

Difference Between Bacterial and Fungal Colonies

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Key Difference – Bacterial vs Fungal Colonies

Morphological characteristics are really important when characterizing [bacteria and fungi](#). Colony morphology is a good method commonly used by scientists to identify and describe them. The colony characteristics of individual bacterial and fungal colony are carefully observed and used during these studies. Bacteria grow rapidly on nutrient abundant culture media compared to fungi. Different types of bacteria and fungi produce phenotypically different looking colonies. Colonies differ in size, shape, texture, colour, margins, etc. To study colony morphology, bacteria and fungi should be grown on agar in Petri plates by providing all the necessary nutrients and conditions. Bacteria grow as small oily dots on [agar](#) media. Fungi grow as powdery mats all over the agar plate. The key difference between bacterial and fungal colonies is **that bacterial colonies are visible masses of bacterial cells arising from single bacterial cells while fungal colonies are visible masses of fungi arising from a single spore or mycelial fragment.**

What are Bacterial Colonies?

Bacteria are tiny microscopic organisms which can be seen only under the microscope. They are [unicellular prokaryotic](#) organisms. They cannot be seen by our naked eye. However, they are visible when they grow in colonies on agar media in Petri plates. A bacterial colony can be defined as a visible mass of bacterial cells grown on a solid agar medium. It is assumed that one bacterial colony arises from a single bacterial cell and is multiplied by [binary fission](#) into many bacteria. A colony contains millions of genetically identical bacterial cells. Hence, a bacterial colony is taken as one unit in the enumeration of bacteria.

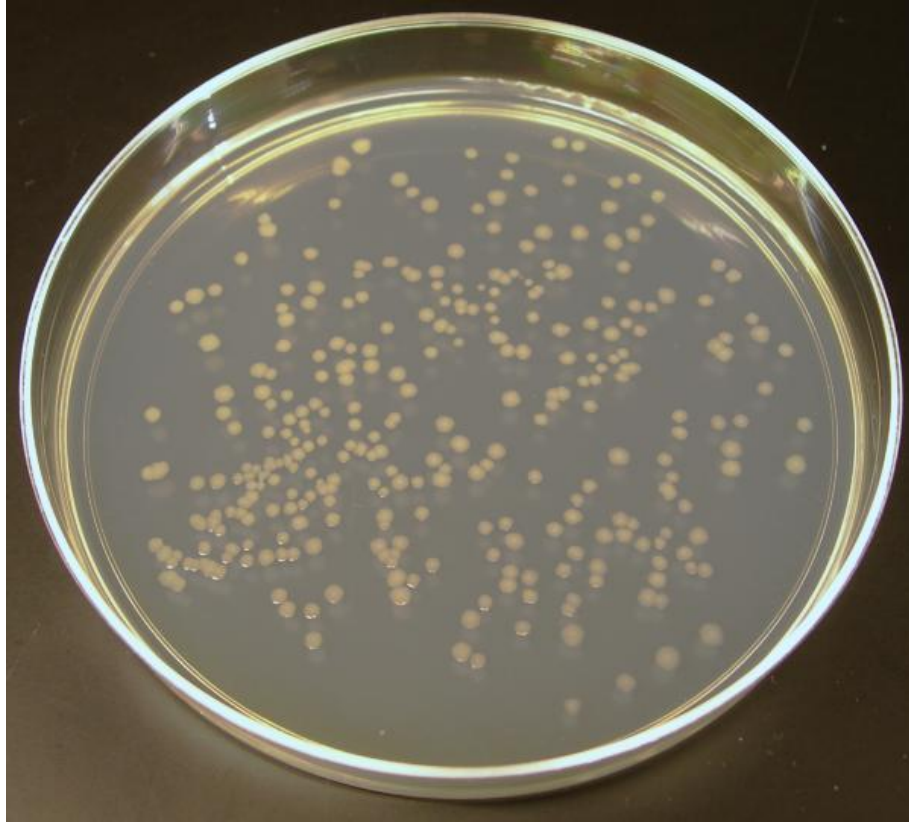


Figure 01: *E. coli* Colonies on Agar Plate

Bacterial colonies appear on agar media as tiny dots. These colonies show different characteristics which are very important in differentiation and identification of bacterial species. The colony characteristics vary widely. Bacterial colonies differ in the colony size, shape, colour, texture, elevation, margins, appearance of the surface, opacity, etc.

What are Fungal Colonies?

Fungi are a group of eukaryotic organisms which include microorganisms such as yeast, filamentous fungi, and mushrooms. Fungi grow well under moist and warm conditions. They can be classified based on their morphological and molecular characteristics. Morphological characteristics can be easily observed by growing fungi on [solid media](#) such as potato dextrose agar (PDA). PDA is the medium used to cultivate fungi commonly in laboratories. When fungi grow on solid media, they grow as colonies. Fungal colony morphologies are different between different types of fungi. Characteristics such as pigmentation, texture etc can be studied from fungal colonies.



Figure 02: Ascomycetes Fungal Colonies

Fungi colonies are different from bacterial colonies. Fungi appear as powdery or fuzzy textured colonies. Hyphae of fungi run all over the solid media forming rhizoid or filamentous colonies. Fungal colonies won't appear as small oily dots. [Mycelium](#) and spore colours also greatly differ among the fungal species.

What is the difference between Bacterial and Fungal Colonies?

Bacterial vs Fungal Colonies

Bacterial colonies are the visible masses of bacterial cells on solid media.

Fungal colonies are the visible masses of fungi on solid media.

Colony Appearance

Bacterial colonies appear as tiny and creamy dots on the agar surface.

Fungal colonies appear as powdery or filamentous moulds on the agar surface.

Growth on Agar Media

Bacterial colonies grow rapidly on agar media.

Fungal colonies grow comparatively slowly on agar media.

Spread on the Surface

Bacterial colonies do not spread all over the surface. They remain as circular dots.

Fungal colonies spread all over the agar surface normally.

Summary – Bacterial vs Fungal Colonies

A colony can be defined as a visible mass of microorganisms. Each colony originates from a single mother cell. Hence, the cells in a colony are genetically identical. Bacteria and fungi grow as colonies on solid media. Bacterial colonies appear as small creamy dots on the agar surface. Fungal colonies appear as moulds on the agar surface. This is the main difference between bacterial and fungal colonies. Colony morphologies are useful in identification and differentiation of bacterial and fungal species.

References:

- 1."Colony Morphology of Bacteria; How to describe Bacterial Colonies?"Microbeonline. N.p., 09 May 2016. Web. [Available here](#). 02 July 2017.
2. "Bacterial Colony Morphology and Identification of Bacteria". Science Prof Online N.p., n.d. Web. [Available here](#). 02 July 2017.

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