

BIOL 150-02: Intro to the Science of Biology; Dr. Lina Yoo

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Class page: http://www.denison.edu/library/research/biol_150.html

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Plagiarism exercise

Examine the paragraphs below and decide which constitute examples of plagiarism and which represent a legitimate use of the literature.

Original: “However, the significant incidence of fungal infections on the growing population of immunocompromised patients and the emerging resistance to existing drugs emphasize the importance of molecular studies concerning antifungal resistance, which in turn may be valuable in the search for new targets and in the improvement of the existing antifungals.”

From: Martinez-Rossi, N. M., Peres, N. T. A., Rossi, A. 2008. Antifungal resistance mechanisms in Dermatophytes. *Mycopathologia* 166: 369-83

Original: “A number of striking differences exist between bacteria and fungi that may preclude any explosion of resistance in fungi. In bacteria, resistance can emerge through mutation under selective pressure, be present but unexpressed until upregulated, and/or be acquired through mobile, transferable elements containing genetic material, such as plasmids, viruses, or transposons. In particular, the rapid expansion of bacterial resistance is attributable to horizontal transfer of extrachromosomal material across species [47]. Although fungi, in principle, may carry similar transferable genetic elements, they never code for antifungal resistance; furthermore, intact fungal cells do not readily take up exogenous DNA.”

From: Hof, H. 2008. Will resistance in fungi emerge on a scale similar to that seen in bacteria? *Eur J Clin Microbiol Infect Dis* 27: 327-34

- 1- Even though the development of drug resistance in fungi is more uncommon than in bacteria, the molecular pathways should be investigated because of the increased numbers of immunocompromised patients affected by fungal infections.
- 2- A number of striking differences exist between bacteria and fungi that may preclude any explosion of resistance in fungi (Hof 2008). However, the significant incidence of fungal infections on the growing population of immunocompromised patients and the emerging resistance to existing drugs emphasize the importance of molecular studies concerning antifungal resistance (Martinez-Rossi et al. 2008).
- 3- The emergence of resistance in bacteria and fungi follows different molecular pathways making it more difficult for fungi strains to develop resistance to antifungal drugs (Hof 2008). However, according to Martinez-Rossi and colleagues (2008), the number of patients with a compromised immune system that develop fungal infections has increased, and a better understanding of those pathways could lead to an improvement in their treatment.
- 4- According to Hof (2008): “A number of striking differences exist between bacteria and fungi that may preclude any explosion of resistance in fungi”. However, Martinez-Rossi and colleagues (2008) argued that “the significant incidence of fungal infections on the growing population of immunocompromised patients and the emerging resistance to existing drugs emphasize the importance of molecular studies concerning antifungal resistance”.