

innovations

from the University of Vermont

TITLE: ANTI-FUNGAL AGENTS AND ASSAY

INVENTORS: Douglas I. Johnson, Ph.D., Kurt A. Toenjes, Ph.D.

DESCRIPTION: The pathogenicity of many opportunistic fungal pathogens depends on their ability to switch between budded and hyphal growth patterns. The inventors have identified a number of small molecules that may be used to treat fungal infections, including *Candida albicans* and *Aspergillus flavus*, by inhibiting the budded-to-hyphal phenotypic transitions required for pathogenicity. The inhibitors and related structural derivatives have been identified, characterized, and a high-throughput small molecule assay has been developed to screen additional candidates. Identification of the cellular targets for these inhibitory small molecules using biochemical and cell biological approaches is currently underway. Controlling opportunistic fungal infections in immuno-compromised individuals is critical for their long term survival and a factor in over 90% of AIDS patients alone.

ADVANTAGES: The inventors have developed a robust and reproducible assay that is amenable to high-throughput screens of inhibitory and stimulatory small molecules. The inventors have used the assay to identify and characterize novel small molecules that can inhibit the budded-to-hyphal morphological transition that is essential for fungal virulence, and therefore, are potential therapeutic molecules against fungal infections and biofilms.

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