



السنة الخامسة
صيدلية مشفى

د. عبد الحكيم نتوف

محاضرة الفطور

■ Antifungal Drugs

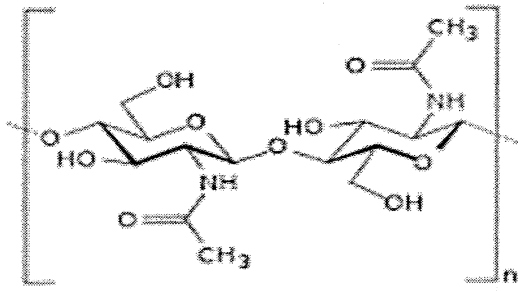
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مخاضة الطوار

■ Overview

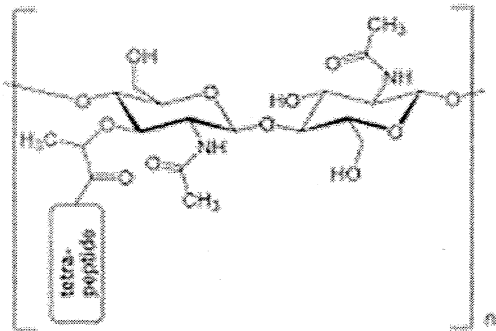
- **Infectious diseases** caused by **fungi** are called mycoses, and they are often **chronic** in nature. Many common mycotic infections are superficial and only involve the skin (cutaneous mycoses), but fungi may also penetrate the skin, causing subcutaneous infections. **The fungal infections that are most difficult to treat are the systemic mycoses, which are often life-threatening.**

- Unlike bacteria, fungi cell walls composed largely of chitin a polymer of N-acetylglucosamine rather than **peptidoglycan** (a characteristic component of most **bacterial cell walls**).

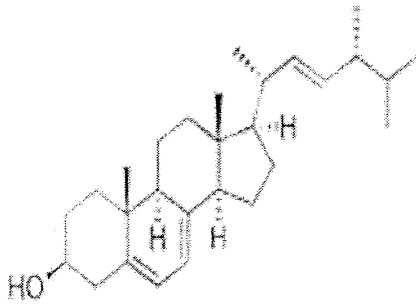
- The fungi cell membrane contains ergosterol rather than the **cholesterol** found in **mammalian membranes**. These chemical characteristics are useful in targeting chemotherapeutic agents against fungal infections.



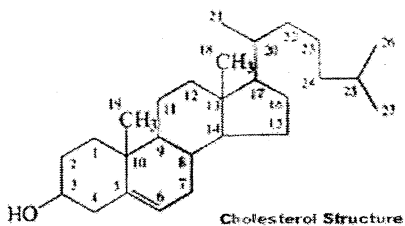
■ $(C_8H_{13}O_5N)_n = \text{Hexosamines} = \text{CHITIN}$



■ **Peptidoglycan**



■ *ergosterol*



■ **cholesterol**

■ **Fungal infections** are generally **resistant to antibiotics** used in the treatment of bacterial infections, and **conversely, bacteria are resistant to the antifungal agents**. The last two decades have seen a rise in the incidence of fungal infections so that **candidemia** is the fourth most common cause of **septicemia**.

■ **Mycoses** can be further defined into fungi that are **yeasts or molds**.

■ The terms **yeast form reproduce by budding** (التبرعم).

■ **Yeasts include**, Examp: *Candida*, *Cryptococcus* ^{المُسْتَخْفِيَّة}, The pathogenic species of *Candida* include *C. albicans*, *C. krusei*, *C. parapsilosis*, *C. tropicalis*, *C. lusitaniae*, *C. glabrata* (*Torulopsis glabrata*), *C. guilliermondii*, *C. pseudotropicalis*, and *C. dubliniensis*.

- **Molds are composed of hyphae (خيطة).**
- **Molds include Aspergillus and the agents of mucormycosis فُطَار عَفَنِيّ.**
- ***Aspergillus fumigatus* is the most pathogenic of the molds and the most common of that species to cause invasive disease.**
- **Other species of aspergillus include *A. flavus*, *A. terreus*, and *A. niger*.**

- The **dimorphic** fungi are capable of producing both **hyphal** and **yeastlike** forms **depending on temperature.**
- They typically grow as yeasts at body temperature and as molds at room temperature.
- The **dimorphic** fungi include the agents of **histoplasmosis, blastomycosis, sporotrichosis** دَاءُ الشَّعْرِيَّاتِ الْمُبَوَّغَةِ , **coccidiomycosis, paracoccidioidomycosis, and chromoblastomycosis** فُطَارٌ اصْطِبَاغِيّ
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