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Synthesis and Antimicrobial Activity of Novel Lactones

Novel, nontoxic compounds are being developed as efficient, broad-spectrum therapeutic agents for fungal and bacterial infections, including Clostridium difficile, without harming beneficial microflora.

Invasive fungal infections are a serious cause of mortality in many patients including an increasing number of immunocompromised patients. Few treatment choices exist and first-line therapies have significant limitations due to safety problems and the lack of broad-spectrum activity. There is a need for novel antibacterial/antifungal agents and efficient methods of making these agents.

Researchers at Purdue University have identified several compounds with novel structures that indicate promising antibacterial and antifungal activity. Researchers evaluated the compounds against important bacterial, yeast, and mold pathogens. Preliminary results demonstrated promising activity against toxigenic strains of Clostridium difficile. The compounds did not show a side effect on beneficial intestinal microflora and were nontoxic. Researchers are currently preparing analogues of the antibacterial and antifungal lead compounds to improve potency and physicochemical properties for new therapeutic development.

Advantages:

-Efficient

-No effect on beneficial intestinal microflora

-Nontoxic

Potential Applications:

-Pharmaceuticals

-Drug development

-Treatment for fungal and bacterial infections

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