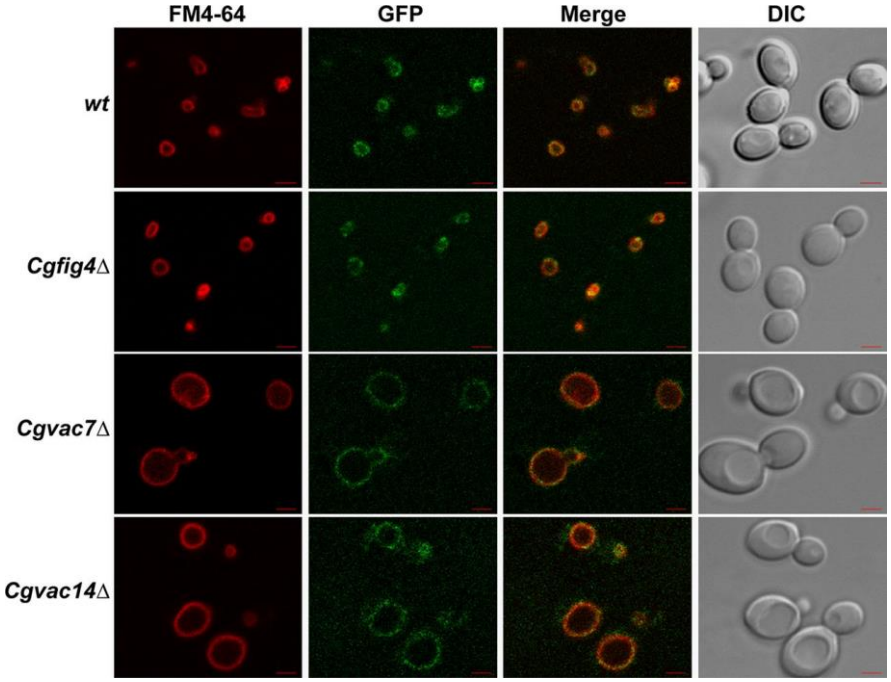
Essential role for the PI(3,5)P2 synthesis complex in caspofungin tolerance and virulence in *Candida glabrata*

The DBT's Centre for DNA Fingerprinting and Diagnostics (DBT-CDFD), Hyderabad, have uncovered a pivotal role for proteins, that are required for synthesis of the lipid, phosphatidylinositol 3, 5-bisphosphate [PI (3, 5) P2], in tolerance to echinocandin drugs and pathogenesis of *C. glabrata*. Team further showed that the PI (3, 5) P2 phosphatase is important for maintenance of cellular PI (3,5) P2 levels and azole and echinocandin tolerance. Overall, besides showing a complex genetic relationship among different constituents of the PI (3,5) P2 regulatory complex, current findings advance our understanding of antifungal drug resistance mechanisms in *C. glabrata*. Additionally, we propose CgVac7 (a positive regulator of PI(3,5)P2 synthesis), whose homologs are absent in higher eukaryotes, to be a new target for antifungal therapy. The findings were published in journal, *Antimicrobial Agents and Chemotherapy*.



Candida glabrata is an opportunistic human fungal pathogen which is capable of causing both superficial mucosal and life-threatening blood-stream infections in immunocompromised individuals. *C. glabrata* divides by budding, and is able to tolerate a variety of stress conditions very well. Its infection is difficult to treat due to inherent less susceptibility of *C. glabrata*

towards azole antifungals that block ergosterol biosynthesis, and growing resistance of *C. glabrata* towards echinocandin antifungals that target the fungal cell wall, with azoles and echinocandins being two widely used antifungals. A range of lipid molecules are known to regulate diverse cellular signaling pathways.

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