

Class 11 Biology / NEET Revision

Kingdom Fungi

The Hidden Network

A Unique Kingdom



The fungi constitute a unique kingdom of heterotrophic organisms showing immense diversity in morphology and habitat.

Mostly Filamentous

With the notable exception of 'yeast' (which is unicellular), fungi are filamentous organisms.

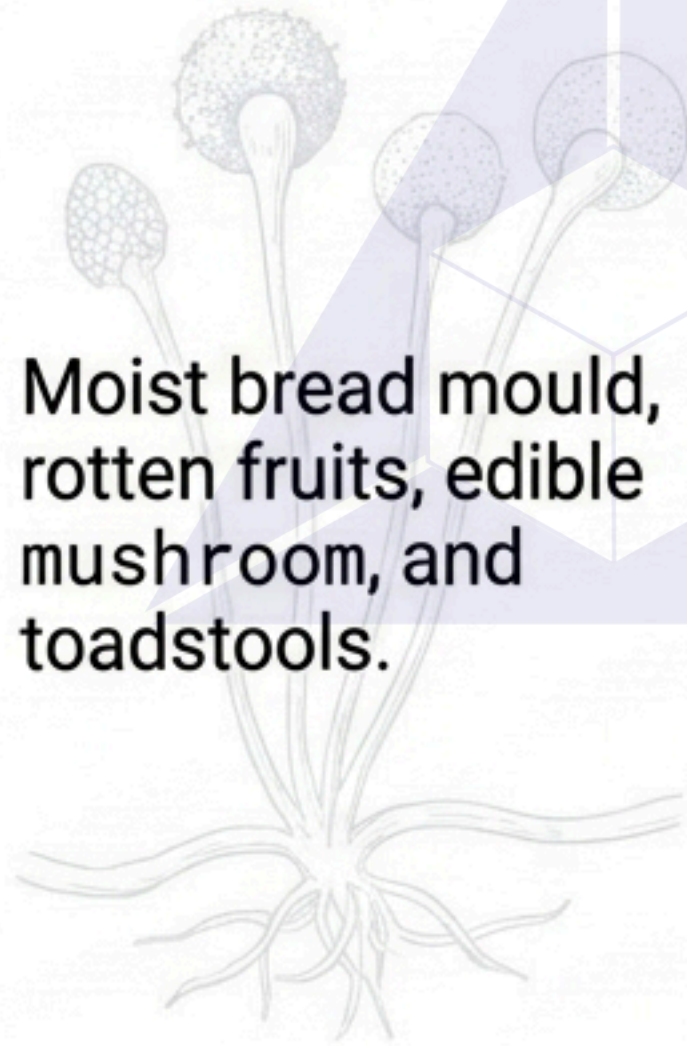
Strictly Heterotrophic

They lack chlorophyll and depend entirely on external sources for their nutrition.

Common Fungal Specimens

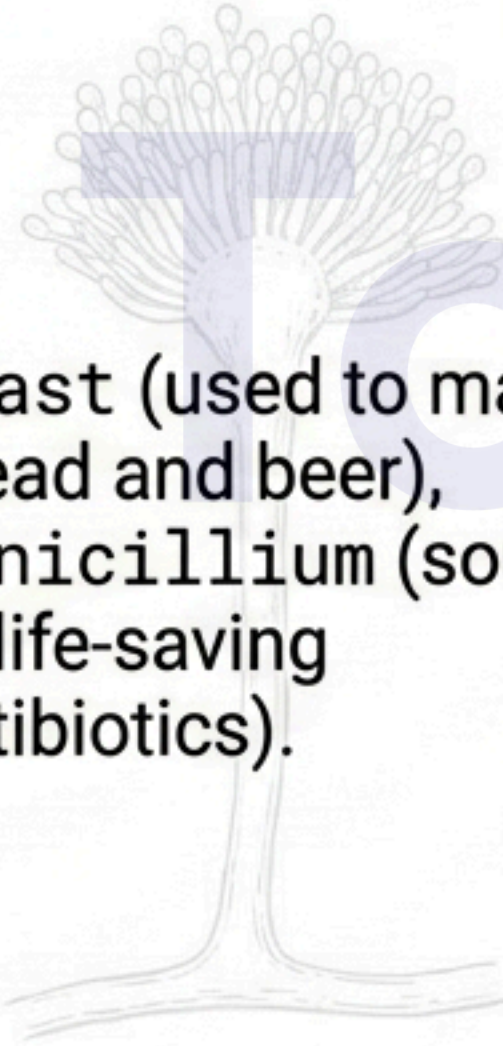
Everyday Sights

Moist bread mould, rotten fruits, edible mushroom, and toadstools.



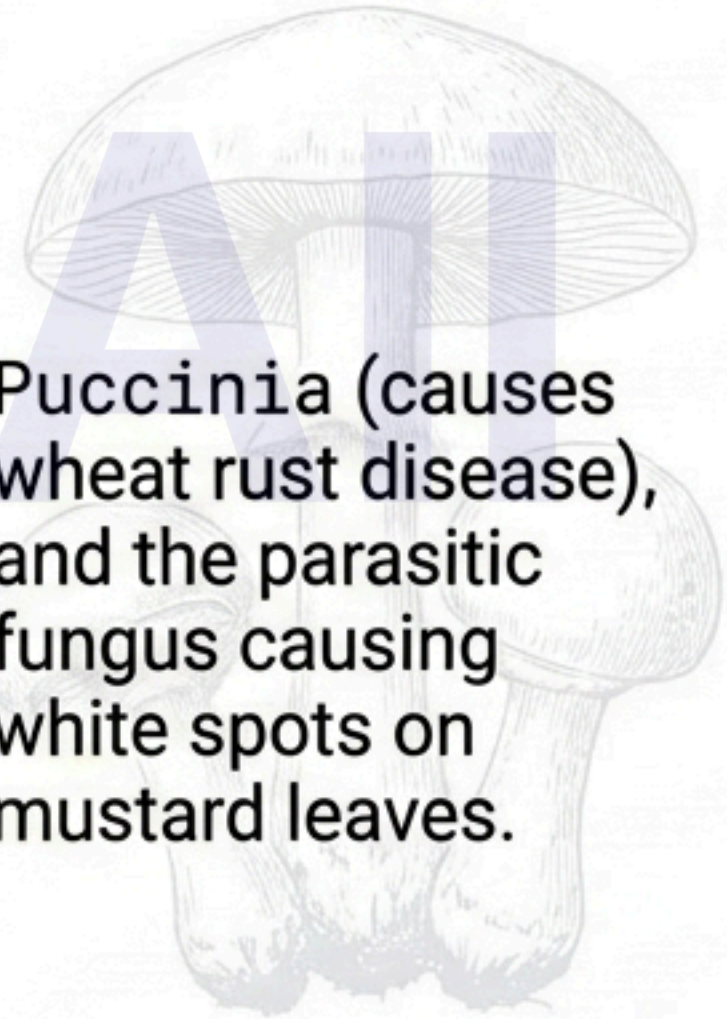
Commercial Value

Yeast (used to make bread and beer), Penicillium (source of life-saving antibiotics).



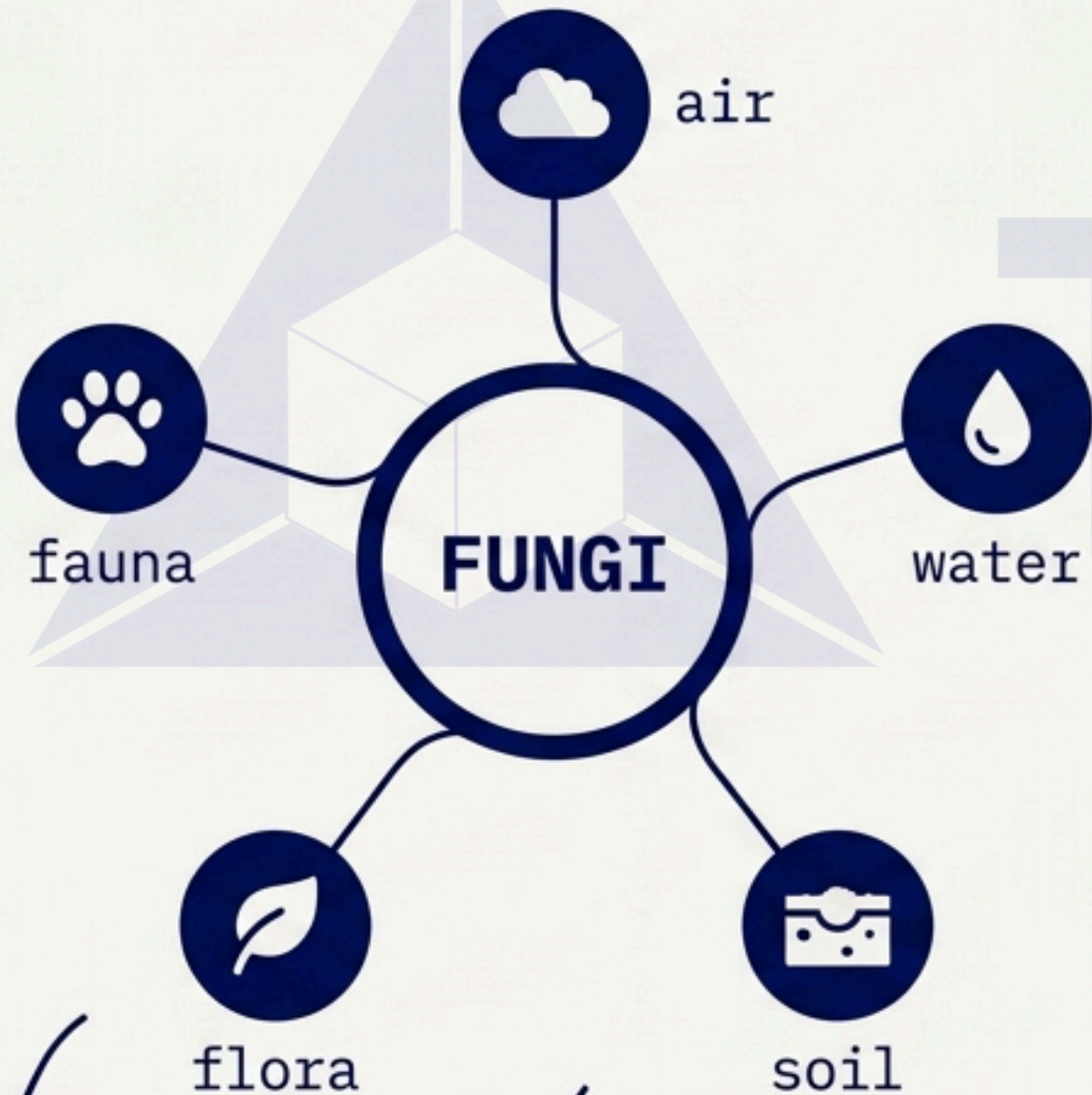
Pathogens

Puccinia (causes wheat rust disease), and the parasitic fungus causing white spots on mustard leaves.



Habitat & Distribution

Cosmopolitan distribution



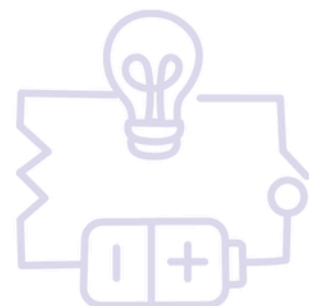
The Refrigerator Rule

Fungi prefer to grow in warm and humid places. We keep food in the refrigerator specifically to prevent food from going bad due to bacterial or fungal infections that thrive in ambient warmth.



**You've Learned the Theory.
Let's Test Them Now.**

$$E=mc^2$$



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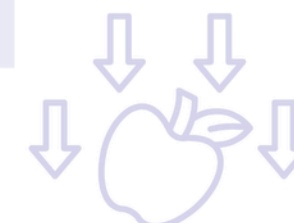
Practice Now



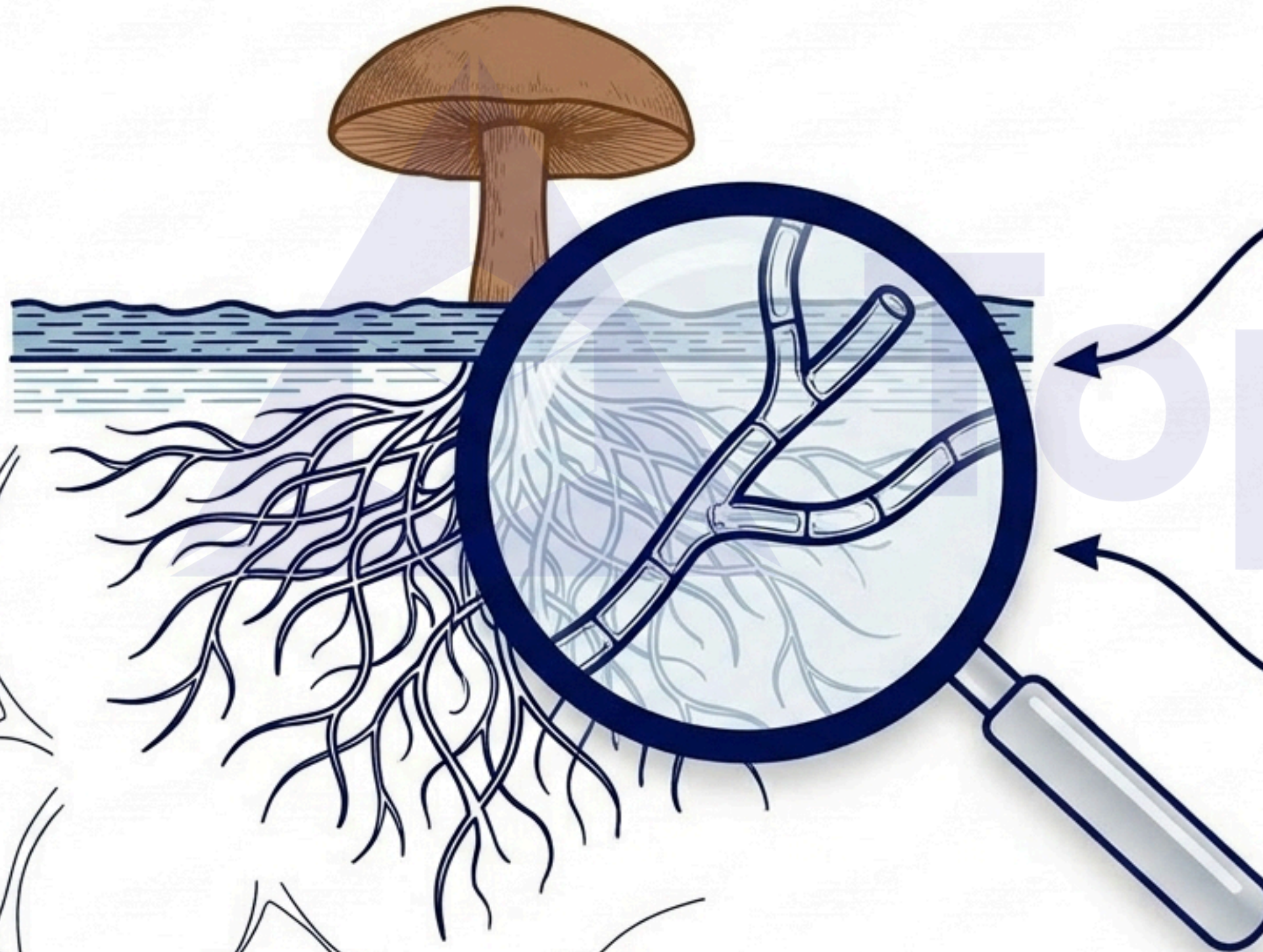
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Key Highlights

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The Microscopic Architecture



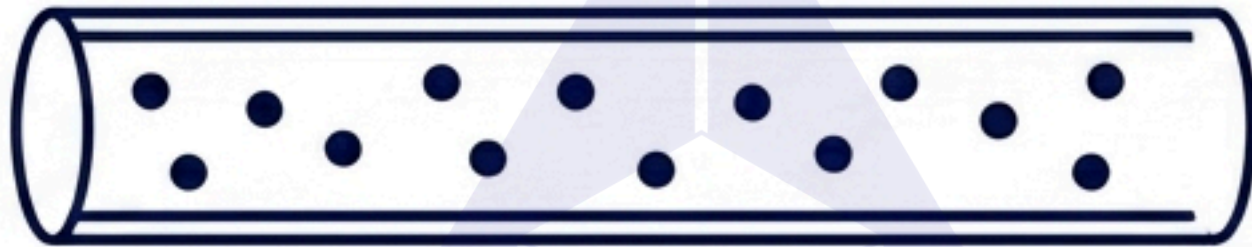
hyphae

Long, slender thread-like structures that make up the fungal body.

mycelium

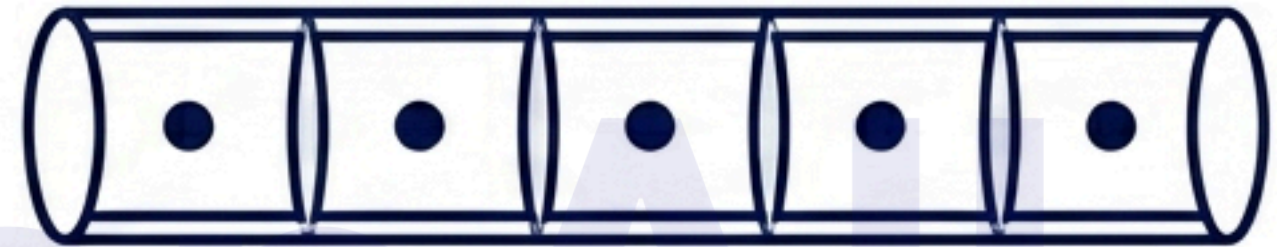
The interconnected network of hyphae functioning as a single organism.

Types of Hyphae



Coenocytic hyphae

Continuous tubes filled with multinucleated cytoplasm. Lacks internal dividing walls.

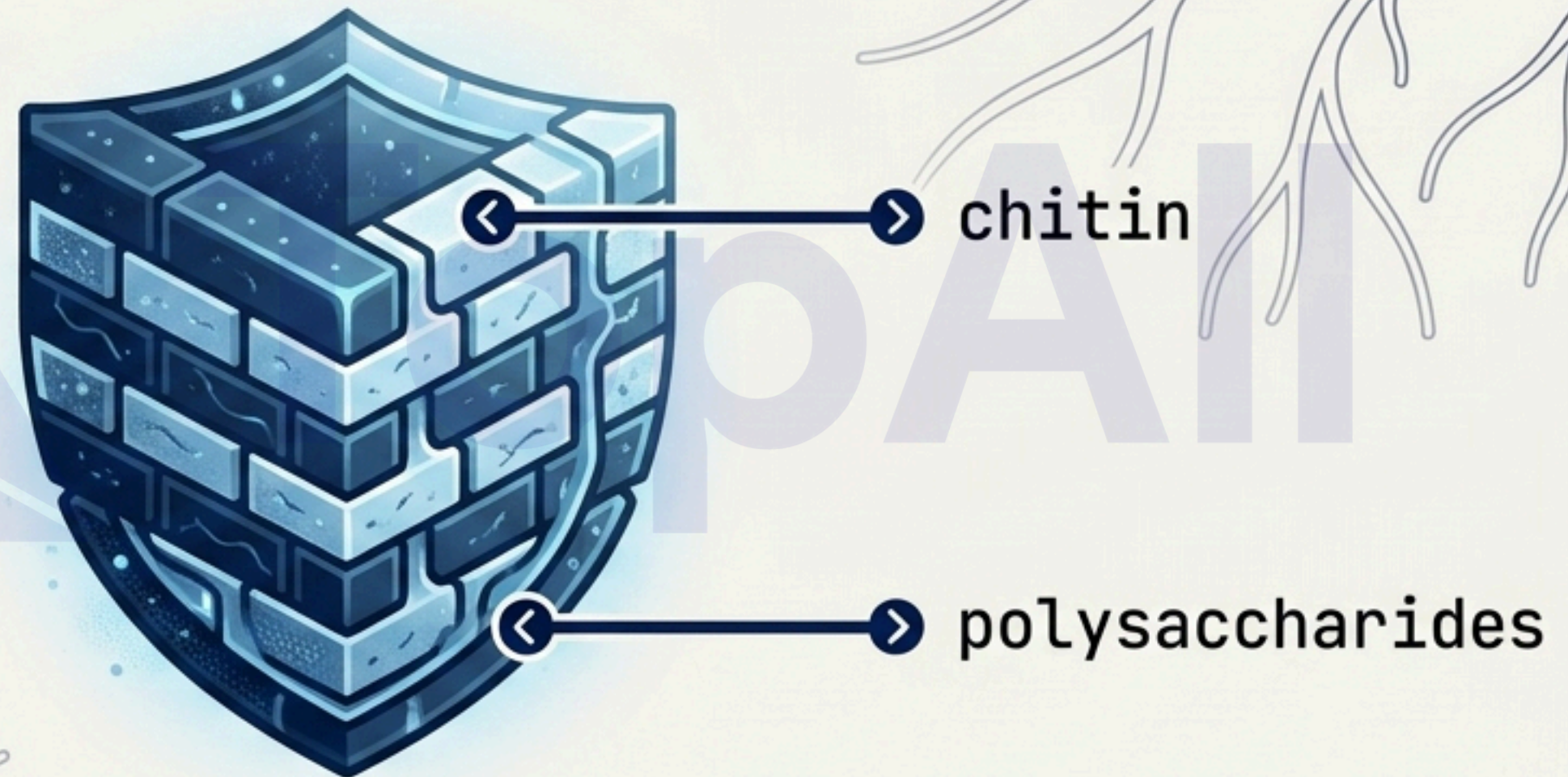


Septate hyphae

Tubes intersected by **septae** or cross walls, dividing the hypha into distinct cellular compartments.

The Cellular Foundation

Unlike green plants which rely on a cellulosic cell wall, the cell walls of fungi are composed of highly resilient biological polymers.



i The presence of **chitin** is a defining taxonomic characteristic that isolates Kingdom Fungi from Kingdom Plantae.

Heterotrophic Strategies (Modes of Nutrition)



Saprophytes

Absorb soluble organic matter directly from dead and decaying substrates. (The majority of fungi).



Parasites

Depend on living plants and animals for nutrients, often causing disease in the host.



Symbionts

Live in mutually beneficial association with other organisms. Examples include **lichens** (with algae) and **mycorrhiza** (with roots of higher plants).

Key Takeaways: Kingdom Fungi



Strictly Heterotrophic

Saprophytic, parasitic, or symbiotic (no chlorophyll).

Chitinous Cell Wall

Composed of **chitin** and **polysaccharides**, unlike plant cellulose.

Filamentous Bodies

Consist of **hyphae** forming a **mycelium** network (except unicellular **yeast**).

Cosmopolitan Distribution

Found everywhere, but thrive best in warm, humid environments.



You've Learned the Theory.

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