

Fungus-like Protists

Fungus-like protists are protists that get energy by absorbing or ingesting dead organic matter. They share many features with kingdom fungi. Like fungi, they are heterotrophs, meaning they must obtain food outside themselves. They also have cell walls and reproduce by forming spores, just like fungi. The fungus-like protists are represented by a total of seven division. Among them, four division belong to “group slime molds”, three division to “group Stramenopila”

Slime Molds

There are approximately 900 species of organisms that are classified in the group slime molds. that are not closely related to one another. These groups include four divisions (*Myxomycota*, *Plasmodiophoromycota*, *Acrasiomycota*, and *Dictyosteliomycota*).

Division: *Myxomycota*

Myxomycota members, commonly referred to as plasmodial slime molds, are currently classified as in the Kingdom Protista. There are approximately 850 *Myxomycota* species that can be found throughout the World. They are usually present and sometimes abundant in terrestrial ecosystems, where they are associated with various types of decaying plant materials

Most division members are spent as a microscopic amoeba that roams by itself. It moves around, feeding on organic matter like bacteria and other microscopic particles. During food shortages, plasmodial slime molds swarm and merge together into a large, multinucleated single cell called a plasmodium. The plamodium can increase in size by uniting with other plasmodia or with zygotes of the same strain. The plasmodium does not have a definite shape or size and is ever changing and ever flowing. It creeps over the surface of the substrate and engulfs particles of food within its path. At this stage, protoplasm streaming is visible while the plasmodium extends itself in different directions. Under

unfavorable conditions, the plasmodium becomes converted into irregular, hardened mass known as the sclerotium. Sclerotia can remain dormant for a long period of time and will grow into a plasmodium on the return of favorable conditions.

Reproductive phase of the myxomycota is marked by the conversion of the entire plasmodium into one or more sporophores. The division produces four general types of sporophores (sporangia, aethalia, pseudoaethalia, plasmodiocarps). Meiosis occurs in the young spores resulting in haploid uninucleate spores that are liberated from their sporophores by wind, water, and activities of animals.

Systematics of division Myxomycota

Classis: *Myxomycetes*

Ordo: *Ceratiomyxales*

Genus: *Ceratiomyxa*

Ordo: *Liccales*

Genus: *Dictydium*

Ordo: *Trichiales*

Genus: *Trichia*

Ordo: *Physarales*

Genus: *Physarum*

Ordo: *Stemonitales*

Genus: *Stemonitis*

Division: *Plasmodiophoromycota*

Plasmodiophoromycota, known as endoparasitic slime molds, are obligate parasites of algae, fungi, or plants. They produce a true plasmodium but are different from plasmodium of myxomycota member because of the absence of translocational movement and they lack the ability to phagotocize food material and exist wholly within the cells or hyphae of their hosts.

Several species are economically significant plant pathogens, including *Plasmodiophora brassicae*, which causes clubroot of cabbage and related plants, and *Spongospora subterranea*, which causes powdery scab of potatoes.

Systematics of division *Plasmodiophoromycota*

Class: *Plasmodiophoromycetes*

Order: *Plasmodiophorales*

Genus *Plasmodiophora*

Genus: *Polymyxa*

Genus: *Spongospora*

Division: *Dictyosteliomycota*

Dictyosteliomycota, commonly known as cellular slime molds, is a relatively homogeneous division of approximately 150 species. Members of division are uninucleate, haploid amoeba that feeds by engulfing bacteria. These amoebae have filose pseudopodia in contrast to lobose pseudopodia made by members of division *Acrasiomycota*.

Systematics of division *Dictyosteliomycota*

Class: *Dictyosteliomycetes*

Order: *Dictyosteliales*

Genus: *Dictyostelium*

Genus: *Polysphondylium*

Order: *Acytosteliales*

Division: *Acrasiomycota*

Division *Acrasiomycota* is an artificial group of cellular slime molds. In this division, the aggregating myxamoebae do not form streams in developing pseudoplasmodia, their sorocarps do not have well-defined sori and sorophores, and their myxamoebae have lobose pseudopodia.

Systematics of division *Acrasiomycota*

Class: *Acrasiomycetes*

Order: *Acrasiales*

Genus: *Acrasis*

Genus: *Pocheina*

Genus: *Copromyxa*

Genus: *Copromyxella*

Stramenopila

Oomycota, *Hyphochytriomycota* and *Labyrinthulomycota* divisions belong to group Stramenopila.

Division: *Oomycota*

Oomycota members characterized by their production of oogonia and oospores. Most lack septa in their hyphae and are therefore referred to as coenocytic. They are filamentous protists which must absorb their food from the surrounding water or soil, or may invade the body of another organism to feed. They play an important role in the decomposition and recycling of decaying matter. Some parasitic members have caused much human suffering through destruction of crops and fish. The cell wall of the division is made up of a mix of cellulosic compounds and glycan.

Systematics of division *Oomycota*

Class: *Oomycetes*

Order: *Saprolegniales*

Order: *Peronosporales*

Genus: *Plasmophora*

Genus: *Peronospora*

Division: *Hyphochytriomycota*

Division: *Hyphochytriomycota*

Hyphochytriomycota members are a small group of zoospore-producing organisms. The members are distinguished by an anterior tinsel flagellum on their zoospores. In addition, they have a rhizoidal or hypha-like vegetative system. They possess cell walls during their growth phases and acquire nutrients by absorption.

Division: *Labyrinthulomycota*

Labyrinthulomycota members have thallus consisting of branched tubes within which amoeboid cells crawl. They have heterokont (whiplash and tinsel flagella) spores.

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