

Description:

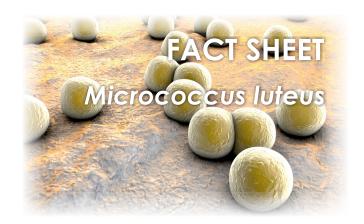
- Micrococcus luteus (M. luteus) is a Gram-positive to Gram-variable, non-motile, coccus, saprotrophic bacterium. It can form in tetrads or irregular clusters but not in chains and belongs to the family Micrococcaceae.
- M. luteus was first known as Micrococcus lysodeikticus and was discovered by Alexander Fleming in 1928.
- Its name stands for: microscopic (micro), of spherical shape (coccus), and yellow (luteus).

Interesting Facts:

- *M. luteus* is found in soil, dust, water, and in human skin flora. It has also been isolated from foods such as milk and goat's cheese.
- This bacterium is often arranged in circular tetrads and forms bright yellow colonies on nutrient agar.
- This bacterium can withstand massive doses of UV radiation and also has the ability to degrade pollutants such as petrol.
- M. luteus played an important part in Fleming's discovery of Lysozyme ('the body's natural antibiotic').
- M. luteus has the ability to show dormancy without forming spores. Unlike other actinobacteria, M. luteus expresses only one resuscitation-promoting factor required for emergence from dormancy, and has few other dormancy-related proteins.
- M. luteus causes odours in humans when breaking down the components of sweat.

Infection:

- M. luteus is considered an opportunistic pathogen that can be responsible for nosocomial infections.
- M. luteus can cause skin infections and is sometimes clinically mistaken for Staphylococcus aureus.
- This bacterium can be transmitted due to poor handwashing practices.
- M. luteus can cause septic shock in immunocompromised people.



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- M. luteus is an atmospheric microorganism commonly found on environmental monitoring plates and it is one of the most common contaminants of lab cultures. It is often observed on agar plates from bioburden testing of pre-sterilisation medical devices.
- The distinct bright yellow organism can be fully identified using identification techniques such as MALDI-ToF (Matrix Assisted Laser Desorption lonization-Time of Flight). It can commonly be misidentified by eye as Staphylococcus aureus due to the golden / yellow colour so identification beyond colony morphology is required.
- Other distinguishing identification features are that M. luteus is urease & catalase positive but coagulase negative.
- Some Micrococcus species are now identified, particularly on newer identification techniques such as MALDI-ToF, as Kocuria sp. This is due to reclassification of some species of Micrococcus.
- Mannitol Salt Agar can be used to culture Micrococcus spp as it is selective for certain Grampositive microorganisms. However, it will also allow growth of Staphylococcus so further identification work must be conducted to form a strong identification of Micrococcus presence.
- If M. luteus is a predominant micro organism found in laboratory, it can be included as a challenge organism for the quality control of in-house media manufacturing.

