

**UNIVERSITI TEKNOLOGI MARA**

**IDENTIFICATION OF BACTERIAL  
PATHOGENS ISOLATED FROM  
COCKROACHES AT SELECTED  
FOOD PREMISES IN SHAH ALAM**

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## ABSTRACT

Cockroaches play an important role in transmission of different diseases either mechanically and biological because they spread and harbour various species of microorganisms. *Escherichia coli* is the ones of the gram – negative bacteria isolated from cockroaches. *Escherichia coli* are key player in bacterial species of faecal contaminations. The present study was carried out to identify the species of cockroaches commonly found in food premises and detect the presence of pathogenic bacterial harboured by the cockroaches. Screening of bacterial species on the cockroaches was performed using standard microbiological and biochemical test (RapID ONE System kit). Validation on the presence of *Escherichia coli* was conducted by PCR and sequencing. In the current study, two species of cockroaches were collected and identified as *Periplanetta americana* (American cockroach) and *Blatta orientalis* (Oriental cockroach). Bacteria were isolated from the cockroaches using Nutrient, MacConkey and Xylose Lysine Deoxycholate agar. Suspected gram-negative bacilli were then proceeded to biochemical test using RapID One test kits. Results from the RapID One Tests indicated that 80 cockroaches from the external body and 56 cockroaches from internal guts have been contaminated by gram-negative bacteria. The highest bacterial species carried by the cockroaches was *Escherichia coli* (11.25% from external body and 21.43% from digestive guts of cockroaches). Since *Escherichia coli* is the major bacteria isolated it was further used validated by PCR using primers namely *lamB* which positively amplified specific band at 309 bp. The result was further confirmed using DNA sequencing. Hence, it was confirmed that the *Escherichia coli* isolated from the cockroaches could be pathogenic hence preventive measures should be taken to control cockroaches in human dwelling, food premises, schools and hospitals.

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