

UNIVERSITI TEKNOLOGI MARA

**Serological Prevalence of Pathogenic *Leptospira* in
Rodents from Urban Setting in Kuala Lumpur**

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**Project paper submitted in partial fulfillment of the requirements for
the degree of Bachelor in Environmental health and Safety (Hons.)**


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Declaration by student

Project entitled "Serological Prevalence of Pathogenic *Leptospira* Sp. in Rodents from Urban Setting in Kuala Lumpur" is a presentation of my original research work. Wherever contributions of others involved, every effort is made to indicate this clearly, with due reference to the literature and acknowledgement of collaborative research and discussions. The project was done under guidance by Dr.K.Subramaniam as project supervisor and Professor Madya Dr.Siti Khairani Bejo as co-supervisor. It has been submitted to the faculty of health sciences in partial fulfillment of the requirement of Bachelor in Environmental Health and Safety (Hons.)

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Abstract

Serological Prevalence of Pathogenic *Leptospira* Bacteria in Rodents from Urban Setting in Kuala Lumpur

NurulRabiatul Adawiyah Bt Awang

A cross sectional study on serological prevalence of pathogenic *Leptospira* bacteria in rodents from urban setting was done in Kuala Lumpur to identify pathogenic *Leptospira* bacteria in rodents from three selected area in Kuala Lumpur. All captured rodent (n=62) were identified for species identification by using Centres for Disease Control and Prevention Guidelines (2009). The blood samples from rodents were collected by cardiac puncture and the blood serum were stored at -20°C until they were tested by Microscopic Agglutination Test (MAT). The serum-antigen mixtures were examined under a dark-field microscope for agglutination. The prevalence species found from this study comprised of *Rattus norvegicus* (58.1%) (n=36) and *Rattus rattus* (41.9%) (n=26). *R. rattus* (58%) species was dominant in Pudu area compared to *R. norvegicus* (42%). However, *R. norvegicus* was more dominant in Raja bot area and Dato Keramat area compared to *R. rattus*. Percentage of *R. norvegicus* in Raja Bot area was 71% and *R. rattus* 29%. While in Dato Keramat area, percentage of *R. norvegicus* was 80% and *R. rattus* 20%. The study results showed that the prevalence of serum positive titer against leptospiral antigen was 9.7% (n=6). The prevalence rate of *R. Rattus* that were positive with leptospira was about 11.5% (n=3) while *R. norvegicus* was 8.3% (n=3). All serum samples (n=6, 100%) were positive with *Leptospira* Canicola. The results from the analysis showed a p-value = 0.689 which was not significant ($p>0.05$). There was no significant association ($p>0.05$) based on the propotion of *R. rattus* that carried *Leptospira* bacteria compared to *R. norvegicus*. The odds ratio analysis showed that the *Leptospira* antigen in *R. rattus* was 1.435 times higher than *R. norvegicus*.

Keywords: Prevalence, *Leptospira*, cardiac puncture, Microscopic Agglutination Test