the Nested PCR amplification, from the PCR product of 53 rats, 64.2% of the samples were positive with a bandwidth of 261bp. Pneumocystis SPP infestation is highly prevalent among wild rats in Tehran city, indicating the existence of infection in the natural ecosystem of these rodents. As a host, rat plays an important role in the transmission of the microorganism in the world.

Keywords : pneumocystis SPP, *rattus rattus*, nested PCR, Tehran

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