

Klebsiella Characteristics

Klebsiella is a gram-negative, oxidase-negative bacilli with a prominent polysaccharide capsule. Infections can lead to a wide range of diseases, including pneumonia and nosocomial urinary tract infections. The polysaccharide capsule is a particularly important virulence mechanism, as it helps evade phagocytosis. This organism can be distinguished from other gram-negative bacilli because it is a fast lactose fermenter, causing growth of red pink colonies on MacConkey agar. This bacteria is also notable for producing large mucoid colonies, due to the large mucoid polysaccharide capsule.



PLAY PICMONIC

Characteristics

Gram-Negative

[Graham-cracker Negative-devil](#)

This is a gram-negative bacterium, which does not retain crystal violet dye when Gram stained due to thin peptidoglycan layer.

Bacilli

[Rod](#)

This bacteria is rod shaped.

Oxidase-Negative

[Wilting Ox-daisy](#)

An oxidase test is used to determine if bacteria produce certain cytochrome c oxidases to help differentiate bacteria. Klebsiella are oxidase-negative bacteria.

Intestinal Flora

[Intestinal Flowers](#)

Klebsiella is part of the normal intestinal flora in around 40% of people.

Antiphagocytic Virulence Factor

[Tied-up Mac-man](#)

The polysaccharide capsule is a particularly important virulence mechanism as it helps evade phagocytosis.

Polysaccharide Capsule

[Polly-sack Capsule](#)

Klebsiella has a large mucoid polysaccharide capsule that has antiphagocytic properties.

Positive Quellung Reaction

[Positive Quail-lungs](#)

A Quellung reaction is a biochemical reaction in which antibodies bind to a bacterial capsule, allowing species with a positive Quellung reaction to be visualized under a microscope. Klebsiella has a positive Quellung reaction.

Mucoid Colonies

[Mucous trail](#)

This bacteria is notable for producing large mucoid colonies due to the large mucoid polysaccharide capsule.

Urease-Positive

[Positive U-eraser](#)

This bacterium has the ability to produce urease, which hydrolyzes urea in the body to ammonia. In a urinary tract infection, this means that the urine becomes more alkaline.

Fast Lactose Fermenter

[Fast Milk-carton Ferns](#)

This organism can be distinguished from other gram-negative bacilli, because it is a fast lactose fermenter, causing growth of red pink colonies on MacConkey agar.

Pink on MacConkey Agar

[Pink Monkey Petri-dish](#)

This organism can be distinguished from other gram-negative bacilli, because it is a fast lactose fermenter, causing growth of red pink colonies on MacConkey agar.