

# Difference Between Fungi and Protozoa

[www.differencebetween.com](http://www.differencebetween.com)

## Key Difference - Fungi vs Protozoa

In the context of the modern classification system, fungi and protozoa belong to the Kingdom Fungi and Kingdom Protista respectively under the domain Eukaryotes. Kingdom Protista was developed in order to classify organisms that do not belong to any of the other classification groups. Kingdom Protista composes of unicellular plants (algae) and unicellular animals. Unicellular animals are classified as protozoa. Kingdom fungi contain molds and yeasts. The **key difference** between fungi and protozoa is that **the fungi are mainly multicellular eukaryotic organisms while protozoa are unicellular eukaryotic organisms**.

## What are Fungi?

Fungi belong to the group of Eukaryotes which includes different types of species. Common types of fungi are yeasts, mold, and mushrooms. The kingdom fungi could be classified into five true phyla namely, Chytridiomycota, Zygomycota, Ascomycota, Basidiomycota and the recently described Phylum Glomeromycota. The characteristic feature that distinguishes fungi from other plants, some protists and bacteria is their presence of chitinous cell walls. Fungi are heterotrophic which make them similar to animals. They secrete different types of digestive enzymes on organic matter to absorb food by decomposing them.

Fungi do not possess chlorophyll. Therefore, they do not photosynthesize. In the context of fungal growth, they accomplish their locomotive motives. In simple terms, their growth is their means of mobility. They may also produce spores which are flagellated or not. Flagellated spores accomplish their mobility through the flagella and the rest of the spores have the capacity to travel through air or water.



**Figure 01: Fungi – Aspergillus spp.**

Fungi are distributed throughout the world in numerous habitats. They have the ability to live in extreme environmental conditions, but most of the fungi develop well in terrestrial ecosystems. Fungi develop as hyphae. Fungal hyphae are cylindrical structures that are 2-10  $\mu\text{m}$  in length. They have thread-like filamentous structures with a length of few centimeters depending on the species. Hyphae have the ability to fuse together when they come in close contact. This is known as hyphal fusion. This leads to the development of mycelium which is a network of hyphae that are interconnected. Hyphae mostly involve in providing growth conditions for the development of fungi through the uptake of nutrients from the living organisms. Fungal hyphae or developed mycelium could be observed by the naked eye.

## **What are Protozoa?**

Protozoa are considered to be single-celled organisms which are eukaryotes that possess cell nuclei. They also share common characteristics with animals. Common characteristics include locomotion and heterotrophy. Protozoa are abundantly present in environments that possess high levels of moisture (aqueous environments) and soil in which they occupy different stages of trophic levels. Protozoa accomplish their movement through the presence of cilia and flagella or amoebic movement through pseudopodia. The protozoan that possesses flagella is referred to as flagellates. They may possess a single flagellum or multiple flagella. Ciliates move due to the presence of hair-like cilia. According to the pattern of the beating of cilia, these protozoa can alter their direction of the route. Protozoa such as *Amoeba* accomplish locomotion through pseudopodia. Some protozoa are stationary and they do not move. These types of protozoa are referred to as sessile organisms.

They utilize different techniques and biological mechanisms to fulfill their food requirement for their growth and survival. Osmotrophy is a biological process which protozoa implement to absorb nutrients through their cell membranes. They perform phagocytosis by engulfing food particles with the assistance of pseudopodia. They also have the ability to directly uptake food particles from an aperture like structure which is called the cytosome. These

processes are identical to different types of protozoa species. Once taken in, the food particles are digested within the large vacuole the protozoa possess.



**Figure 02: Protozoa**

In the cell membrane of protozoa, is the pellicle which is a thin layered structure that supports the cell membrane and it involves in assisting the organism in different aspects that include protection, to retain their shape and in hydrodynamics for easy locomotion. The constituents of the pellicle vary from organism to organism. Therefore, according to the organism type, the pellicle could be either elastic flexible or rigid.

## What are the Similarities Between Fungi and Protozoa?

- Fungi and protozoa are heterotrophic.
- Both types of organisms have flagella for locomotion.
- Both types of organisms are eukaryotic.

## What is the Difference Between Fungi and Protozoa?

Fungi vs Protozoa	
Fungi are a group of organisms which are multicellular eukaryotes.	Protozoa are a group of organisms in Kingdom Protista which are unicellular animals.
Cellular Structure	
Fungi are mainly multicellular.	Protozoa are unicellular.
Locomotion	
Fungi move through flagella, air or water.	Protozoa locomote by flagella, cilia, pseudopodia.
Cell Wall	

Fungi cell wall possesses chitin.	Protozoa cell wall possesses a pellicle which helps in protection and locomotion.
<b>Examples</b>	
Some examples of fungi are <i>Aspergillus</i> , <i>Penicillium</i> , <i>Curvularia</i> , yeasts, <i>Agaricus</i> , <i>Mucor</i>	Some examples of protozoa are <i>Amoeba</i> , <i>Paramecium</i>

## Summary - Fungi vs Protozoa

Fungi are multicellular eukaryotic organisms which include different types of species. Common types of fungi are yeasts, mold, and mushrooms. Protozoa are considered to be single-celled animal-like organisms which are eukaryotes. Fungi belong to Kingdom Fungi and protozoa belong to Kingdom Protista. This is the difference between fungi and protozoa.

### Reference:

- 1.Study.com, Study.com. [Available here](#)
- 2.“Introduction to Fungi.” APSnet. [Available here](#)

### Image Courtesy:

- 1.Hallitusseene Aspergillus sp. eospead 40 X'Sulev Kuuse – Üleslaadija oma töö, [\(CC BY-SA 4.0\)](#) via [Commons Wikimedia](#)
- 2.'3.1.5 protozoa 5'By Kaden11a - Own work, [\(CC BY-SA 4.0\)](#) via [Commons Wikimedia](#)

### How to Cite this Article?

APA:Difference Between Fungi and Protozoa.(2017 November 24). Retrieved (date), from <http://differencebetween.com/difference-between-fungi-and-vs-protozoa/>

MLA: "Difference Between Fungi and Protozoa" Difference Between.Com. 24 November 2017. Web.

Chicago: “Difference Between Fungi and Protozoa”. Difference Between.Com.

<http://differencebetween.com/difference-between-fungi-and-vs-protozoa/>accessed (accessed [date]).



Copyright © 2010-2017 Difference Between. All rights reserved