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.



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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.

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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.

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