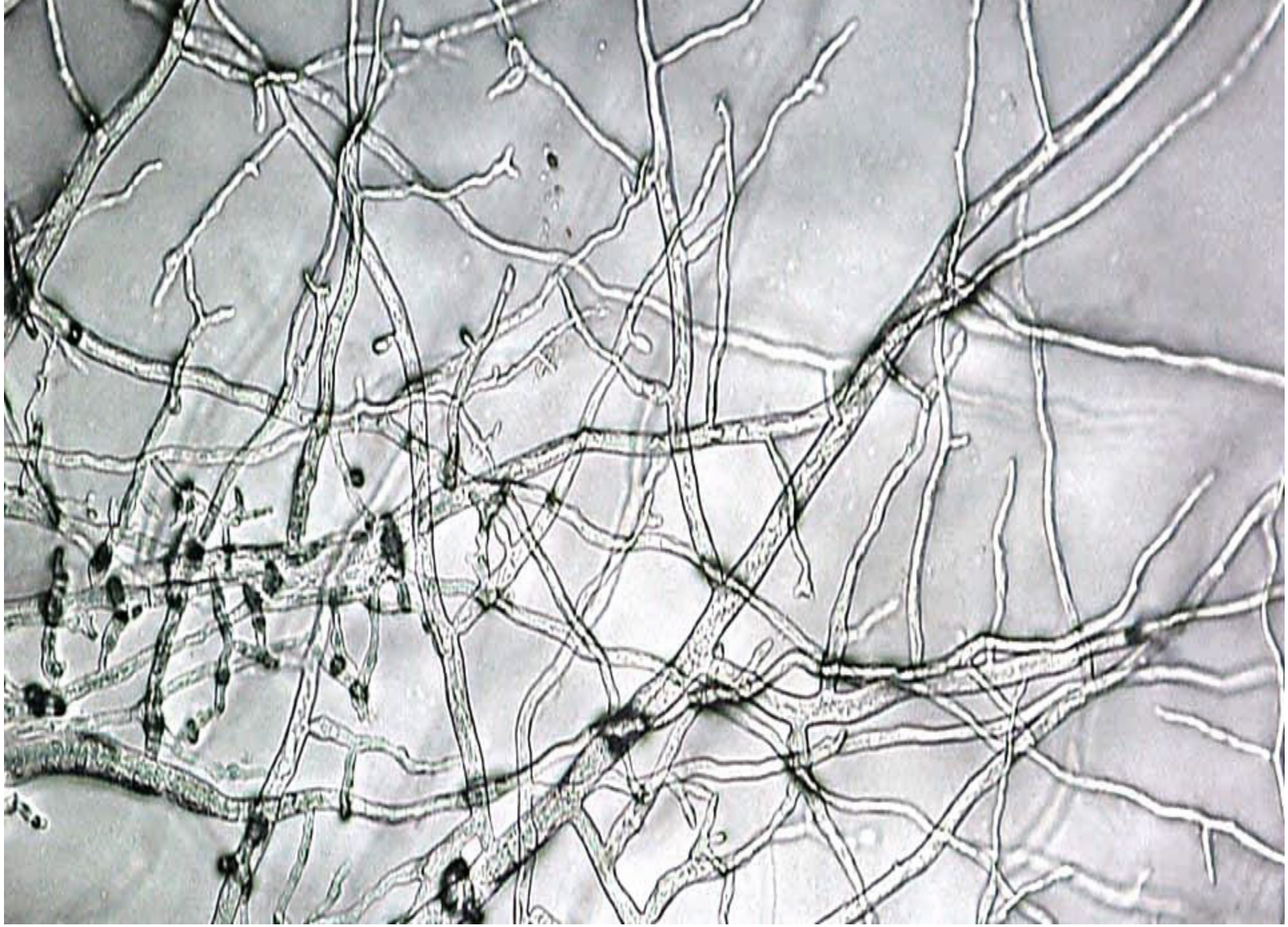
General Characteristics of Fungi
Week 2

General Characteristics of Fungi

- Fungi have eukaryotic cell structures and are therefore insensitive to many bacterial antibiotics.
- They are non-photosynthetic and immobile.
- While the optimum pH is 6.0, they can grow in more acidic environments.
- They are obligatory aerobes, their optimum breeding temperature is 20-30°C.
- Pathogenic fungi that cause systemic mucosis can tolerate 37 °C.
- While fungi are generally slow to grow on media, Zygomycetes and Aspergillus species can grow in 2-3 days, but incubation times of most dermatophytes take 3-5 weeks.
- Fungi can be classified into 2 groups as molds and yeasts.

MOLDS

- The molds are in filamentous structure and are in the form of branching filaments and hyphae with a diameter of 2-10 μm.
- In many fungal species, hyphae show a segmented structure called septum, but Zygomycetes are non-septum.
- Branching hyphae form intricate structures similar to curly hair, which are called myceliums.
- Fungi form large hairy colonies on the medium, which synthesize aerial budding hyphae bearing asexual spores.



Erişim: https://http://www.zebrascrossing.net/t21696-l-annexion-du-bonheur

YEASTS

- Yeasts are oval, spherical or shuttle-like cells, 3-5 μm in diameter and form large moist colonies different from bacteria on the surface of the medium.
- Yeasts are unicellular organisms that reproduce alone by budding or by forming spore.
- Some fungal pathogens are dimorphic, that is, they show yeast or yeast-like reproduction in animal tissues (in vivo) and enriched media (in vitro) when grown at 37°C, while they show fungal-like reproduction in their natural environment and media incubated at 25°C.
- Yeasts such as *Candida albicans* appear in animal tissues in the form of spindle-like separate hyphae called pseudohifa, sticking together.

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- Pathogenic fungi can be found in yeast or mycelial form.
- Some fungi can be seen in both yeast and mycelial forms. Such mushrooms are called "dimorphic fungi".
- 1. YEAST – (parasitic or pathogenic form): This is seen in tissue sections, some exudates or cultures incubated at 37°C.
- 2. MYCELIUM / MUSHROOM - (saprophytic or mold morph): This is the form seen in nature or when cultured at 25°C.
- Conversion to the yeast form in dimorphic fungi is an essential feature for pathogenicity.