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Isolation, Detection and Seroprevalence of Leptospira spp. in the urban rat population of Kuala Lumpur, Malaysia.
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Leptospirosis, an infectious disease that affects both humans and animals, is considered one of the common zoonotic disease worldwide, including Malaysia. One of the reservoirs of this pathogen is the rodents. However, there is a paucity of information of the disease reservoirs in the rat population, which is considered the principal maintenance host of Leptospira spp. in Malaysia. Therefore, the objective of this study was to evaluate the prevalence of leptospirosis in the urban rat population in Kuala Lumpur. A total of 300 urban rats were trapped from surrounding areas in Kuala Lumpur and tested for the seroprevalence using the microscopic agglutination test (MAT). The isolation was carried out by the inoculation of blood, urine and kidney samples of the rats into Ellinghausen McCullough Johnson Harris (EMJH) medium, incubated at 30ºC for at least 6 weeks and examined under dark field microscope with intervals of 10 days to check the growth. Positive samples were then confirmed by Polymerase Chain Reaction (PCR) technique using the G1/G2 primers to target secY gene from pathogenic Leptospira isolates. MAT confirmed two serovars present here in the urban rat population with 20 (6.67%) isolates were the pathogenic Leptospira species. L. borgpetersenii serovar Javanica was the predominant serovar found in 17 (85%) isolates, and L. interrogans serovar Bataviae found in 3 (15%) isolates. We conclude that these two Leptospira serovars are the major serovars circulating among the rat population in KL areas and may cause leptospirosis cases in the future. Thus, appropriate precautions are needed to prevent the spreading of this disease in human population in these areas.
Key words: Leptospirosis, Isolation, PCR, MAT.