Microbiologists find source of fungus's damaging growth

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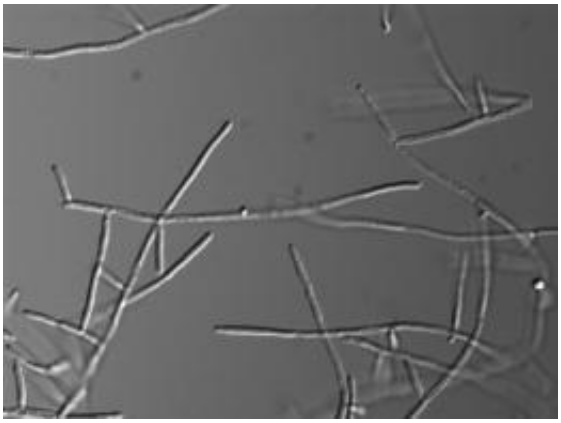

This is an image of hyphal *Candida albicans* cells. This fungus attacks patients with weakened immune systems. It also causes yeast infections and oral thrush. Credit: David Kadosh, Ph.D., UT Health Science Center San Antonio

Candida albicans, a fungus that kills more than 10,000 people with weakened immune systems each year, grows more dangerous as it forms and extends long strands of cells called hyphal filaments. In a paper published this month, UT Health Science Center San Antonio microbiologists describe a key factor involved in this damaging growth.

This finding may eventually lead to targets for antifungal strategies, the scientists said.

Patricia Carlisle, a Ph.D. student at the Health Science Center, and

David Kadosh, Ph.D., assistant professor of microbiology, found that Ume6, a key transcriptional regulator, targets a specific hyphal filament-development mechanism. "No one knew that Ume6 was involved in directing this process," Dr. Kadosh said. "Perhaps we can learn how to mute its signals."

Transcriptional regulators direct the conversion of DNA (deoxyribonucleic acid) into RNA copies. Copies of RNA (ribonucleic acid) are translated into proteins that carry out activity.

Bug's impact

Candida albicans preys on hospitalized critical care patients, HIV/AIDS patients, cancer patients and others with weakened immune systems. It is the fourth-leading cause of hospital-acquired infections in the United States.

"The forming of hyphal filaments is very important in tissue invasion and other activities," Dr. Kadosh said.

The findings were featured as a Spotlight article in the September issue of *Eukaryotic Cell,* a journal of the American Society for Microbiology.

More information: Eukaryotic Cell journal article: ec.asm.org/cgi/reprint/9/9/1320

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