

Medical Microbiology

Introduction

Microorganism

-----are generally regarded as living forms that are microscopic in size and simple in structure



light microscope



electron microscope

Classification

1) Non-cellular type

**Virus: no cellular structure;
parasite in living cell;
only contain DNA/RNA.**

2) Prokaryotic type
cell wall , cell membrane, cytoplasm
and nucleoid

Bacterium Mycoplasma
Chlamydia Rickettsia
Spirochete Actinomycete

3) Eukaryotic type
cell wall, cell membrane, nucleus
Fungus

Distribution of Microbes

- 1 . In environments.**
- 2 . In human**

Medical Microbiology

1.research objective-----pathogenic M.

- 1) biological properties**
- 2) pathogenesis and immune response**
- 3) diagnosis and protection**

2. History

Leeuwenhock: invent microscope in 1676 .

Louis Pasteur: pasteurization , Vaccine

Robert Koch: solid medium —> purify
Pathogenic microbe criterion

Lister: disinfection; aseptic technique

Ivanovsky: virus.

Edward Jenner: cowpox/vaccinia

Alexander Fleming: penicillin

3. Modern Medical Microbiology

- 1) Most bacteria were controlled by antibiotics**
- 2) Drug-resistant strain**
- 3) Normal flora—opportunistic pathogens**
- 4) New pathogen: Hp—chronic gastritis.**

HIV----AIDS

Coronavirus---SARS

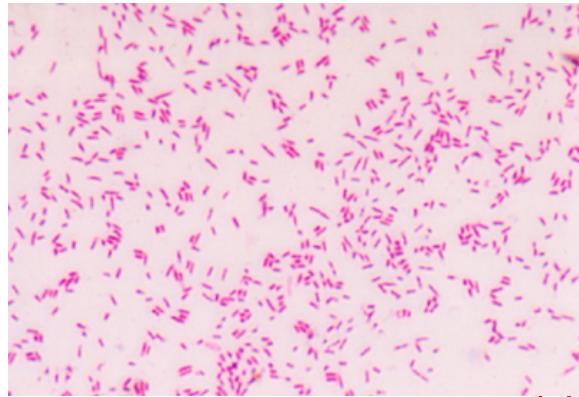
avian influenza

prion---TSEs

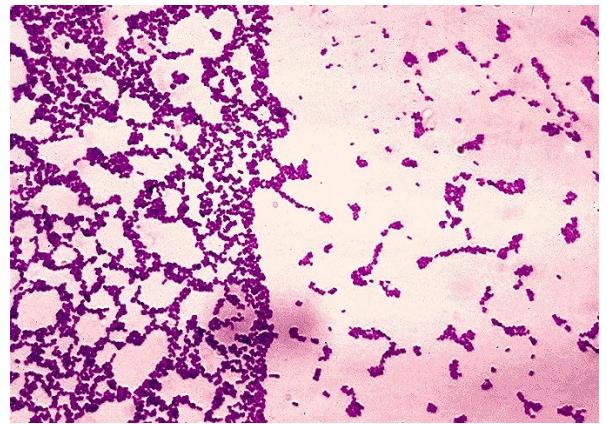
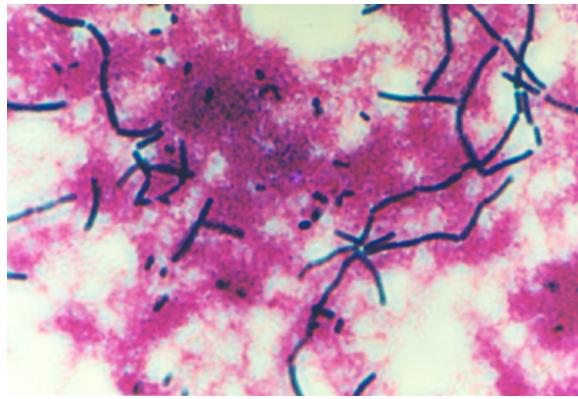
re-emerging: TB

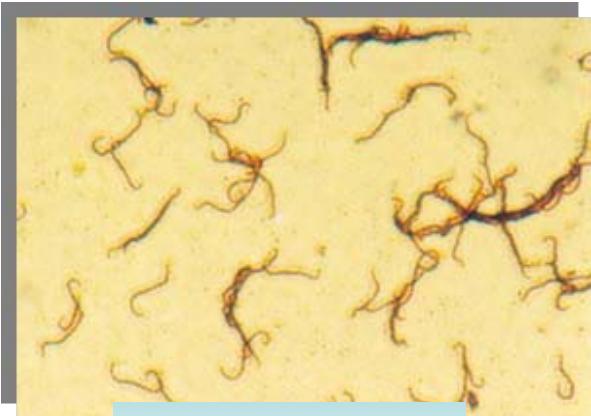
- 5) Viral research made progress.**
- 6) New diagnostic techniques .**
- 7) New type vaccine .**
- 8) Microbial genomic program,
MGP**
- 9) Proteomics**





Bacterium

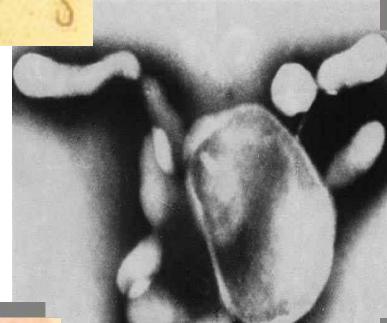




Spirochetes



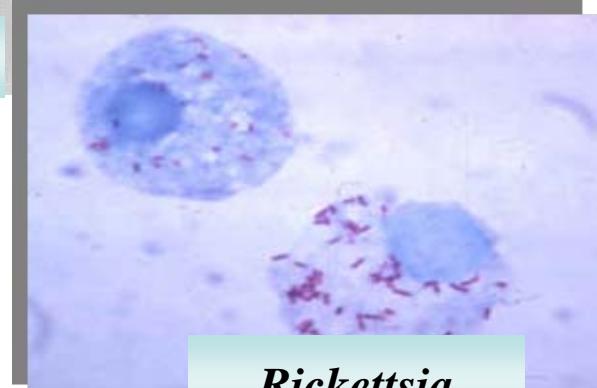
Actinomycetes



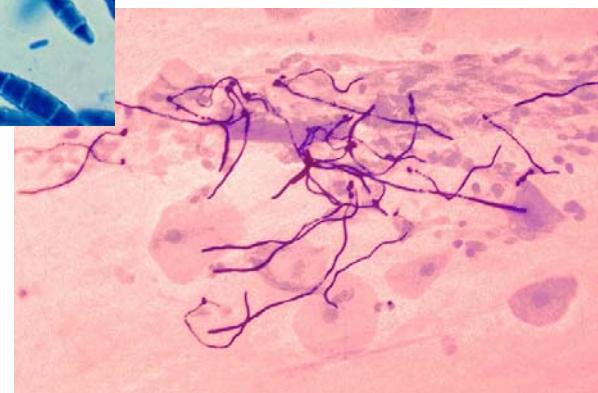
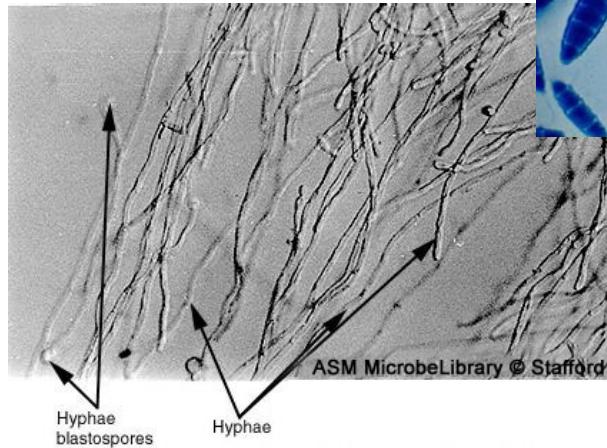
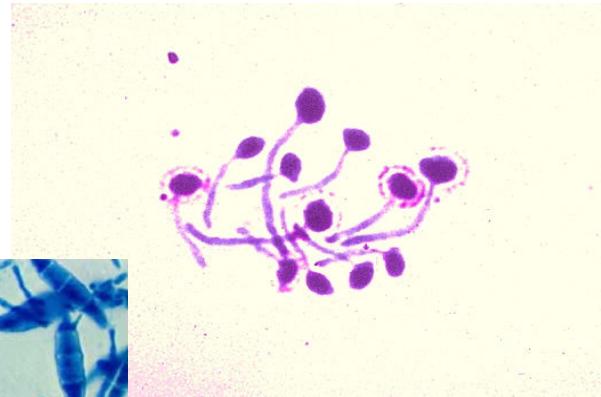
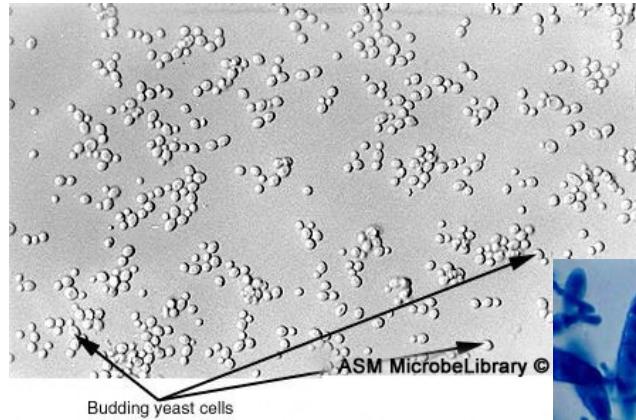
mycoplasma



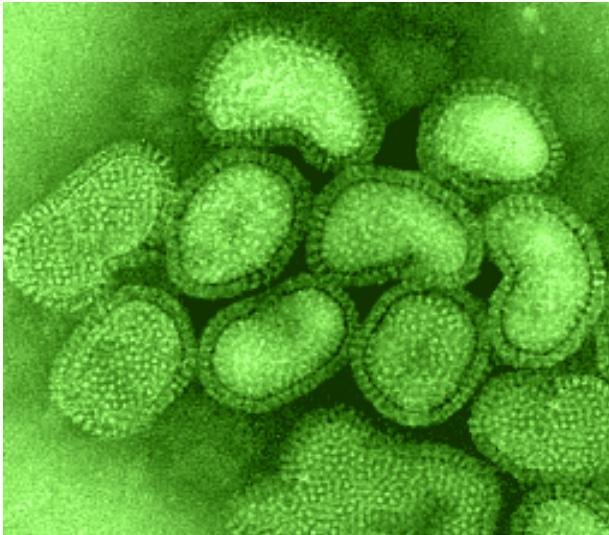
Chlamydia



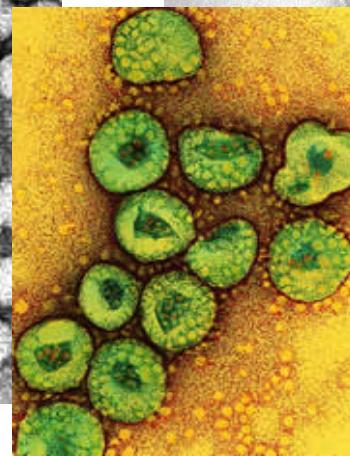
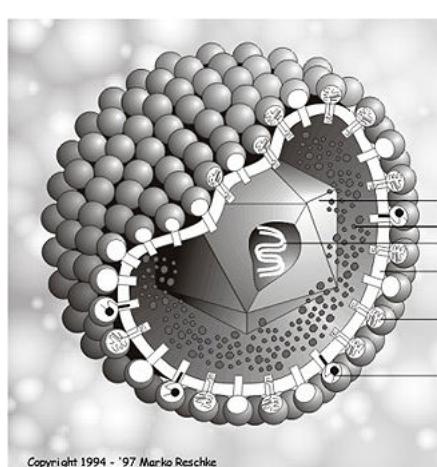
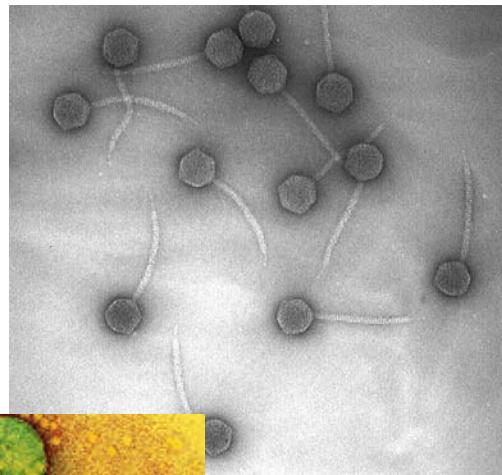
Rickettsia



Fungi



Virus



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