

TOPIC: ANTIFUNGAL DRUGS

Antifungal Drugs

◆ Fungi are _____ → makes selective toxicity more _____.

Cell Membrane Disruption → _____:

- ▶ Humans: cholesterol; Fungi: _____.
- Limit ergosterol _____; or
- Target ergosterol _____.

Azoles (Clotrimazole, Miconazole)

Allylamines

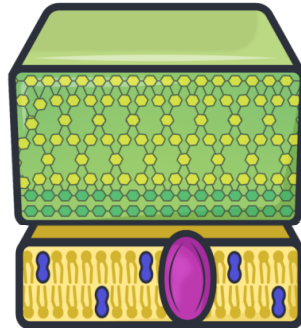
Polyenes (Nystatin & Amphotericin B)

Nucleic Acid Synthesis:

- ▶ Cytosine _____ interferes with DNA and _____ synthesis.



Flucytosine – often used in combination for serious infections.



Cell Wall Disruption:

- ▶ Inhibiting β -glucan formation leads to cell _____.

Echinocandins – taken intravenously.

Cell Division Disruption:

- ▶ Inhibits microtubule assembly → fungi can't reproduce.



Griseofulvin – used orally for infections of _____, hair, and nails.

EXAMPLE

For each statement below, determine which of the options best completes the sentence.

1. Antifungals that disrupt cell membranes specifically target sterols called (cholesterol / ergosterol).
2. Echinocandins are antifungals that target the (cell wall / cell membrane).
3. An example of an antifungal that inhibits nucleic acid synthesis is (miconazole / flucytosine).
4. Many over the counter (OTC) antifungal medications affect bacterial (cell membranes / cell walls).

PRACTICE

Which of the following drugs target ergosterols in fungal cell membranes?

I) Nystatin

III) Flucytosine

II) Miconazole

IV) Griseofulvin

a) I & II.

c) I, II, & III.

b) II & III.

d) I & IV.

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PRACTICE

Which of the following correctly matches the drug with what the drug inhibits?

- a) Echinocandins: beta-glucan synthesis.
- b) Azoles: DNA and RNA polymerase.
- c) Griseofulvin: peptidoglycan synthesis.
- d) Flucytosine: ergosterol synthesis.