

Isolation of bacteria in pure culture

Pure culture consists of only a single type of organism.

Aim:

To identify the bacterial pathogens



Culture methods

Streak plate technique:

*Isolation of bacteria in pure culture from clinical specimen.

Pouring-plate method:

*To differentiate between aerobic and anaerobic bacteria.

Stabbing method:

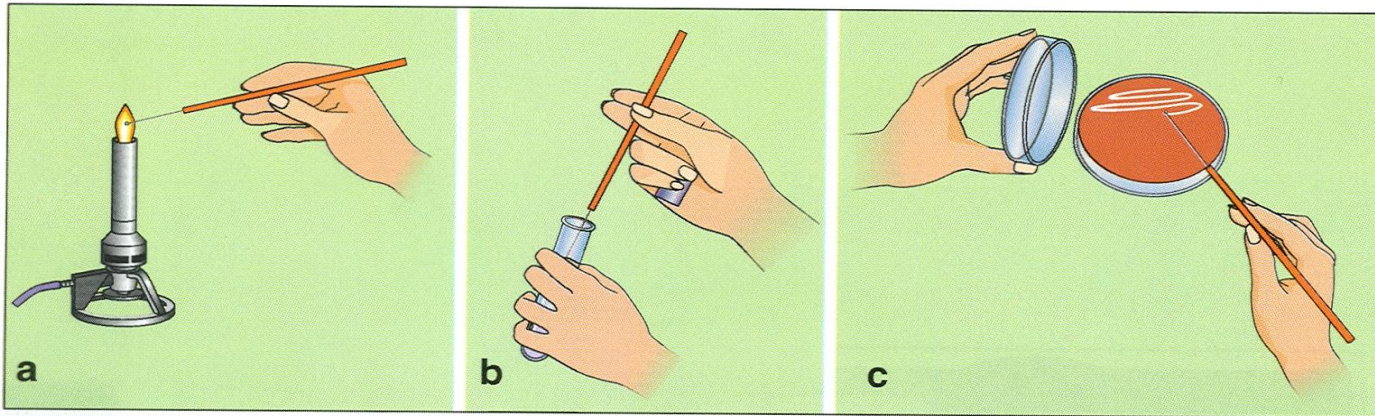
*To differentiate between motile and non-motile bacteria.

Spreading-plate method:

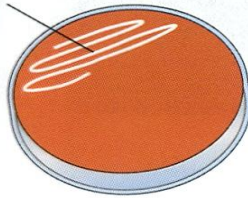
*Quantification of bacteria in liquid cultures, urine sample.

*Swabbing from clinical samples.

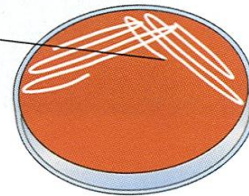
Streak Plate (Quadrant Streak)



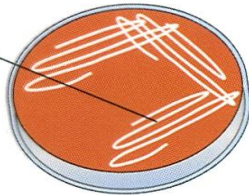
initial inoculum



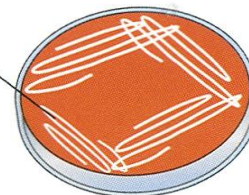
second set of streaks



third set of streaks



fourth set of streaks



d



e

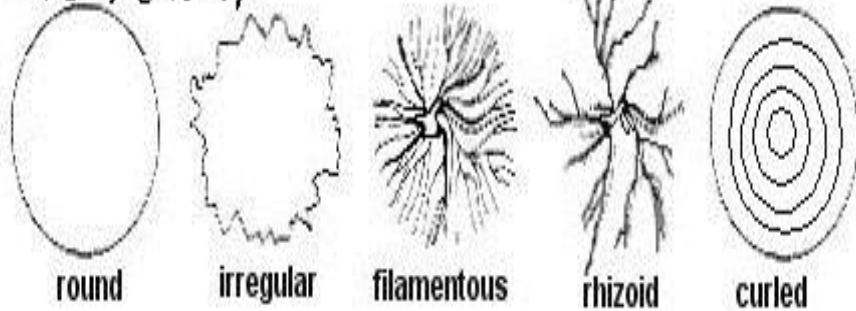
Courtesy Becton Dickinson Microbiology Systems



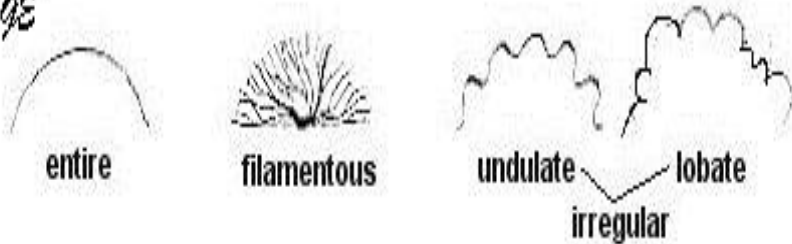
Colony morphology

COLONIAL MORPHOLOGY

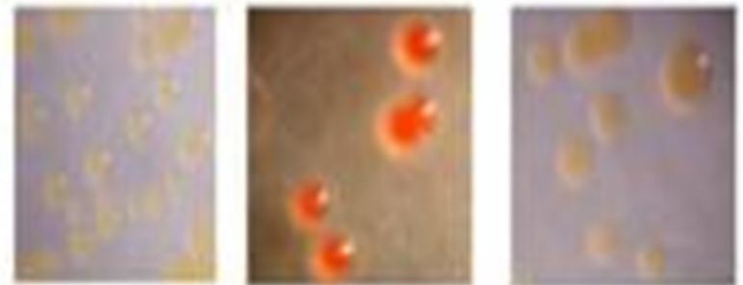
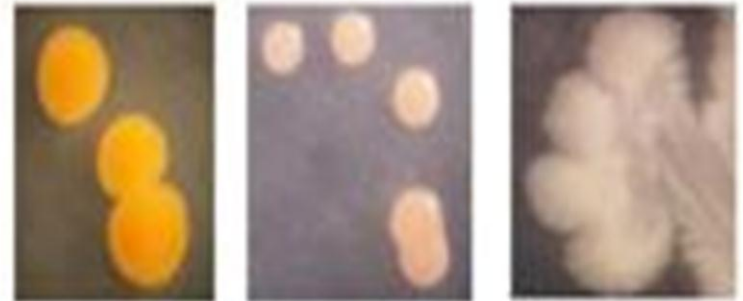
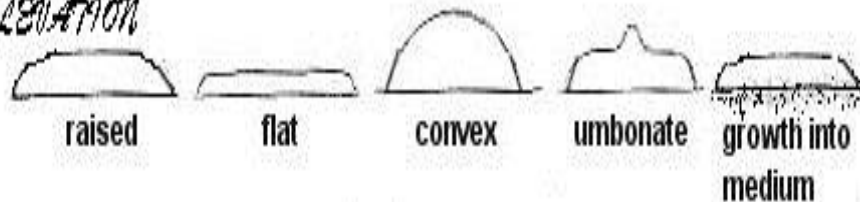
SHAPE OF COLONY



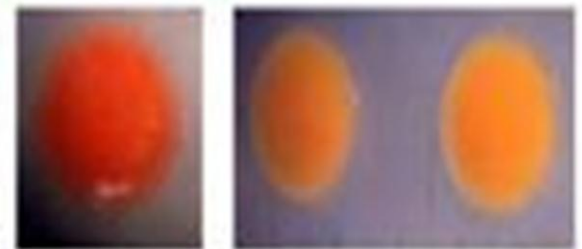
EDGE



ELEVATION



Colony morphology of aerobic isolates



MOTILITY TEST



Negative

Positive

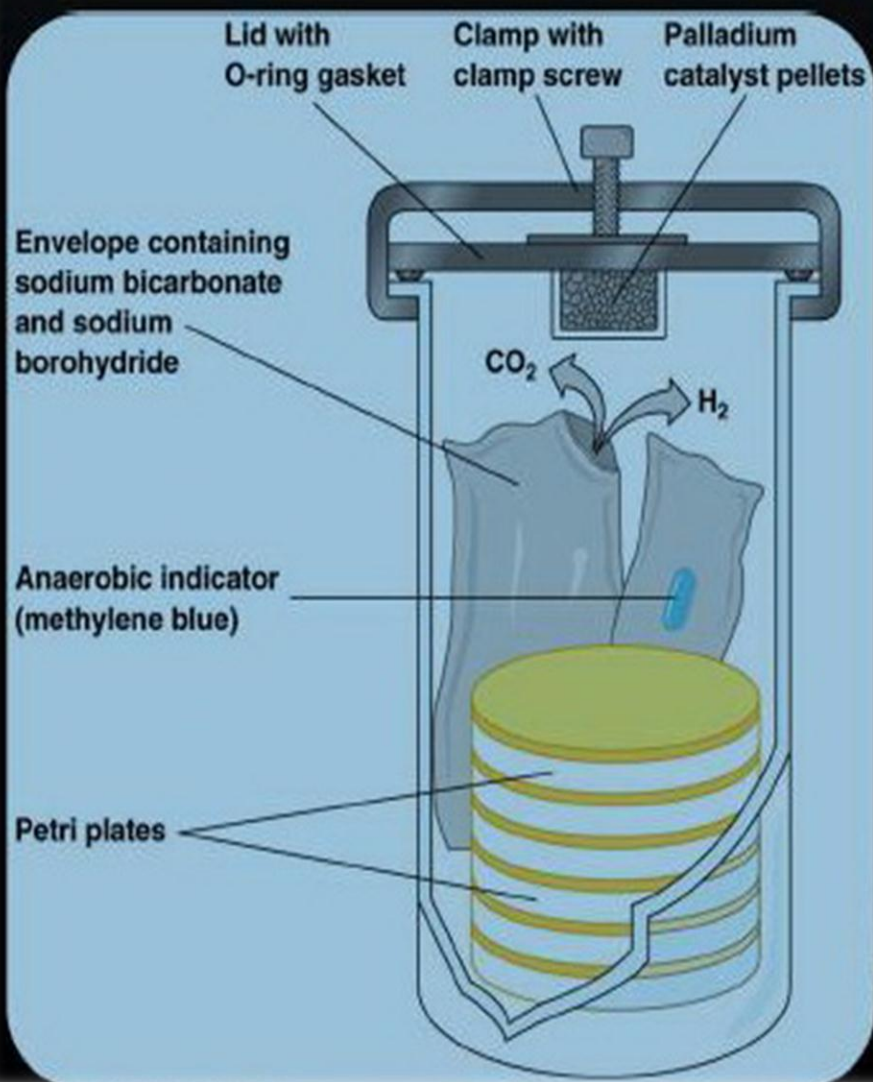
Oxygen

- microbes respond differently to O₂
 - Strict aerobes
 - Strict anaerobes
 - facultative anaerobes (facultative aerobes)
 - Aerotolerant
 - Microaerophiles

- Contain inlet and outlet
- Electrical supply
- Inoculated culture plates
- When electrified palladinised asbestos heating acts as catalyst for combination of hydrogen with residual oxygen causes complete anaerobiasis



GAS PACK



- A disposable envelop contains chemicals which generate hydrogen and carbon dioxide on addition of water
- Inoculated plates are kept in jar
- Water is added hydrogen and carbon dioxide are liberated
- Presence of cold catalyst in the envelop permits the combination of Hydrogen and oxygen to produce anaerobic environment
- Indicator is methylene blue
- Colorless when anaerobic environment.

CANDLE JAR

- Inoculated plates are kept
- Burning candle use up all oxygen
- But a little O_2 is left
- But presence of CO_2 stimulates the most bacterium

