

Viruses & fungi

Fungi:

- ☐ Mycology: study of fungi.
- ☐ Fungi: group of heterotrophic eukaryotic cells.
- ☐ Fungi called saprophytes because they obtain their nutrients from dead organic material.

Classification of fungi:

1) Yeast:

- Oval or spherical in shape.
- Single cell (unicellular), one nucleus.
- Multiply by asexual reproduction (Budding).

2) Mold:

- Multicellular (multinucleated cell).
- Consists of branching hyphae forming Mycelium.
- Multiply both sexually and asexually.

What are the best conditions to grow fungi?

- ☐ Media: Sabouraud Dextrose Agar (SDA).
- ☐ PH: wide range of PH especially acidic.
- ☐ Moisture.
- ☐ Temperature:

Room temp: causing superficial infection.

37 C: cause systemic infection, called pathogenic fungi

Cold temp: cause spoilage of food

- ☐ Lacto Phenol Cotton blue: Reagent used to stain fungi for microscopic examination.
- ☐ Use iron needle for culturing.

Why?

Benefits of fungi:

- 1) Baking by using yeast.
- 2) Brewing.
- 3) Breaking down of dead organic material.
- 4) Antibiotics. Ex: penicillin extracted from penicillium.

Viruses:

- ☐ Virology: study of viruses.
- ☐ Viruses are obligate intracellular agents (they can multiply only in living cell).
- ☐ They have single type of nucleic acid (DNA /RNA) enclosed in a capsid.
- ☐ Some viruses have envelop other are naked (none enveloped).
- ☐ Viruses size vary from 20-300 nm.

We can see it by electron microscope.

- ☐ Viruses infect human, plants, animals and bacteria.
- ☐ Viruses that infected bacteria are called: bacteriophage.

Cultivation of viruses:

- 1) Inoculation of lab animals (ex: mice, hamster).
- 2) Inoculation of embryonated egg.
- 3) Tissue cultured cells. Use it to see

Cytopathic effect: it is morphological changes in the cell caused by viruses when they multiply inside the cell.

Why we do cultivation:

- a. Diagnosis.
- b. research.
- c. production of vaccines

Virus life cycle:

1. Adsorption to the cell.
2. Penetration.
3. Multiplication.
4. Budding outside the cell.