

## CONCEPT: FUNGI

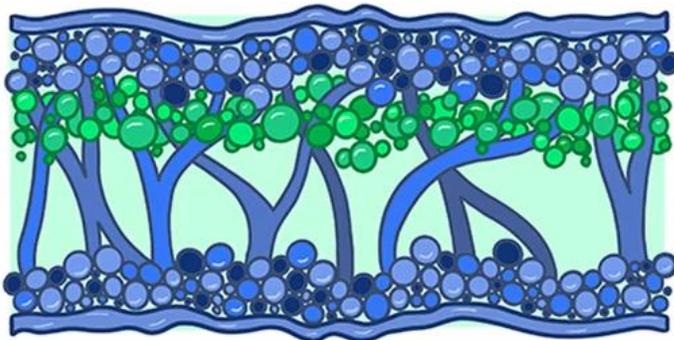
- Fungi are heterotrophic eukaryotes, generally have haploid nuclei, and are the main decomposers in many ecosystems

### EXAMPLE:



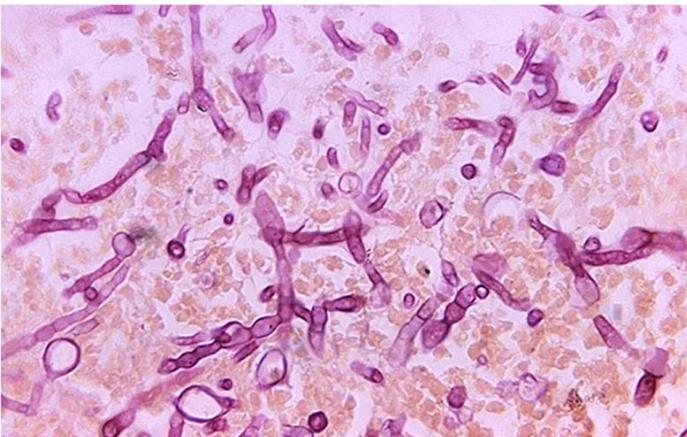
- Some fungi are mutualists, meaning that they exist in a relationship with another organism that benefits them both
  - *Endophytes*– symbiotic fungi that live inside plants
  - *Lichen*– symbiotic association of a fungus and an algae, or cyanobacteria
  - Fungi can have obligate, or facultative symbioses

### EXAMPLE:



- Many fungi are parasites, infecting plants and animals (mycosis)
- Fungi as decomposers move a great deal of carbon through the carbon cycle by digesting plants (cellulose and lignin)
  - *Saprophytes*– fungi that feed on dead plant matter
- *Yeast*– unicellular fungi responsible for leavened bread and beer

### EXAMPLE:

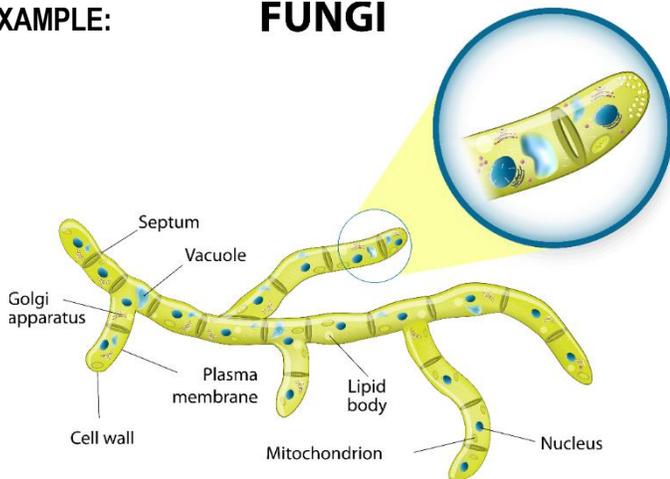


**CONCEPT: FUNGI**

- **Hypha** – long filamentous structure of a fungal body, one or more cells surrounded by a cell wall
  - **Chitin** – polymer of modified  $\beta$ -glucose subunits in fungal cell walls
  - **Mycelium** – interwoven mass of hyphae
  - **Septa** – cross walls that divide hyphae into cells
    - **Coenocytic fungi** – lack septa and have continuous cytoplasm made up of many nuclei
- Fungi perform extracellular digestion by releasing enzymes and absorbing the nutrients through their hyphae

EXAMPLE:

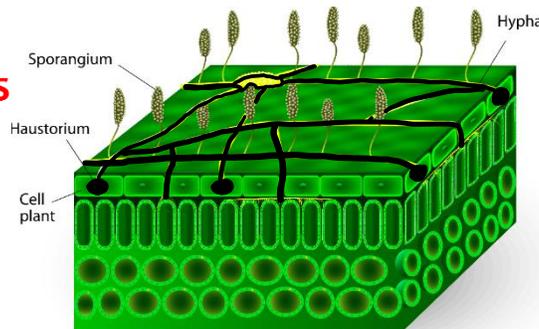
**FUNGI**



- **Haustoria** – tips of hyphae that penetrate into plant cells and extract nutrients

EXAMPLE:

**FUNGI-PARASITES ON PLANTS**



- **Mycorrhizae** – symbiotic association of fungus and the roots of vascular plants
  - **Ectomycorrhizae** – sheets of hyphae on extracellular surface of plants, and do not penetrate the cell wall
  - **Arbuscular fungi** (endomycorrhizal fungi) – penetrate the cortical cells in the roots of plants

EXAMPLE:

