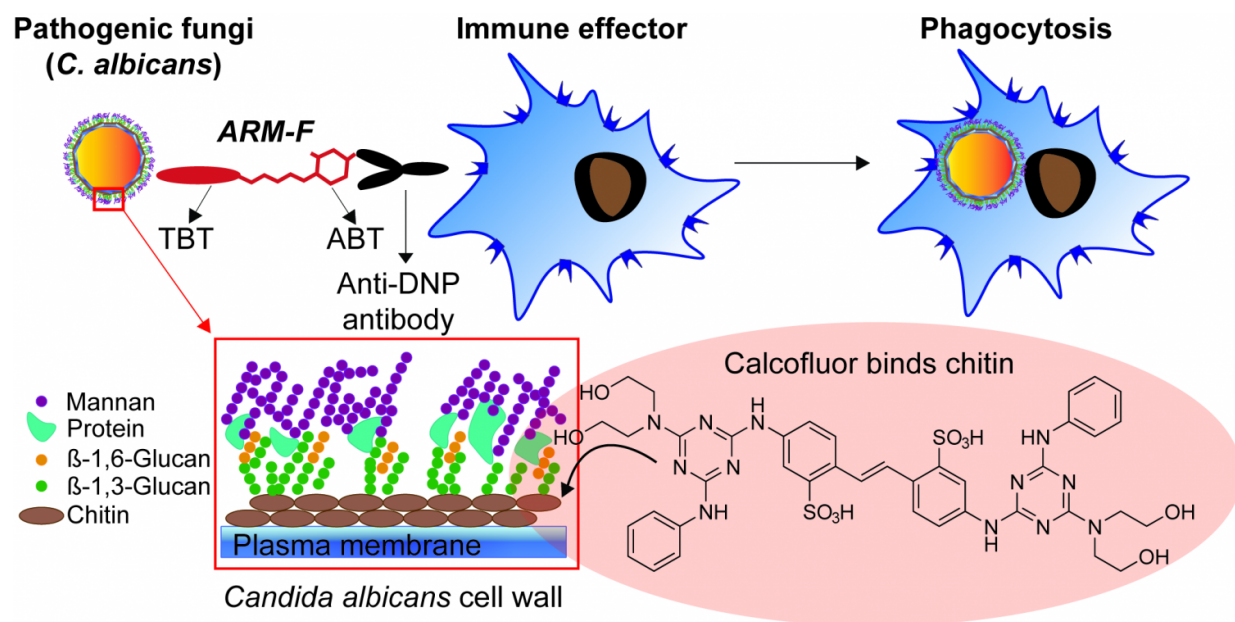


# Storming the cellular barricades to fight fungi

September 12 2017



The design of antifungal antibody-recruiting small molecules (ARM-F) targeting chitin, a fibrous substance in the cell walls of fungi. Credit: Yale University

Yale scientists have developed a new class of small molecules that attack fungal infections by clinging to the cell wall of harmful fungi and recruiting a swarm of antibodies to join the fight.

The discovery offers a potential new therapeutic approach to treating fungal illnesses that affect thousands of people each year, including

patients whose immune systems are compromised by organ transplants, cancer treatment, and HIV infections.

The new compounds are called antibody-recruiting molecules targeting fungi (ARM-Fs). These [small molecules](#) have two main features: a target-binding terminus that latches onto the fungal cell wall, and an antibody-binding terminus that recognizes and recruits antibodies already present in the human bloodstream.

"Because we're using the human immune system as the effector arm, this strategy is incredibly versatile," said Yale chemistry and pharmacology professor David Spiegel, senior author of the study describing the discovery in the German science journal *Angewandte Chemie*. "It is the first time we've shown this strategy can work in treating a [fungal disease](#)."

Over the past decade, Spiegel's lab has explored small-molecule approaches to treating a range of diseases, including cancer and HIV. Not only are such molecules effective against drug-resistant strains of diseases, Spiegel said, they also may be used in combination with existing treatments.

"The possibility of a molecule like ours synergizing with existing fungal agents has tremendous potential," Spiegel said.

Provided by Yale University

Citation: Storming the cellular barricades to fight fungi (2017, September 12) retrieved 23 June 2024 from <https://phys.org/news/2017-09-storming-cellular-barricades-fungi.html>

This document is subject to copyright. Apart from any fair dealing for the purpose of private study or research, no part may be reproduced without the written permission. The content is

provided for information purposes only.