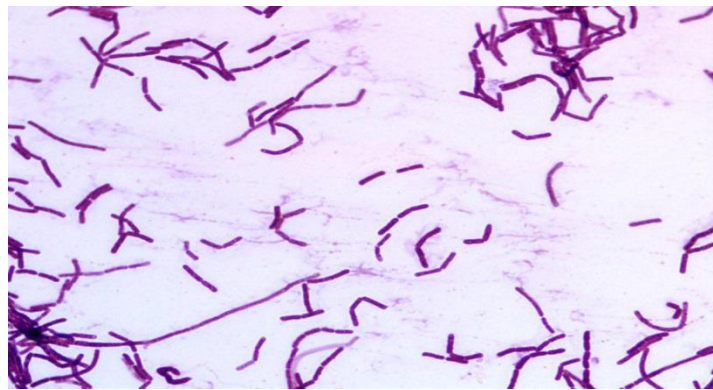


## Lab.12. Gram – positive rods

### *Bacillus* spp.

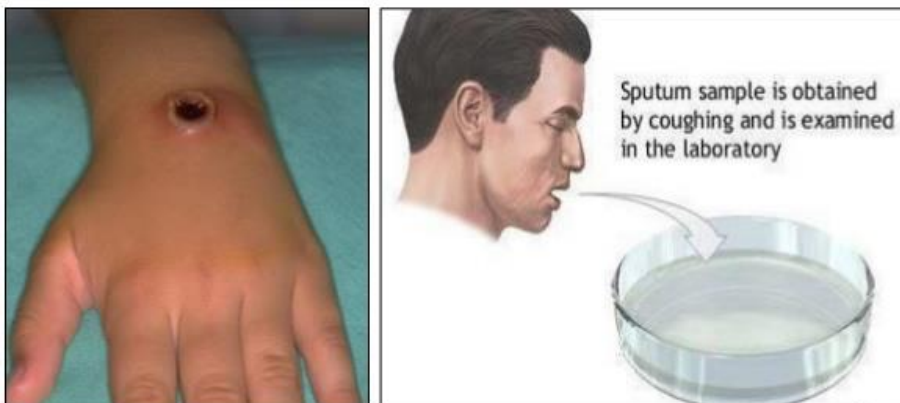
- Gram-positive rods (at least early in growth), in singles or chains
- Aerobic or facultative anaerobic
- Produces endospores aerobically; spore shape and position are variable
- Most are catalase-positive
- Most are motile
- Most are soil saprophytes
- pathogens are *B. anthracis* (anthrax) and *B. cereus* (food poisoning and opportunistic infections)



### *Bacillus anthracis*

#### Specimens

- Dermal lesions
- Sputum



## Culture

Blood agar ( non – haemolytic )



Irregular, round, raised, dull, opaque, greyish white colonies with a frosted glass appearance



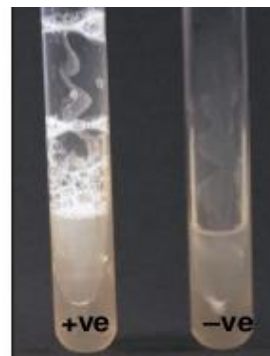
Encapsulation test for *Bacillus anthracis*. The difference in appearance of colonies on bicarbonate agar (smooth colonies on the left) and rough colonies (sheep blood agar on the right) is indicative of capsule.

## Biochemical testing:

- **Catalase +ve** (for rapid differentiation from *Clostridium* spp.)



Slide catalase test



Tube catalase test

- **Gelatin liquefaction**



A gelatinase-positive (+ve) organism is above, and a gelatinase-negative (-ve) organism is below.

***Bacillus cereus***

**Specimens:** stool, vomitus, food, blood.

**Culture:** Blood agar ( $\beta$ - haemolytic ) , colonies both cream to white or grey and have a slight green tinge

isolate *B. cereus* from **feces** & other sources.

