

Legionella pneumophila

Legionella pneumophila was first introduced as a pathogen during an outbreak at the American Legion convention in Philadelphia in 1976.

Description:

Legionella pneumophila is a gram-, motile, non-spore forming coccobacilli. It is catalase +, has polar or lateral flagella, is aerobic, and is a facultative, intracellular pathogen. This bacteria belongs to the subgroup proteobacteria and measures 0.5 micrometers in width and 2 micrometers in length. It can be visualized with the silver staining technique, tolerates a pH range of 5 to 9.2 and is found in freshwater and man-made water systems.

Diseases: Legionnaires' Disease and Pontiac Fever

- ☐ *Legionella pneumophila* is the causative agent of Legionnaires' disease, a potentially fatal form of pneumonia that occurs within the lungs.
- ☐ Legionnaires' disease first starts off as a mild case of a respiratory infection that can develop and change into an acute life-threatening pneumonia.
- ☐ Legionnaires' disease begins with a mild cough malaise, muscle aches, a low fever and gastrointestinal symptoms.
- ☐ The later manifestations include a high fever, alveolitis and bronchiolitis.
- ☐ Lung damage with infiltrated regions can be observed by X-ray radiography
- ☐ Pontiac fever is a milder infection caused by the same type of bacteria. The symptoms of Pontiac fever usually last for 2 to 5 days and may also include fever, headaches, and muscle aches. There is no pneumonia and symptoms go away without treatment.

Life Cycle of *Legionella pneumophila*

- ☐ Environment-
VBNC bacteria
Survival in biofilms
Intracellular growth in protozoa
- ☐ Infection-
Transmission by technical vectors
Inhalation of contaminated aerosols
- ☐ Intracellular replication in macrophages
Uptake of *Legionella*
No phagolysosome fusion
Organelle recruitment
Intracellular replication
Release of *Legionella* by host cell lysis