

Identification And Occurrence of Antibiotic Resistance of Staphylococcus Aureus and Escherichia Coli Isolated from Recreational Parks Around Kota Kinabalu, Sabah

ABSTRACT

Staphylococcus aureus (*S. aureus*) and Escherichia coli (*E. coli*) are contributors to infection cases among the Asian population. *S. aureus* is found in the mucous lining of noses and is mainly non-pathogenic while *E. coli*, mostly harmless bacteria, are found in the intestine. Pathogenic strains of both bacteria have adverse effects on the elderly and younger age group of the population. Samples were collected from recreational parks around Kota Kinabalu as they are hotspots frequently visited by families with both age groups. The bacterial samples were isolated and cultured on selective media such as Baird-Parker agar (BPA), Brain Heart Infusion (BHI) agar, MacConkey agar and Eosin-Methylene Blue (EMB) agar. Morphological characteristics of bacterial growth were observed, where *S. aureus* had black-shiny growth in BPA and *E. coli* had a metallic-green sheen in EMB agar. The suspected bacteria samples were then stained and viewed under a light microscope. *S. aureus* was identified as gram-positive, stained violet with a circular shape and clustered appearance. *E. coli* was identified as gram-negative, stained red, rod-shaped with 2 – 3 bacterial alignments. Antibiotic resistance test resulted in *S. aureus* and *E. coli* samples did not display 100% resistance among 4 antibiotics tested (ampicillin, penicillin, tetracycline and chloramphenicol). Most of the bacteria samples were a minimum inhibitory of 0.1 mg/mL of antibiotic concentration. These results provide a foundation for further research on identifying bacterial strains using molecular methods. The findings can then be used to disseminate information to the public to create awareness of potential disease outbreaks in the city.