

SNS COLLEGE OF ALLIED HEALTH SCIENCE
Affiliated to The Tamil Nadu Dr M.G.R Medical University, Chennai



DEPARTMENT OF PHYSICIAN ASSISTANT

COURSE NAME: CLINICAL MICROBIOLOGY

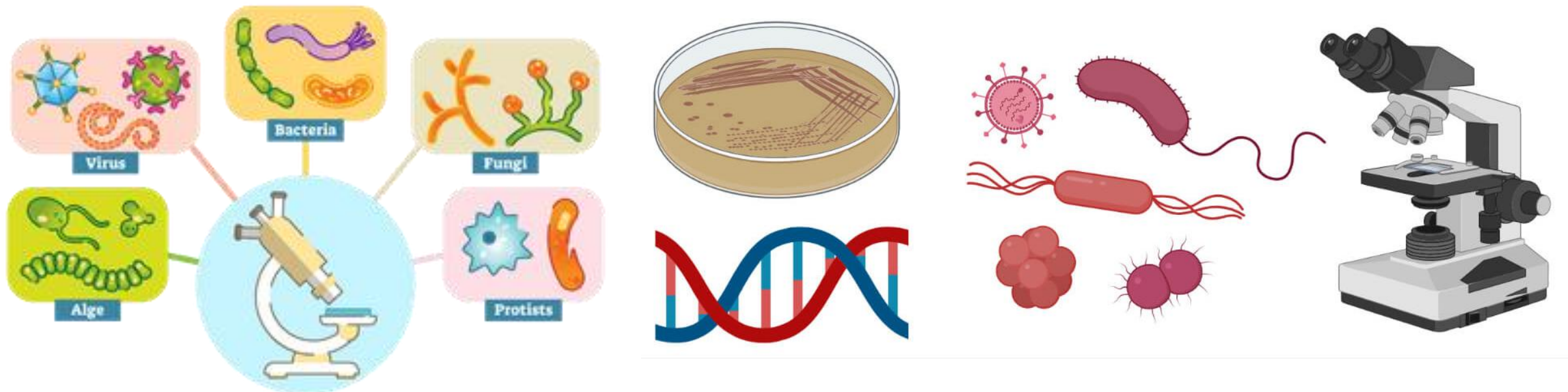
UNIT : 1

TOPIC : HISTORY OF MICROBIOLOGY

FACULTY NAME: MITHRA V

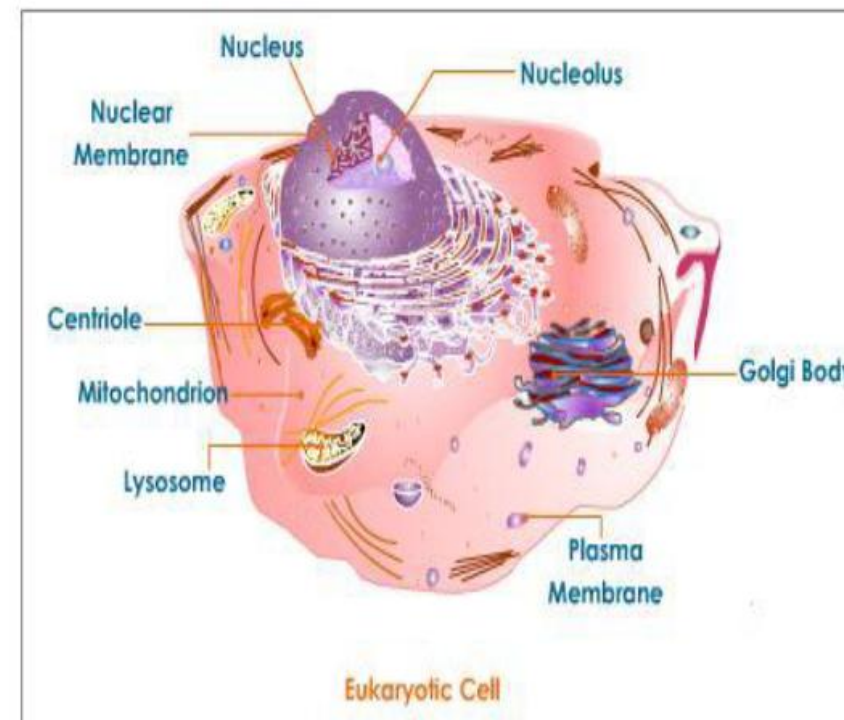
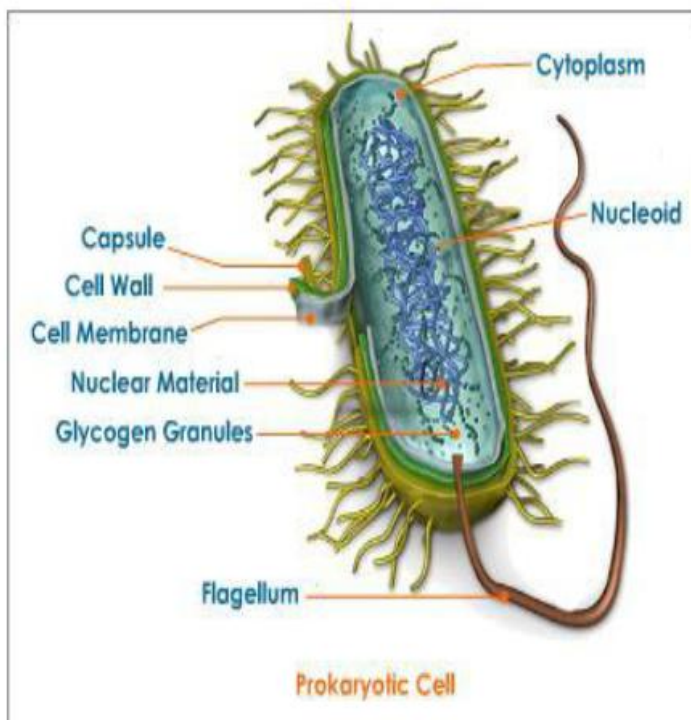
INTRODUCTION (DEFINE)

- **Microbiology:** Study of microorganisms (bacteria, archaea, viruses, fungi, prions, protozoa, algae) Focuses on structure, function, classes, economic importance.
- Key roles in nutrient cycling, biodegradation, food spoilage, disease control, biotechnology.



MEMBERS OF THE MICROBIAL WORLD

- Two cell types based on nucleus:
- **i. Prokaryotes:** No true nucleus, simpler morphology, lack organelles (e.g., bacteria, archaea).
- **ii. Eukaryotes:** Membrane-bound nucleus, complex, larger (e.g., algae, fungi, protozoa, plants, animals).

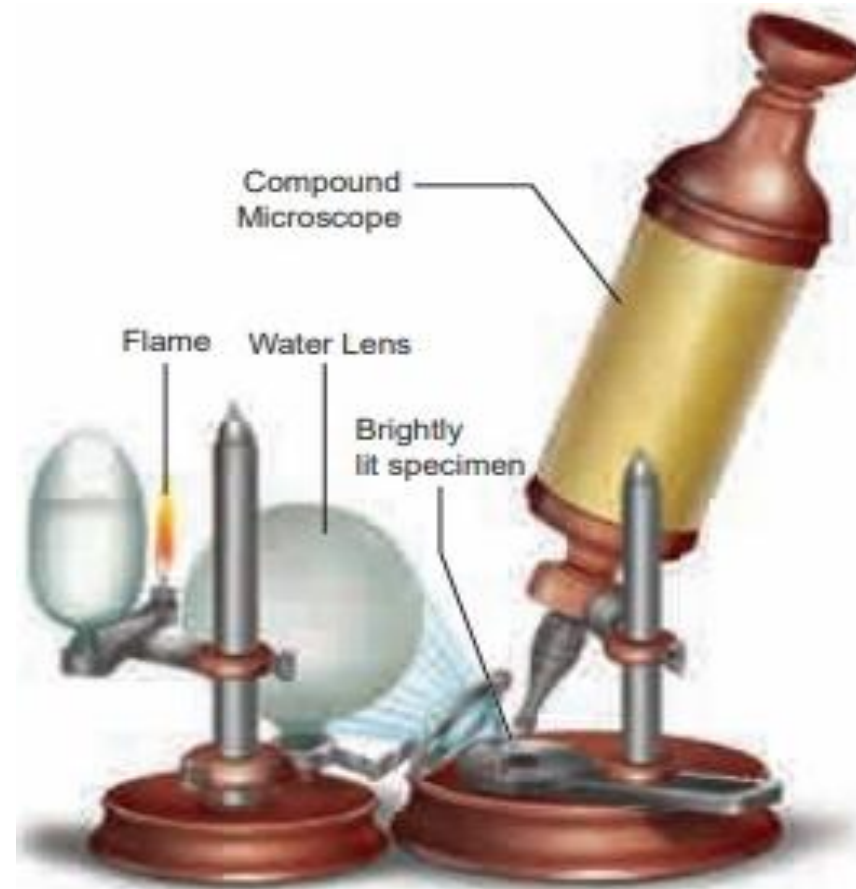


ROBERT HOOKE (1635–1700)

- Discovered cells (honeycomb-like) in cork using 30x magnification microscopes.
- Observed microorganisms.

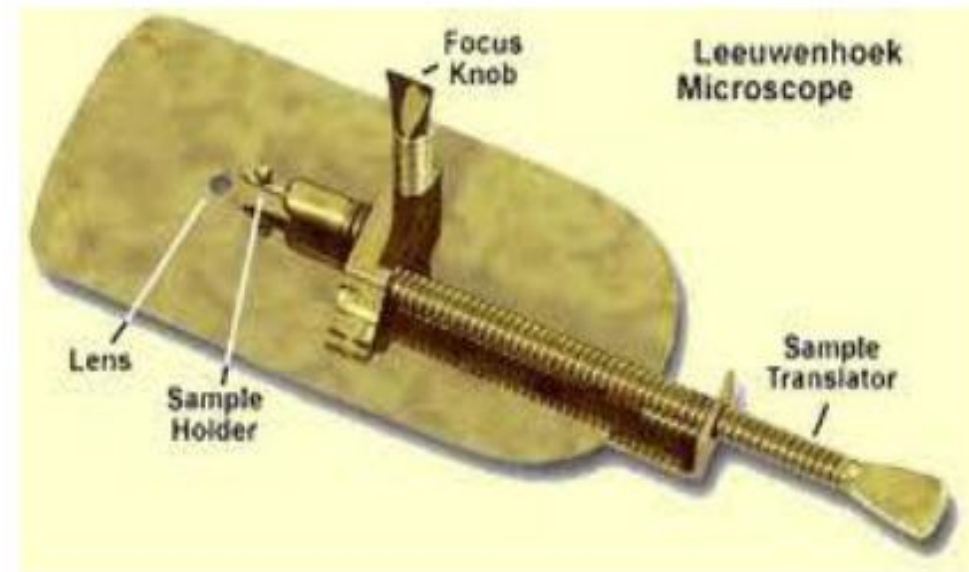


Robert hooke



ANTONIE VAN LEEUWENHOEK (1632–1723)

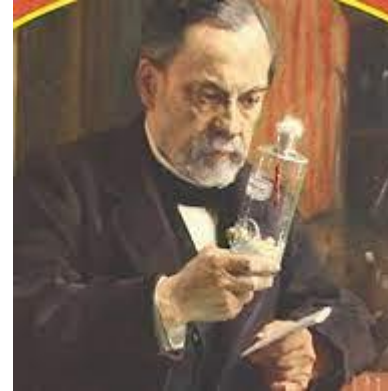
- Father of Microbiology.
- Built simple microscopes (50–300x magnification).
- First to describe protozoa, bacteria, sperm, RBCs, called them “animalcules.”



Leeuwenhoek and his microscope that was developed first

LOUIS PASTEUR (1822–1895)

- Proved biogenesis.
- Disproved spontaneous generation.
- Founded germ theory of disease.
- Developed rabies vaccine, coined “vaccine”
- Introduced sterilization
- Discovered fermentation causes alcohol production
- Developed pasteurization (heating to 50–60°C) to kill pathogens in milk.



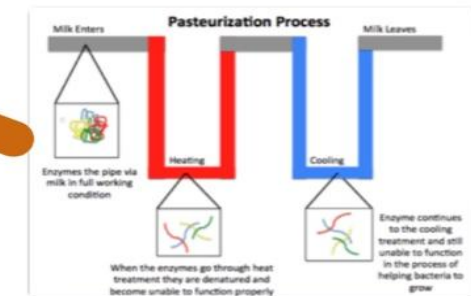
Louis Pasteur discovered that microbes cause food to decay



He found this out by conducting experiments on souring alcohol.



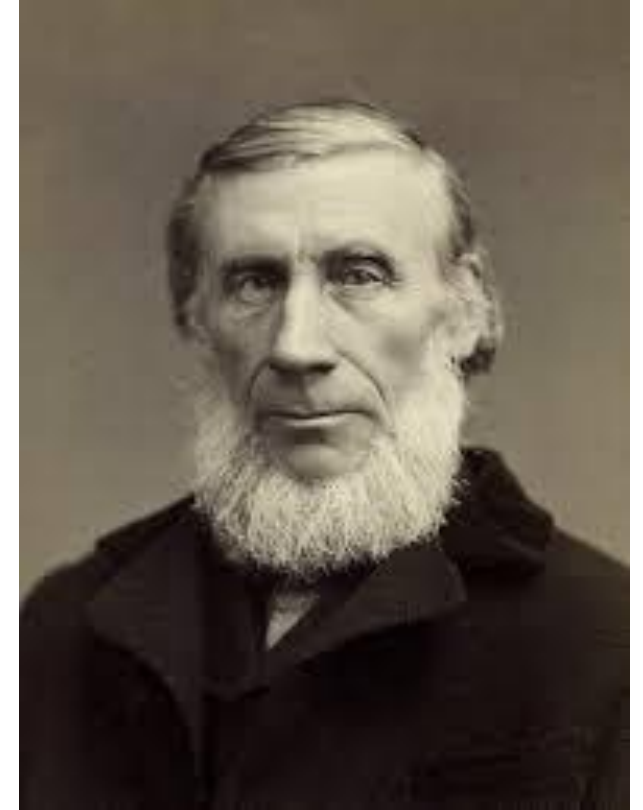
Louis Pasteur used his findings and research to invent a technique which is now called “Pasteurization”.



This is a diagram explaining the process.

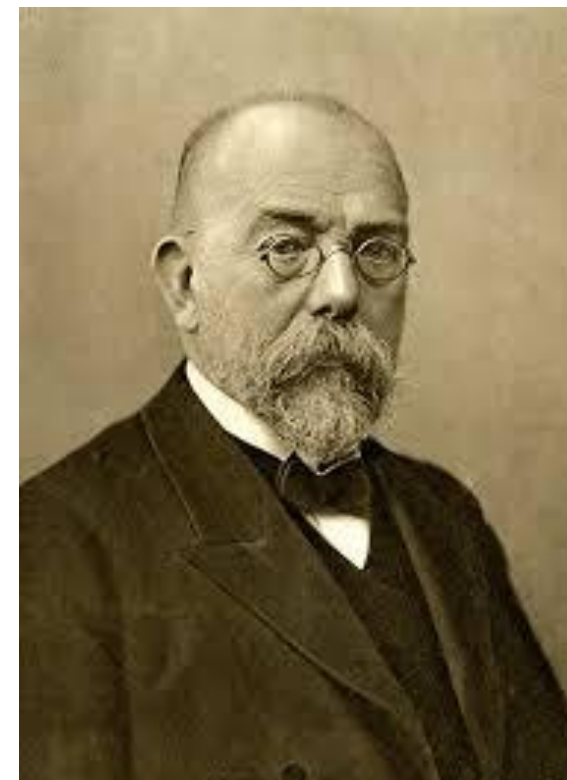
JOHN TYNDALL (1820–1893)

- Developed tyndallization (intermittent sterilization).
- Used dust-free chamber to prove sterile broth remains uncontaminated.
- Killed vegetative cells at 100°C, spores upon germination.



ROBERT KOCH (1843–1912)

- Father of Practical Bacteriology.
- Perfected bacteriological techniques, introduced staining.
- Discovered *Mycobacterium tuberculosis* (Koch's bacillus) and *Vibrio cholerae*.
- Formulated Koch's postulates for proving disease causation.



EDWARD JENNER (1749–1823)

- Developed smallpox vaccine (1796) using cowpox (Vaccinia).
- Observed dairy workers' immunity to smallpox from cowpox exposure.



**Edward Jenner tests
vaccination using cowpox**

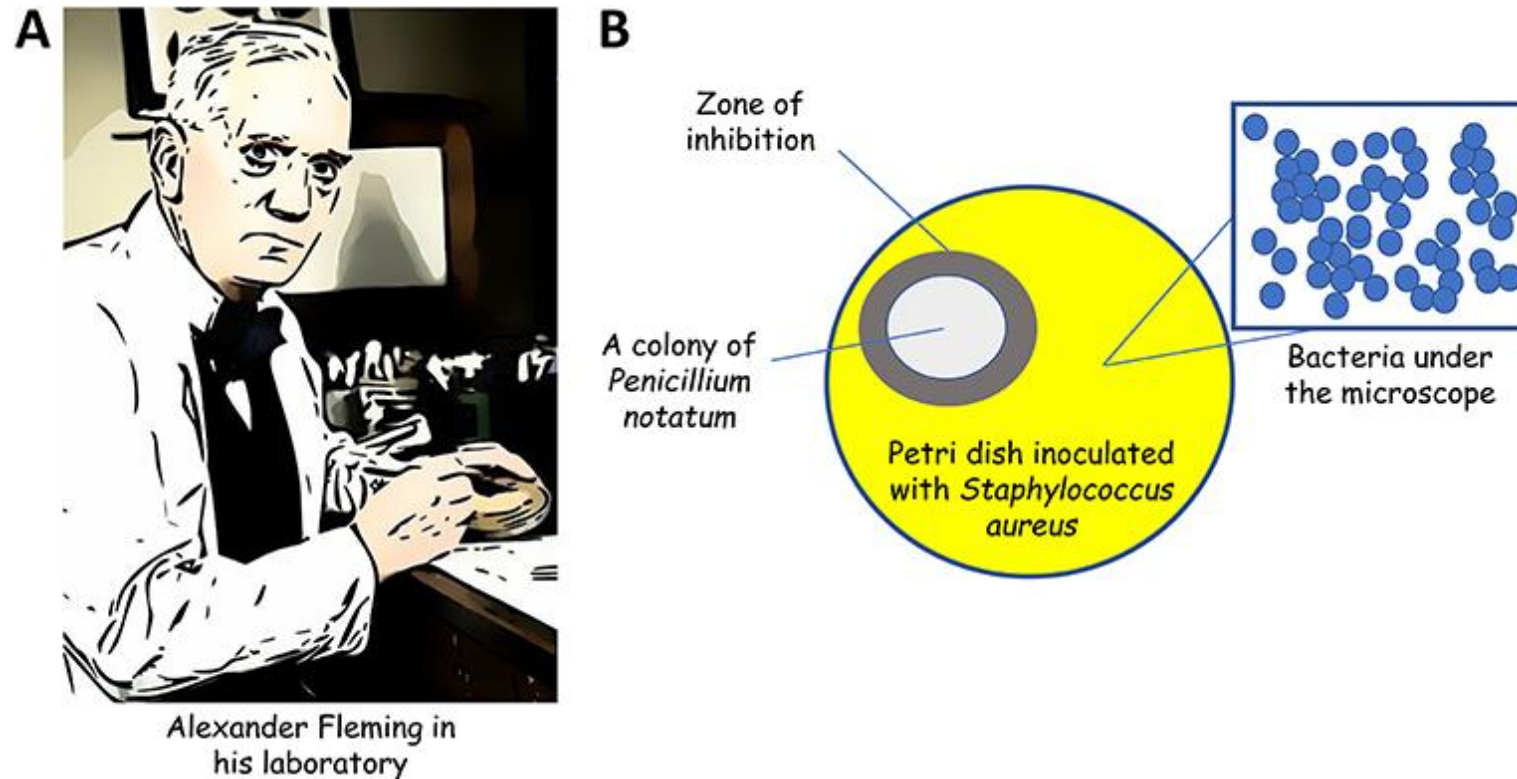
JOSEPH LISTER (1827–1912)

- Father of Antiseptic Surgery.
- Applied Pasteur's germ theory to prevent post-operative sepsis.
- Linked wound infections to atmospheric microbes.

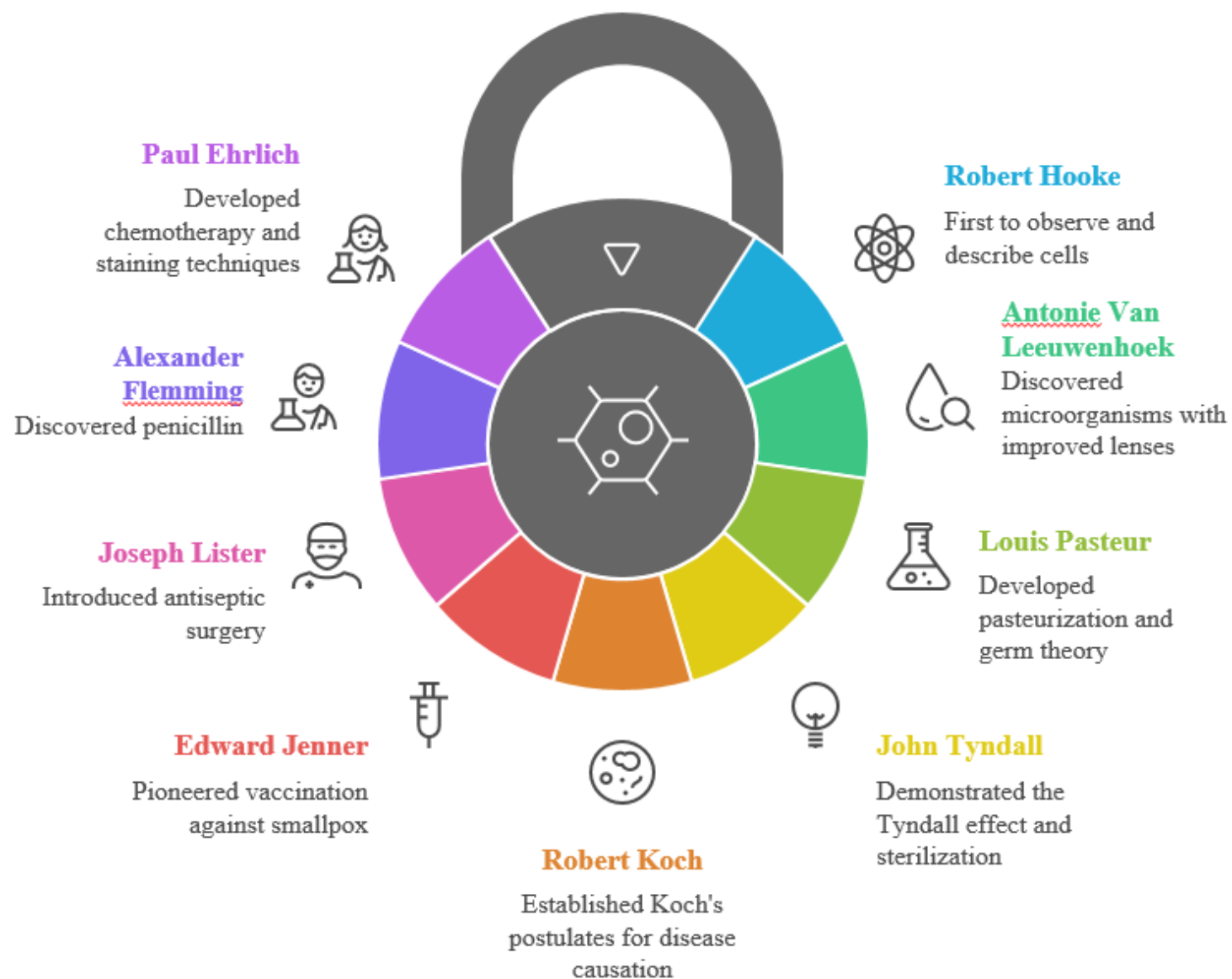


ALEXANDER FLEMING (1881–1955)

- Discovered lysozyme and penicillin.
- Found *Penicillium notatum* mold produced antibacterial penicillin (1929).



SUMMARY



REFERENCES

- Microbiology: An Introduction by Gerard J. Tortora, Berdell R. Funke, Christine L. Case (Pearson, 13th Edition, 2018)
- Medical Microbiology by Patrick R. Murray, Ken S. Rosenthal, Michael A. Pfaller (Elsevier, 9th Edition, 2020)
- Microbe Notes: <https://microbenotes.com/>
- American Society for Microbiology (ASM): <https://asm.org/>
- Todar's Online Book of Bacteriology: <https://textbookofbacteriology.net/>

THANK YOU