

## DBT-RCB study finds new way to prevent and degrade fungal biofilms

New Delhi, March 09: Infections caused by fungal growth species as biofilms on medical devices can cause organ damage via candidiasis and candidemia. Different *Candida* species like *Candida albicans* can pose a serious threat by resisting host's immune system and by developing drug resistance against existing antimycotic agents. Therefore, targeting of fungal membranes can be used as an alternative strategy to combat the fungal infections.

In a new study, researchers at DBT-Regional Centre for Biotechnology (DBT-RCB), Faridabad have presented the screening of different amphiphiles based on cholic acid against different *Candida* strains as these amphiphiles can act as potent membrane-targeting antimycotic agents.

Structure–activity correlations, biochemical assays and electron microscopy studies showed that amphiphiles having 4 and 6 carbon chains are most potent, safe and can act on the fungal membranes. *Candida albicans* did not show emergence of drug resistance on repeated usage of these amphiphiles unlike fluconazole. The study showed that these amphiphiles can prevent the formation of biofilms and also have the ability to degrade preformed biofilms on different substrates including acrylic teeth.

It was further demonstrated that amphiphiles 4 and 6 can clear the *Candida albicans* wound infections and prevent the biofilm formation on indwelling devices in murine models. Therefore, amphiphiles derived from cholic acid and their coatings provide suitable alternatives for inhibiting the fungal infections.



Dr. Avinash Bajaj along with his group members and collaborators published a research article on ‘Cholic-Acid-Derived Amphiphiles Can Prevent and Degrade Fungal Biofilms’ (<https://doi.org/10.1021/acsabm.9b01221>).

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