

Possibility of Symbiosis between Some Gram-negative Bacteria and Legionella pneumophila

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Abstract :

One of the biotic factors that affect Legionella survival and multiplication is the presence of other organisms. Most documents mentioned to the intracellular proliferation of Legionella in amoebae and ciliates. It is important to define the relationship that may exist between Legionella and other bacteria and the possibility of growth extracellularly in unsterile tap water. The basic experiments involved a comparison for the changes in numbers of Legionella pneumophila that was inoculated alone in sterile dechlorinated tap water with that result from culturing the same strain in the presence of by-products of culturing four different gram-negative bacteria (*Pseudomonas aeruginosa* ATCC 15142; *Proteus mirabilis* ATCC 14153; *Escherichia coli* ATCC 14229 and *Acinetobacter baumannii* ATCC 19606) separately in sterile tap water. The results revealed somewhat variable stimulation effect for bacteria by-products on Legionella pneumophila. The qualitative as well as quantitative variations in the bacterial by-products as a function of variations in strain used and the period allowed to produce the by-products are the variables that affect the results. The first day by-products supporting ability can be arranged in the following descending order: *Prot. mirabilis* – *Ps. aeruginosa* – *A. baumannii*. *E. coli* by-product has no support activity. From the second day till 25th day the descending order appeared as: *Ps. aeruginosa* – *E. coli* – *A. baumannii* – *Prot. mirabilis*.

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