

## DEVELOPMENT OF A NEW *PSEUDOMONAS* AGAR MEDIUM CONTAINING BENZALKONIUM CHLORIDE IN CETRIMIDE AGAR

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*Pseudomonas* commonly founds in the nature and some species are pathogens for humans, animals and plants. Some species of *Pseudomonas* are resistant to many antibiotics. Various studies have revealed that benzalkonium chloride (BC) has inhibitory effect against many Gram negative and Gram positive bacteria but has not significant effect on *Pseudomonas aeruginosa*. Cetrimide Agar medium is recommended for the enumeration of *P. aeruginosa* in water samples but the bottled water industry claimed that the selectivity of this medium is not enough for the isolation of *P. aeruginosa*. The aim of this research is designing a more selective medium for *P. aeruginosa*. Raw water samples were provided from various bottled water companies. *P. aeruginosa* ATCC 27853 was used as the control strain. Total 28 isolates (3 *Burkholderia pseudomallei*, 6 *P. fluorescens-35*, 18 *P. aeruginosa*, 1 *P. fluorescens-25* strains) were obtained from Cetrimide Agar and identified by biochemical tests. All the bacteria were inoculated in Cetrimide Agar (Merck) plates containing 0 µg/mL (as control); 375 µg/mL; 437.5 µg/mL; 500 µg/mL; 562.5 µg/mL and 625 µg/mL BC. Petri dishes were incubated at 37°C and 42°C for 24 hours. After incubation Cetrimide Agar + BC plates were evaluated as the presence/ absence of growth. According to the results, 375 µg/mL BC was enough for the suppressing of *B. pseudomallei* at both incubation temperatures. This concentration could not affect the growth of *P. fluorescens-25* at both incubation temperatures but 437.5 µg/mL BC was enough at both temperatures. *P. fluorescens-35* could not grow at 42°C in any concentrations even control. It was suppressed at 500 µg/mL BC. *P. aeruginosa* was growth in all temperature and concentrations. As a conclusion, during *P. aeruginosa* analysis, the growth of accompanying flora may suppress by adding 500 µg/mL BC in Cetrimide Agar and the incubation at the elevated temperature (42°C).

Keywords: *P. aeruginosa*, *B. pseudomallei*, *P. fluorescens-35*, *P. fluorescens-25*, benzalkonium chloride, water, selective medium

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