

Legionella pneumophila



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Order 287876 & NO LEGIONELLA PNEUMOPHILA/LEGIONNAIRE'S DISEASE

Introduction Legionella pneumophila is a microorganism categorized as rod-shaped, enveloped, gram-negative, and aerobic bacteria, whose size may range within 1µm or less (Engelkirk and Burton, 2007). As living organisms, the generation to generation sequence of stages that Legionella pneumophila species undergoes to multiply and develop take place in a process called binary fission. This is a process whereby the full-sized bacteria duplicate its DNA. Subsequently, the organism divides into two equal parts producing two new cells (Miller and Levine, 2003). The whole events happen within living host cells similar to other gram-negative bacteria. On the basis of similarities Legionella pneumophila is classified under Kingdom Prokaryotae (Bacteria), Phylum Proteobacteria, Genus Legionella, and Species Pneumophila (Engelkirk and Burton, 2007).

Body

Legionella pneumophila consisting of 32 identified species are globally found in natural water sources like lagoons, rivers, and streams, and in artificial habitats like air-conditioning systems, chilling structures, evaporating compressors, whirlpools in spas, hot tubs, shower heads, humidifiers, tap water, distillation systems, decorative fountains, misting devices, dust, people, and soil. The microorganisms may be transmitted by direct contact with the infected person, inhalation of dust where the spores are, or direct contact to the identified reservoirs (Engelkirk and Burton, 2007). The pathogenicity of the species was confirmed by the Center for Disease Control and Prevention of the United States of America in 1977 after a year of having infected a host of victims temporarily living in Philadelphia Hotel in 1976. The pathogens were confirmed to have come from the vent of the hotel's

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airconditioning system (hydrosense(R), 2009).

Legionnaire's disease was the name given to the infection caused by the bacteria Legionella pneumophila. The bacteria Legionella pneumophila gained its name from the victims who were Legionnaires, and the first site of infection, the pulmonary system (Engelkirk and Burton, 2007).

Engelkirk and Burton in 2007 mentioned that the disease is characterized by the manifestations of symptoms like " an acute bacterial pneumonia with anorexia, malaise, myalgia, headache, high fever, chills, dry cough followed by productive cough, shortness of breath, diarrhea, pleural and abdominal pain, and 40% fatality rate".

Moreover, Engelkirk and Burton also indicated that the typical diagnostic examination could be done with " sputum, blood, and urine specimens", which could be sent to the Center for Disease Control and Prevention for staining and culture considering that the bacteria stains poorly and requires some growing nutrients like cysteine. Consequently, the authors recommend buffered charcoal yeast extracts as growth medium (Engelkirk and Burton, 2007).

Conclusion

Legionnaire's disease is now known to be typically caused by Legionella pneumophila sp. This could be treated appropriately based on the recommendations of the most recent publication of The Medical Letter or Physicians Desk reference considering that treatment for infectious diseases is normally amended for current developments.

Reference

Engelkirk, Paul G. and Gwendolyn R. W. Burton. Burton's Microbiology for the Health Sciences. United States of America: Lippincott Williams & Wilkins.

<https://assignbuster.com/legionella-pneumophila/>

2007.

Miller, Kenneth R. and Joseph Levine. Biology. New Jersey: Prentice Hall.

2003.

hydrosense(R). Legionnaire's disease. Scotland (SC237881): Springfield,
Linlithgow, EH49 7NX. 10 March 2009

[www. biophysica. com](http://www.biophysica.com)

http://www. hydrosense. biz/index. php/product_information. html rets:

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