



# Pharmacology

Subject : **ANTI FUNGAL DRUG 2**

Lec no : **31**

Done By : **Lana Altutanji**

وَقُلْ رَبِّ زِدْنِي عِلْمًا



# Drugs For Cutaneous Mycotic Infections

## DRUGS FOR CUTANEOUS MYCOSES

**Butenafine** LOTRIMIN ULTRA

**Butoconazole** GYNAZOLE

**Clotrimazole** LOTRIMIN AF

**Ciclopirox** PENLAC

**Econazole** ECOZA

**Griseofulvin** GRIFULVIN V, GRIS-PEG

**Miconazole** FUNGOID, MICATIN, MONISTAT

**Naftifine** NAFTIN

**Nystatin** MYCOSTATIN

**Oxiconazole** OXISTAT

**Sertaconazole** ERTACZO

**Sulconazole** EXELDERM

**Terbinafine** LAMISIL

**Terconazole** TERAZOL

**Tioconazole** VAGISTAT-1

**Tolnaftate** TINACTIN

localy infection ال  
skin/ subcutaneous/ بال  
mucous membran

inhibition of mitotic spindles ←

# Drugs For Cutaneous Mycotic Infections

- Dermatophytes/tinea

ال tinea ممكن تكون في ال skin وتعمل alopecia او تكون بال toes أو sex organs

- Classified according to affected site, e.g., tinea pedis
- Main fungal classes that cause cutaneous infections:

1. Trichophyton
2. Microsporum
3. Epidermophyton

ال cutaneous mycotic infection ممكن تكون  
dermatophytes ال “onychomycosis “nails  
skin/ vagina/ (بتكون بال candidiasis أو ال  
oral cavity



tinea pedis



tinea capitis



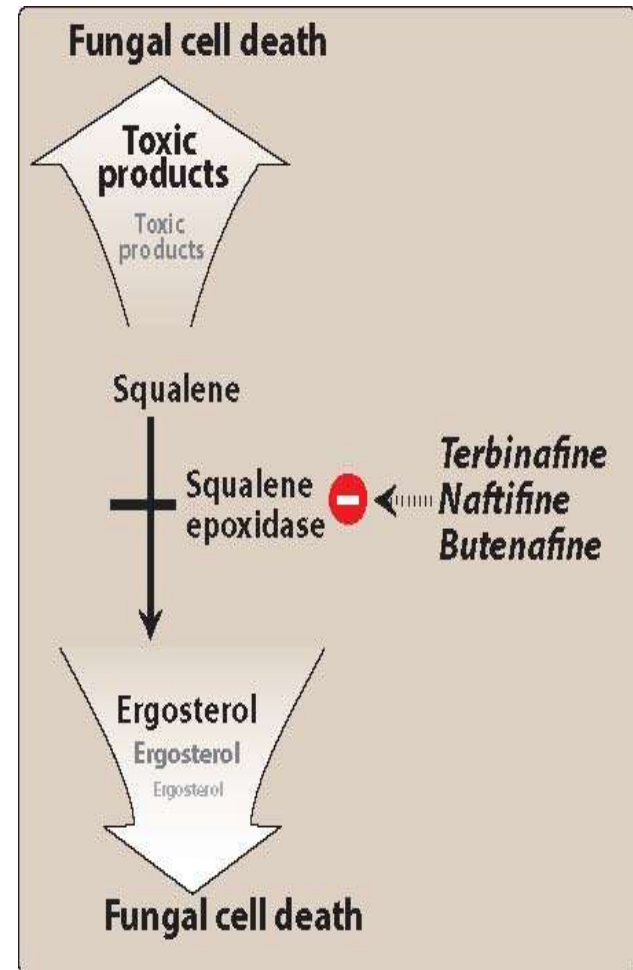
tinea corporis

# Squalene Epoxidase Inhibitors

# Squalene Epoxidase Inhibitors

## Mechanism of action

- Inhibition of squalene epoxidase
- Blocking the biosynthesis of ergosterol
- Squalene accumulation affects membrane permeability



# Terbinafine

**مهم** • Drug of choice for treating dermatophyte onychomycoses هو اول خيار

• More effective than itraconazole or griseofulvin for Trichophyton

• Useful in the treatment of tinea capitis

-oral terbinafine (topical ineffective)

-topical can be used with other types, e.g., pedis, corporis...



dermatophyte onychomycosis (fungal infection of the nail)

route of administration ال route of administration يختلف حسب نوع اد tinea يعني لو كان capitis بيتاخذ orally أما باقي الانواع بيتاخذ topically

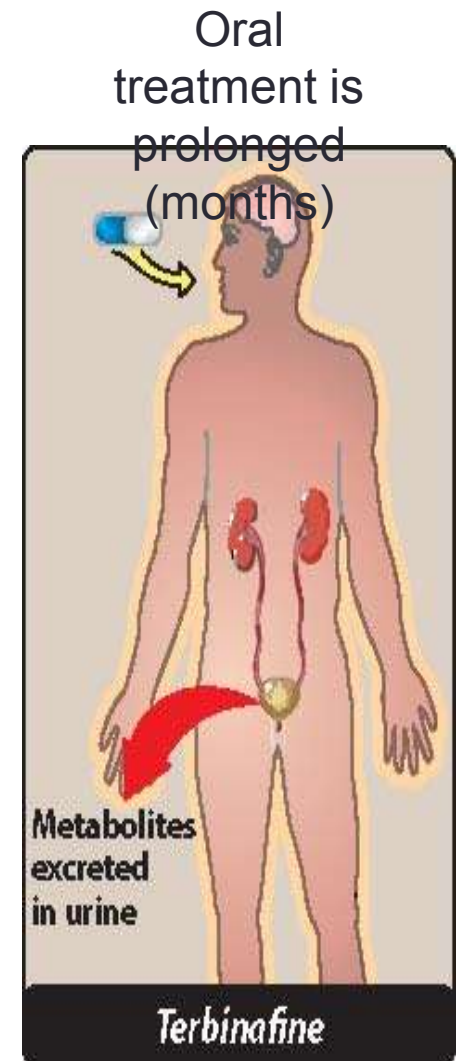
# Terbinafine

## Antifungal spectrum

- Effective against: Trichophyton, Candida, Epidermophyton, Scopulariopsis

## Pharmacokinetics

- Oral and topical
- Extensively metabolized by CYP450 and excreted renally
- Potent inhibitor of CYP2D6



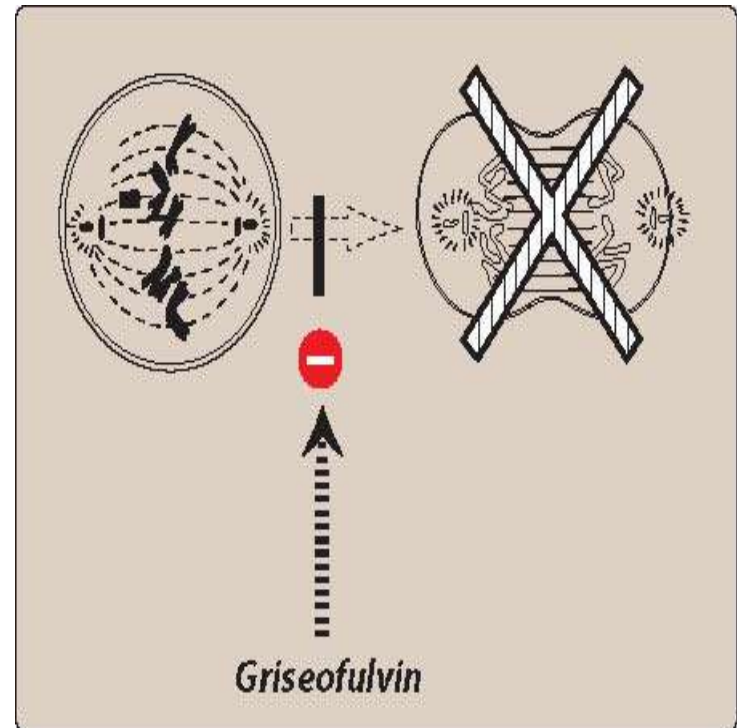
# Griseofulvin

بيتاخذ systemically بس بيشتغل locally



# Griseofulvin

- **MOA:** disruption of the mitotic spindle and inhibition of fungal mitosis *cell division* ما بچیر
- Has been largely replaced by oral terbinafine for nail infection
- Still used to treat dermatophytosis of the scalp and hair
- Fungistatic
- Requires long duration of treatment.
- INDUCES hepatic CYP450 activity
- Contraindicated in pregnancy and porphyria patients

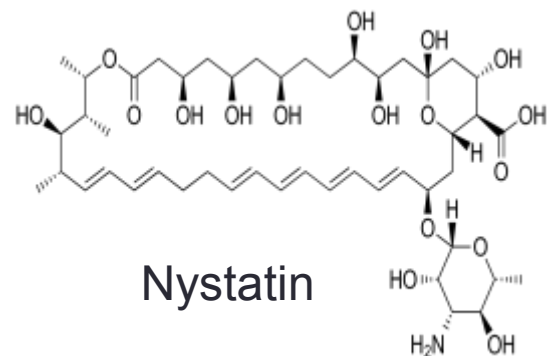
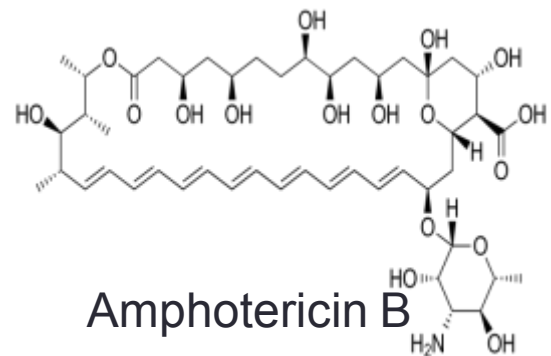


# Nystatin

بیشترغل locally لانه بال systemically بكون very toxic

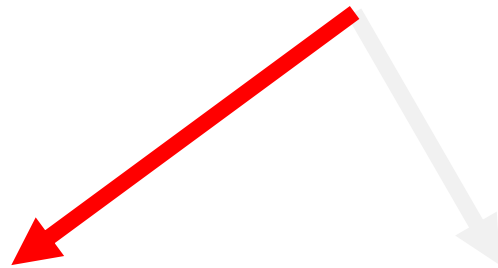
# Nystatin

- Polyene *double bond* في
- Very similar to amphotericin B *يعمل في ال pores في ال ergosterol فبصير تسريب لل K+*
- Used for the treatment of oral and cutaneous Candida
- Routes:
  - No parenteral use (toxic)
  - Orally (*مضمضة* “swish and swallow” or “swish and spit”)
  - Intravaginally
  - topically



هلا بال orally بحاجة مضمضة لكن إما بعد المضمضة ببلعه عشان يكون ال infection واصل لل esophagus طبعاً مارح يصيرله absorption أو ممكن بعد المضمضة بطرده برا الفم وهو يكون ال infection بس ال oral mucosa

Azole  
Antifungals



Imidazole  
Antifungals

Triazole  
Antifungals

ال ketoconazole هو very toxicity عشان هيك بعطيه locally



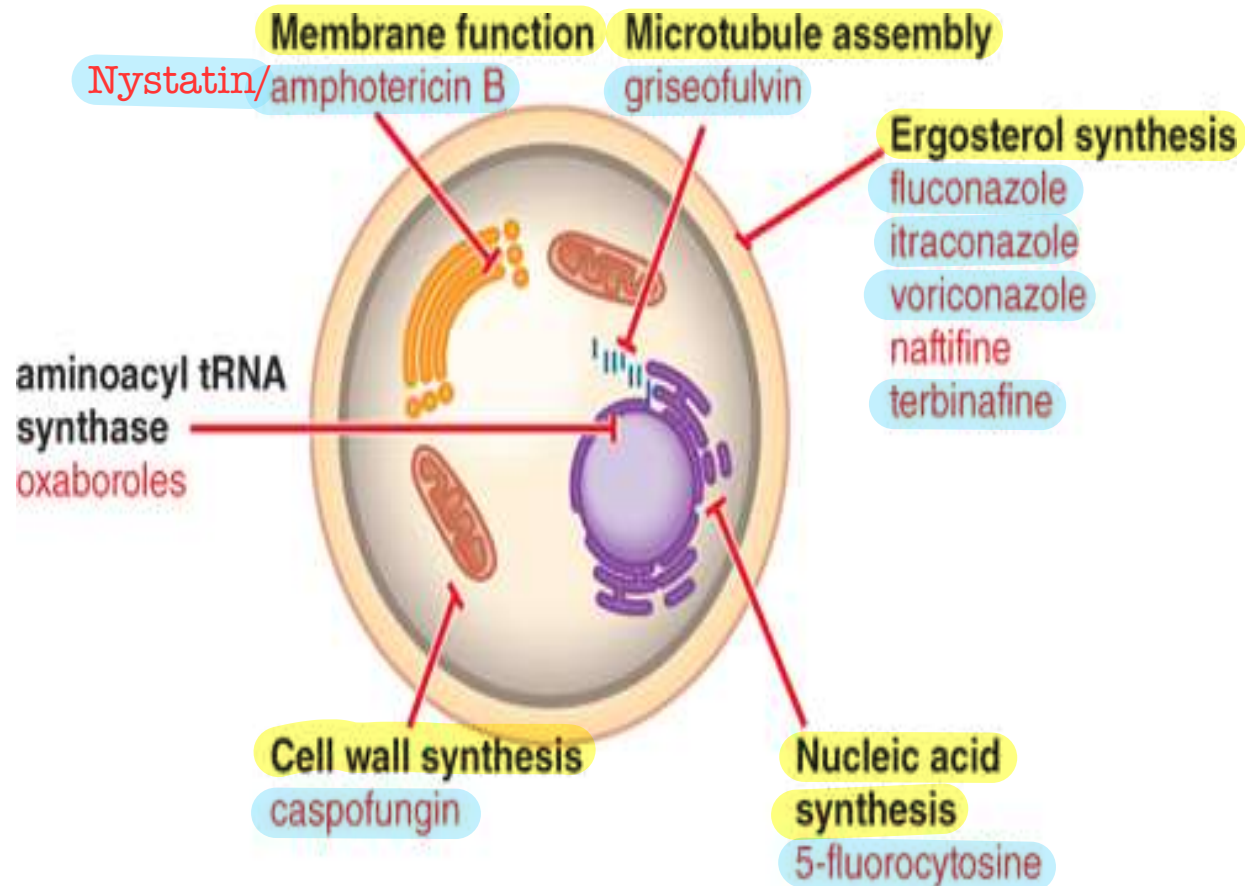
# Imidazoles

- Wide range of antifungal activity **broad spectrum**
- Still used topically for the treatment of tinea corporis, tinea cruris, tinea pedis, and oropharyngeal and vulvo-vaginal candidiasis
- **Miconazole**: available as a **buccal tablet**
- **Clotrimazole**: available as **throat lozenge**
- **Ketoconazole**: historically used for systemic mycoses (highly toxic – causes severe liver injury)

لأنه **very toxic** يستخدمه ك shampoo



# Summary



Source: Laurence L. Brunton, Randa Hilal-Dandan, Björn C. Knollmann:  
Goodman & Gilman's: The Pharmacological Basis of Therapeutics,  
Thirteenth Edition: Copyright © McGraw-Hill Education. All rights reserved.

THANK  
YOU