

Acid fast staining

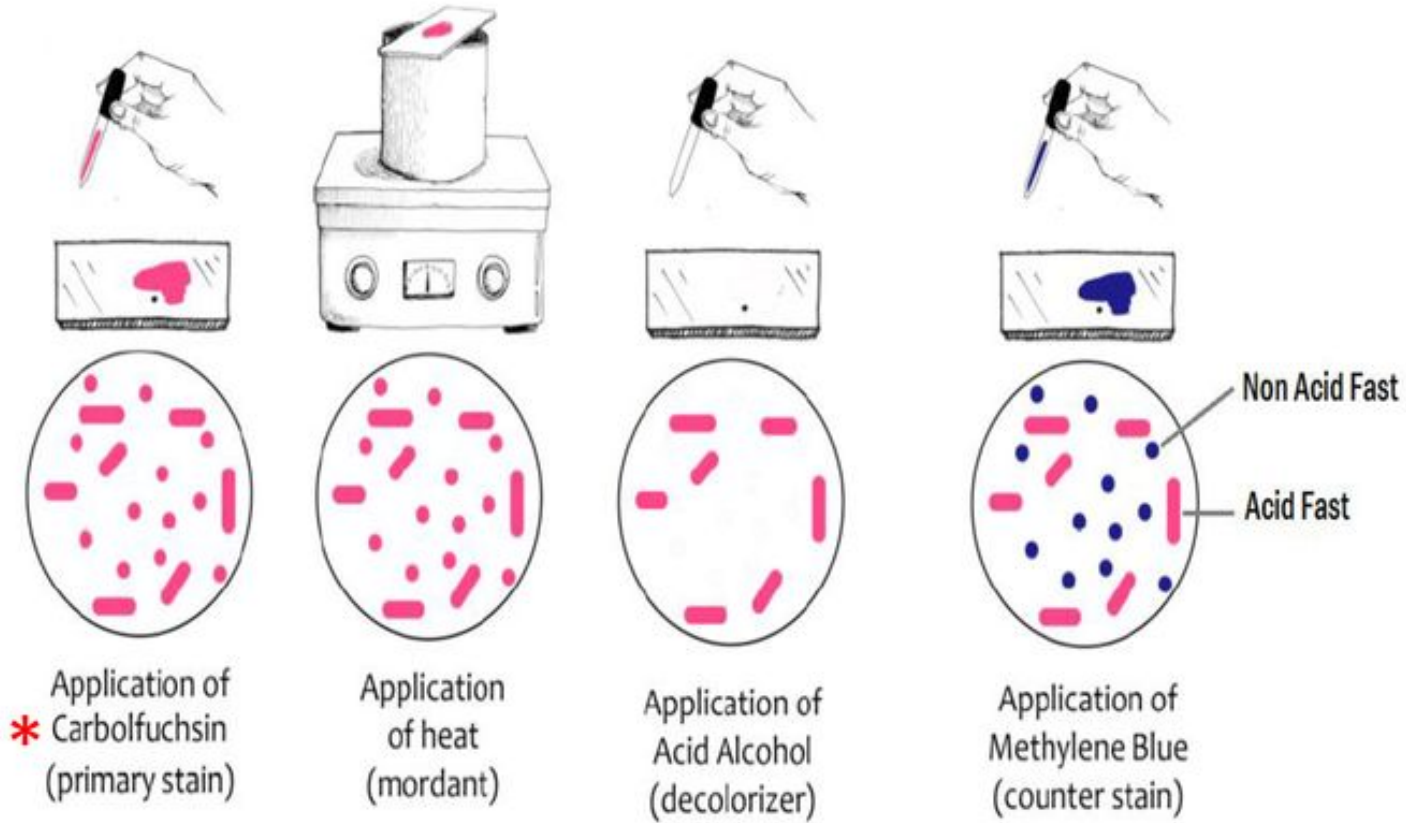
By-

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Acid-fast staining (Ziehl–Neelsen Staining)

- The acid-fast stain is a differential stain used to identify acid-fast organisms such as members of the genus *Mycobacterium* and *Nocardia*.
- Acid-fast organisms are characterized by wax-like, nearly impermeable cell walls; they contain mycolic acid and large amounts of fatty acids, waxes, and complex lipids.
- Acid-fast organisms are highly resistant to disinfectants and dry conditions.
- Because the cell wall is so resistant to most compounds, acid-fast organisms require a special staining technique.
- The primary stain used in acid-fast staining, carbol-fuchsin, is lipid-soluble and contains phenol, which helps the stain penetrate the cell wall.
- This is further assisted by the addition of heat.
- The smear is then rinsed with a very strong decolorizer, which strips the stain from all non-acid-fast cells but does not permeate the cell wall of acid-fast organisms.
- Developed to detect the bacterial species that causes tuberculosis

PRINCIPLE OF ZIEHL-NEELENSEN STAIN



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