ACS Infectious Diseases

In This Issue

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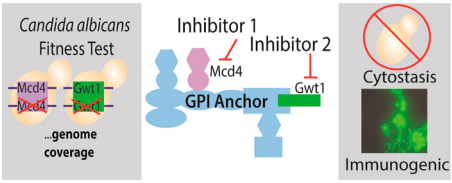
CHEMICAL GENOMICS-BASED ANTIFUNGAL DRUG DISCOVERY

There is a great need for novel antifungal agents as shown by the persistence of pathogens such as *Candida albicans*, which remains the fourth leading cause of bloodstream infections, and with the observed increase in *C. albicans* azole resistance.

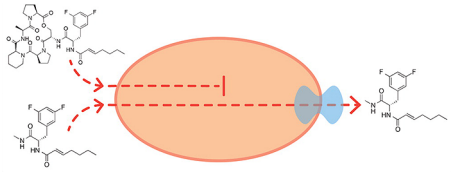
In this inaugural issue, Mann et al. (DOI: 10.1021/id5000212) identified new antifungal agents using chemical genomic based screening approach. Three compounds targeted discrete steps in glycosylphosphatidylinositol (GPI) precursor biosynthesis. The inhibitors showed increased permeability of the *C. albicans* cell wall. The group also demonstrates that a semisynthetic analog of one inhibitor is efficacious in murine infection model of candidiasis. These compounds could provide important chemical tools in evaluating the process of GPI biosynthesis in terms of a target pathway for antifungal drug development.



NEW STRATEGY FOR SUPPRESSING THERAPY EFFLUX

Membrane protein-mediated drug efflux compromises the ability to treat infectious diseases and cancer. As such, there is much interest in developing strategies to suppress the mechanisms involved in the efflux of therapeutic agents.

In this issue, Compton et al. (DOI: 10.1021/id500009f) demonstrate a new counter-efflux strategy wherein a fragment of an actively exported bioactive compound competitively interferes with its efflux and potentiates its activity. One fragment potentiates the antibacterial activity of cyclic acyldepsipeptide against actino-bacteria to a greater extent than a well-known efflux inhibitor. Furthermore, the approach could be applied to small molecule therapeutics that are acted upon by efflux pumps. These results could have positive implications for infectious disease treatment and cancer therapy.



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