



Repurposing of existing Pitavastatin drug for treatment of Candida albican infections

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Abstract:

The incidences of opportunistic fungal infections have increased from the last two decades or threaten to increase in the near future. These infections are responsible for ~ 1.3 million deaths per year worldwide with members of the genera Candida, Cryptococcus and Aspergillus most often associated with life-threatening disseminated disease. Five major classes of antifungal compounds are currently in clinical use: polyenes, azole derivatives, allylamines, thiocarbamates, and fluoropyrimidines. Despite these leading antifungal agents, treatment still remains unsatisfactory due to resistance problem which have led to an increased interest in the testing of new antifungal drugs. Unfortunately, the development of an entirely new drug is a long (approx. 20 years) and expensive process (approx. 100 billion dollars). Drug repurposing is an alternative strategy in drug development, in which already clinically approved drugs are explored for their alternate use. Today, more and more Pharmaceutical companies are scanning the existing pharmacopoeia for repositioning candidates, and the number of repositioning success stories is increasing. **Methodology - Computational study:-**To check the interaction of Pitavastatin towards CYP450 lanosterol alpha demethylase. **In vitro studies-** i) Control-cells without drug. ii) Standard-fluconazole with Candida albican. iii) Test-Pitavastatin (10, 20 & 40 ug/ml with Candida albican. **In vivo studies-** Parameters:-Candida albicans growth. Visualization of ulceration, erythema and crusting. **Statistical test:-**ANOVA METHOD ($p < 0.05, 95\% C.I.$).



Biography:

Ritika Rana is a research student at ISF Institute. She has completed her Masters of Pharmacy in 2018 from ISF College from Moga, Punjab. She has done her Bachelor of Pharmacy in 2016 from Laureate Institute from Kangra. She has worked in the project “Repurposing of Existing Statin drugs for the treatment of Microbial Infections”. Her discipline is in Parasitology, Molecular Biology and Microbiology.

Publication of speakers:

1. Rana, Ritika, Ruchika Sharma, and Anoop Kumar. “Repurposing of Fluvastatin against Candida albicans CYP450 lanosterol 14 α -demethylase, a target enzyme for antifungal therapy: An In silico and In vitro study.” *Current molecular medicine* 19, no. 7 (2019): 506-524.
2. Rana, Ritika, Ruchika Sharma, and Anoop Kumar. “Repurposing of Existing Statin Drugs for Treatment of Microbial Infections: How Much Promising?.” *Infectious Disorders-Drug Targets (Formerly Current Drug Targets-Infectious Disorders)* 19, no. 3 (2019): 224-237.

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