

## Legionella Characteristics

Legionella is a gram-negative bacilli named after an outbreak among people attending a convention of the American Legion. Although the bacteria is characterized as a gram-negative bacteria, is often difficult to visualize due to poor gram staining. It requires special medium for growth called charcoal yeast extract. Legionella requires special medium because it requires the presence of iron and cysteine to grow, which is not in common blood agar media and can be readily visualized with silver stain. Legionella is known to be water loving and transmitted via inhalation of mist droplets containing bacteria. Common sources include cooling towers, hot water systems, and fountains. Individuals that are smokers, over 65 years of age, and heavy drinkers are at moderately increased risk of disease. In patients, the organism is commonly detected in the urine using the Legionella Urinary Antigen.



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### Characteristics

#### Bacillus

##### Rod

This bacteria is rod-shaped.

#### Poor Gram Stain

##### Poor Graham-cracker

Although the bacteria is characterized as a gram-negative bacteria, it is often difficult to visualize due to poor gram staining.

#### Charcoal Yeast with Iron and Cysteine

##### Charcoal-in-sink with Iron and Sistine

Legionella requires a special medium for growth called charcoal yeast extract that contains iron and cysteine, which are necessary for growth.

#### Silver Stain

##### Silver Stain

Legionella can be readily visualized with silver stain.

#### Water Sources

##### Source of Water

Legionella is known to be water-loving and transmitted via inhalation of mist droplets containing bacteria. Common sources include cooling towers, A/C units, hot-water systems, and fountains.

#### Smokers and Heavy Drinkers

##### Smoking and Drinking

Smokers over the age of 65 and heavy drinkers are at moderately increased risk of disease.

#### Detect Antigen in Urine

##### Ant-gem in Urinal

This organism is commonly detected in the urine using the Legionella Urinary Antigen, which is advantageous with its rapid result time in hours as opposed to the five-day wait for cultures to result.