INFECTIVITY POTENTIAL OF INDUCED VIABLE BUT NONCULTURABLE OVERT PATHOGENIC ENTEROBACTERS

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ABSTRACT

The occurrence of waterborne diseases is increasing throughout the Philippines particularly in Cavite province. Enteric bacteria are responsible for food poisoning and high rate of diarrhea cases. Some of the enteric bacteria enter viable but nonculturable state (VBNC) which can be a public health problem. The study investigated the infectivity potential of induced viable but nonculturable overt pathogenic enterobacters, *Eshcerchia coli*, *Salmonella* sp. and *Shigella* sp. Enteric bacteria were isolated from the ground water of Malagasang, Anabu Kostal, Imus-Cavite. Identification of the isolates was done by streak plate method using Eosin Methylene Blue Agar and Salmonella Shigella Agar and confirmed by API-20E kit. The identified isolated enteric bacteria were subjected to induction of viable but nonculturable state through nutrient deprivation and or heat stress. The results showed that among the 9 water samples, 7 were positive to *E.coli*, 5 for *Salmonella* sp. and 2 for *Shigella* sp. The isolated *Escherichia coli* and *Salmonella* sp. upon subjection to nutrient deprivation and or heat stress were able to enter VBNC state for 15 days. However, the infectivity potential of the induced VBNC bacteria was not observed in animal model (albino mice). No observable symptoms relating to diarrhea were observed such as watery and bloody diarrhea for 2 days. No immediate deaths were recorded. With these results, it can be concluded that the ground water samples of poor quality and the isolated *Escherichia coli* and *Salmonella* sp. that entered VBNC were not infective. The results indicate a need for the province of Cavite to take proper measure in safeguarding public health.

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