

Biology Key Terms

Diversity of Life: Protists & Fungi

KINGDOM PROTISTA

Endosymbiont Theory - theory that explains the origins of some eukaryotic organelles (mitochondria, chloroplasts) as the result of a symbiosis between a free-living prokaryote and a primitive eukaryotic cell.

Animal-like protists (Protozoa) - mostly unicellular and motile heterotrophs that are obligate aquatic organisms (require water). Thought to be the ancestors of animals.

Pseudopodia - temporary projections of the cell membrane and cytoplasm that extend and retract to allow for movement and food ingestion in Amoeboid cells. (example: *Amoeba*)

Amoeboid movement - type of movement in some Protozoa resulting from the use of pseudopodia

Cilia - packed rows of short, hair-like structures extending from the cell membrane that assist in movement (example: *Paramecium*)

Flagella - long, hair-like structure that extends from the cell membrane, assisting in movement; more than one may be present. (example: *Euglena*)

Sporozoan - Protozoan that is not motile (stationary)

Pellicle - protective coating outside the cell membrane present in some Protozoa (example: *Euglena*)

Contractile vacuole - an organelle in some Protozoa that expands and contracts to regulate water balance with the environment

Eyespot (stigma) - is an organelle in some protists that has photoreceptors, allowing the organism to detect light direction and intensity (example: *Chlamydomonas* or *Euglena*)

Plant-like protists (Algae) - photoautotrophs without roots, stems or leaves. May be unicellular, multicellular or colonial. Obligate aquatic organisms. Thought to be ancestors of plants.

Phytoplankton - microscopic photosynthetic organisms that float near the surface of the water and serve as the basis for food in aquatic food chains.

Red tide - a type of algal bloom (population explosion) of phytoplankton (usually Dinoflagellates) that turns the water brown or red; they are generally harmful to the ecosystem and can result in toxins released and low oxygen in the water.

Eutrophication - an excess of fertilizer in a body of water causes an algal bloom that depletes the water of oxygen, therefore killing other life.

Spores - reproductive structures that are the result of meiosis and contain half the normal chromosome number (they are haploid)

Fungus-like protists - heterotrophs that absorb their nutrients rather than ingesting food. Groups include the slime molds and the water molds. Thought to be the ancestors of fungi.

KINGDOM FUNGI

Chitin - a complex polysaccharide in the cell walls of fungi; also found in the exoskeleton of insects

Hyphae (sing. Hypha) - the thin, vegetative filaments of Fungi; one cell layer in thickness

Mycelium (pl. mycelia) - a mass of hyphae; may form a tangled mat (bread mold) or an organized body (pizza mushroom)

Fruiting body - reproductive structures of Fungi, composed of mycelia supporting spore-producing structures (such as basidia or asci)

Saprobe - a heterotrophic organism that lives on dead and decaying organic matter by absorbing rather than ingesting it

Ectomycorrhizal fungi- grow thick coats of mycelia around the rootlets of trees and bring water and minerals from the soil into the roots. In return the host tree supplies the fungus with sugars, vitamins and other root substances.

Endomycorrhizal fungi are microscopic soil fungi that penetrate the cells of plant roots. This relationship may be beneficial to both parties or may be harmful to the plant.

Lichens - a symbiosis (mutualism) between a fungus and either a green alga or photosynthetic bacteria.

Fragmentation - a means of asexual reproduction in Fungi when hyphae are physically separated from each other; the pieces parts regenerate and can continue living

Budding - process of yeast asexual reproduction where the original yeast cell pinches itself off to produce a small offspring cell.

Spores - microscopic, non-motile cells that serve as asexual reproduction in Fungi. They can develop into a new organism.

Sporangia (sing. sporangium) - structures that produce spores

Septa (sing. Septum) - internal cell walls within the hyphae; often there are holes in the septa that allow organelles and other items to pass among the hyphae.

Coenocytic - containing more than one nucleus; mycelia without septa would be coenocytic

Ascus (sac) - structure that produces spores in Orange Cup fungi

Basidia (sing. basidium) - structures that produces spores in mushrooms