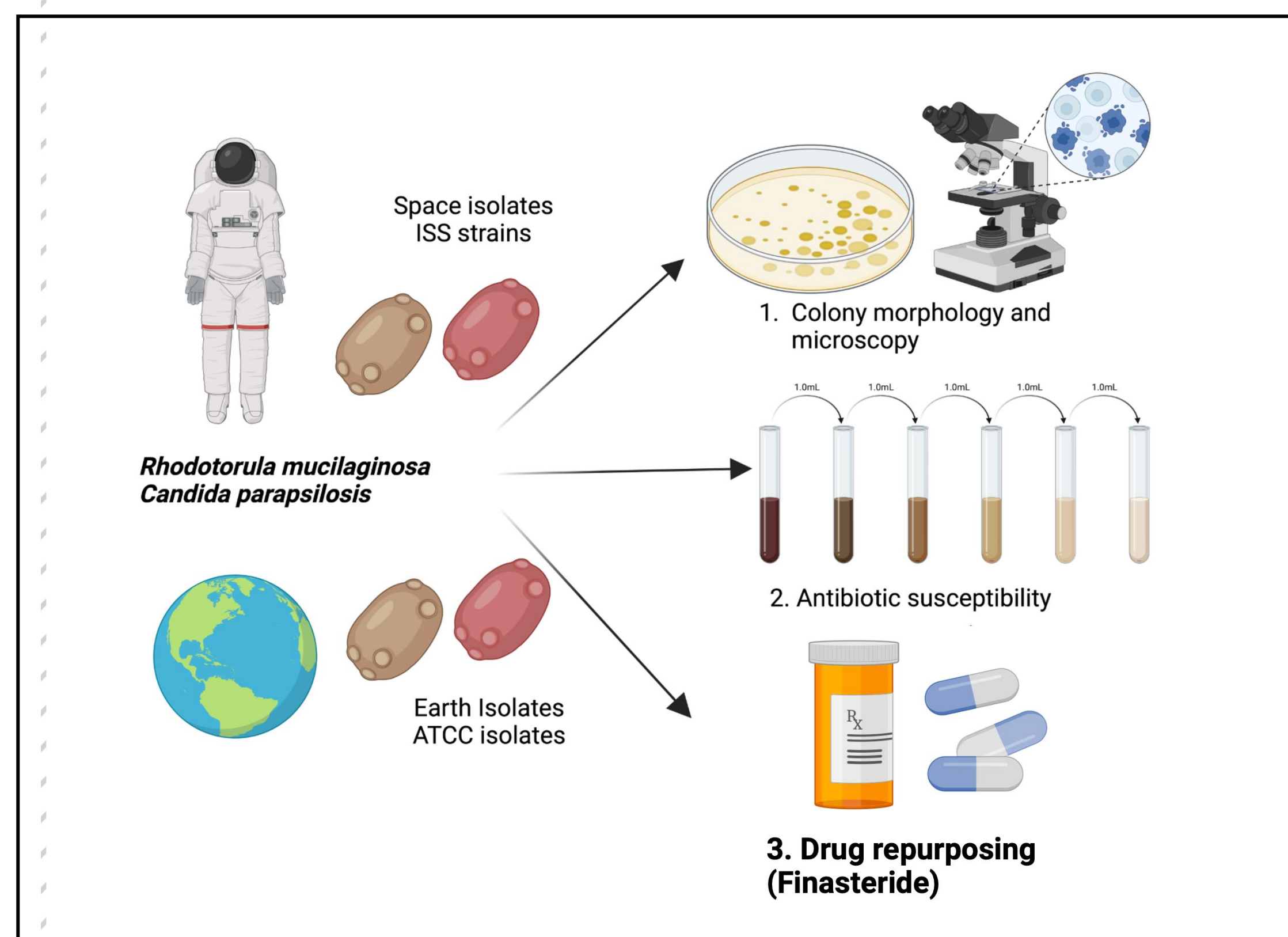


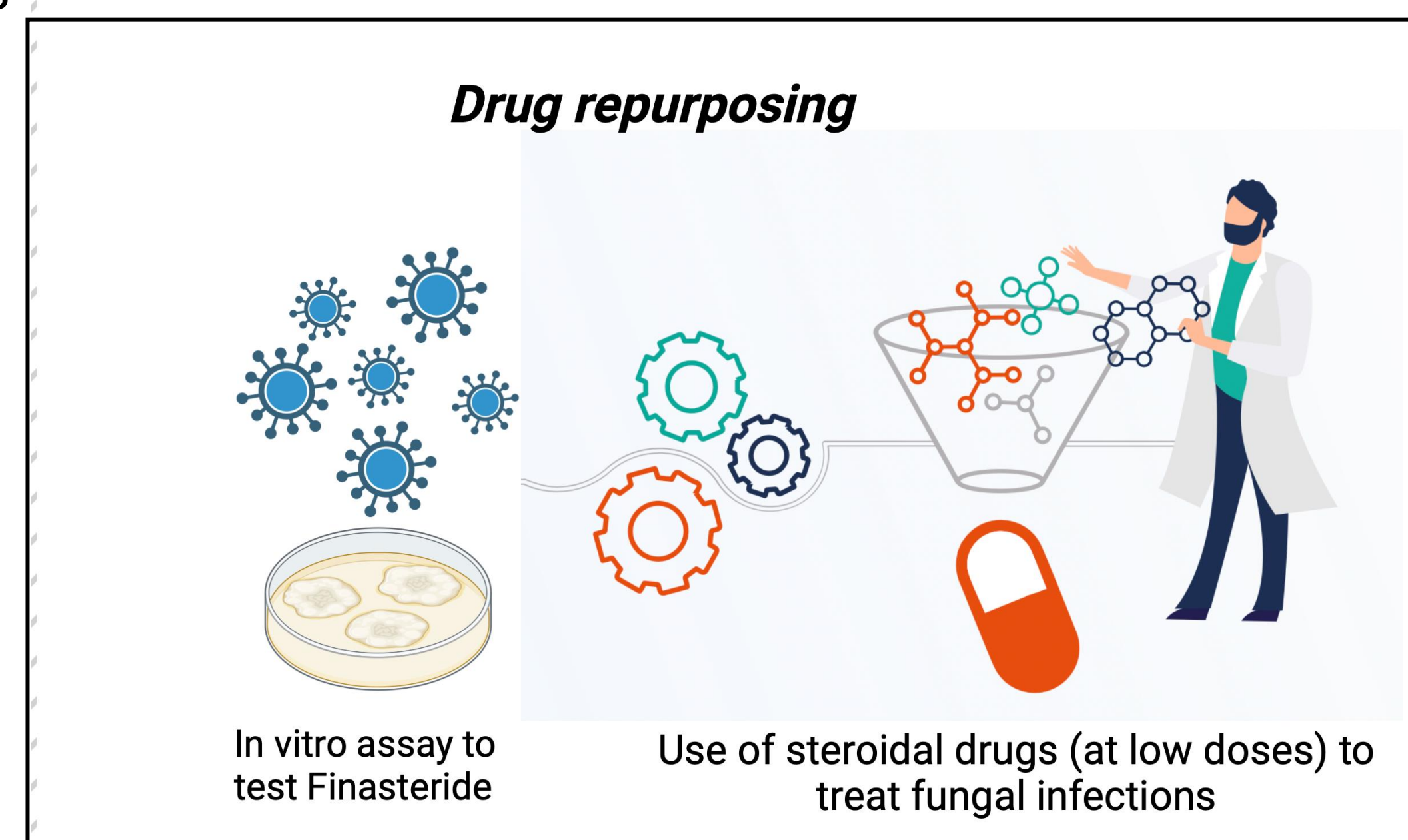
## Abstract

The emergence in antimicrobial resistance has become an increased problem as a consequence to human vulnerability to fungal infections. Human commensal microbes (those who in normal conditions do not cause any infection, including yeast) have become opportunistic pathogens when patients become immunocompromised. As a consequence, strains that commonly do not cause disease then become a serious health concern. Moreover, the use of conventional antifungal drugs such as azoles and polyenes can lead to clinical failure and difficulties related to treating fungal infections, and combined with the time required to develop new drugs, we require urgent consideration of other therapeutic alternatives. Drug repurposing is a promising and fast solution that the scientific community can use with low cost and safety advantages

## Introduction Experimental Design



**Figure 1:** Space and earth isolates demonstrate different phenotypes. Antifungal experiments using drug repurposing include the effect of Finasteride on fungal growth of *Candida* and *Rhodotorula*.

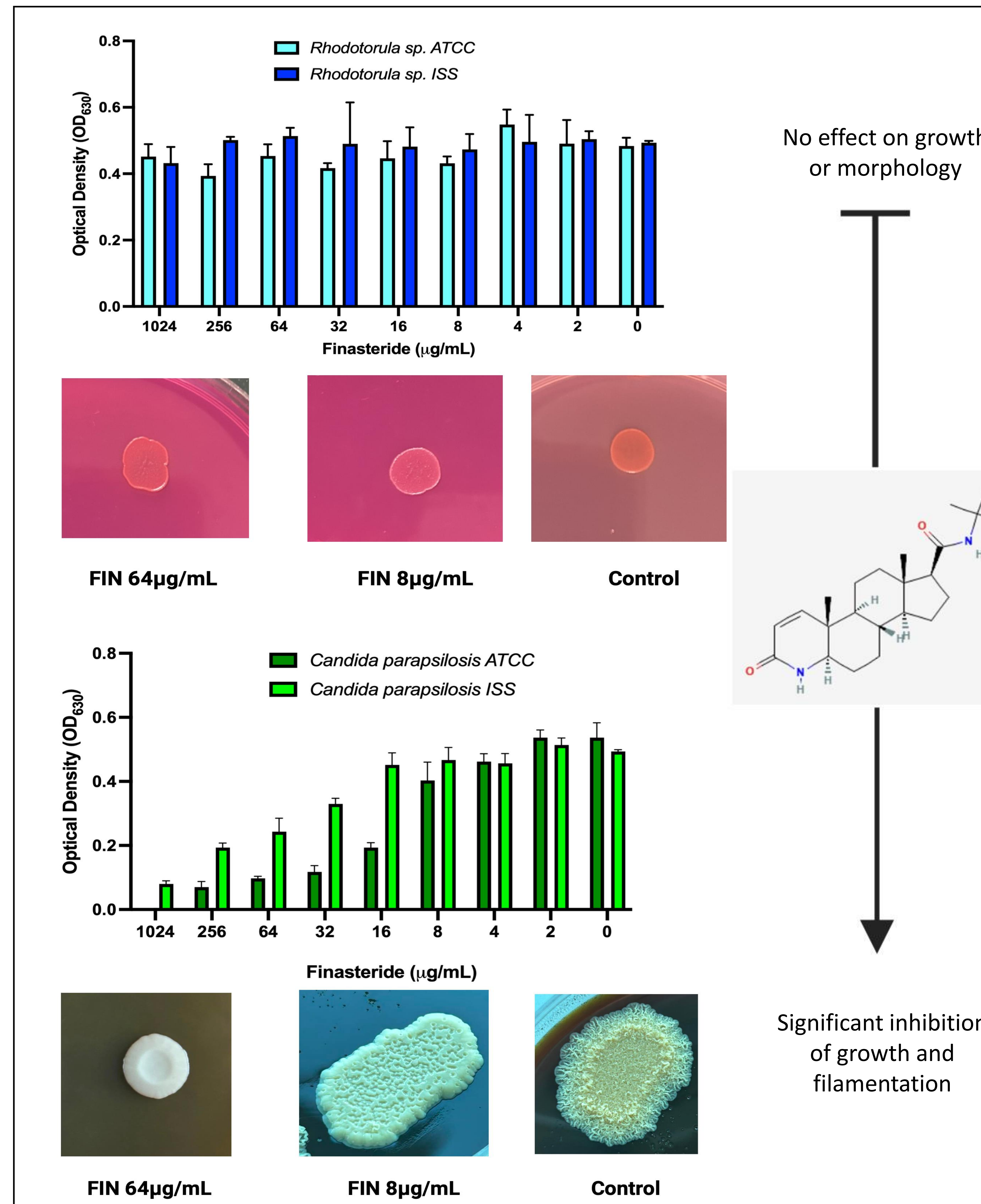


**Figure 2:** Drug repurposing in vitro experiments (inhibition of growth) are selected to test efficacy of Finasteride against yeast

## Hypothesis

**Finasteride at low concentrations will affect the fungal growth of two yeast strains isolated from the ISS.**

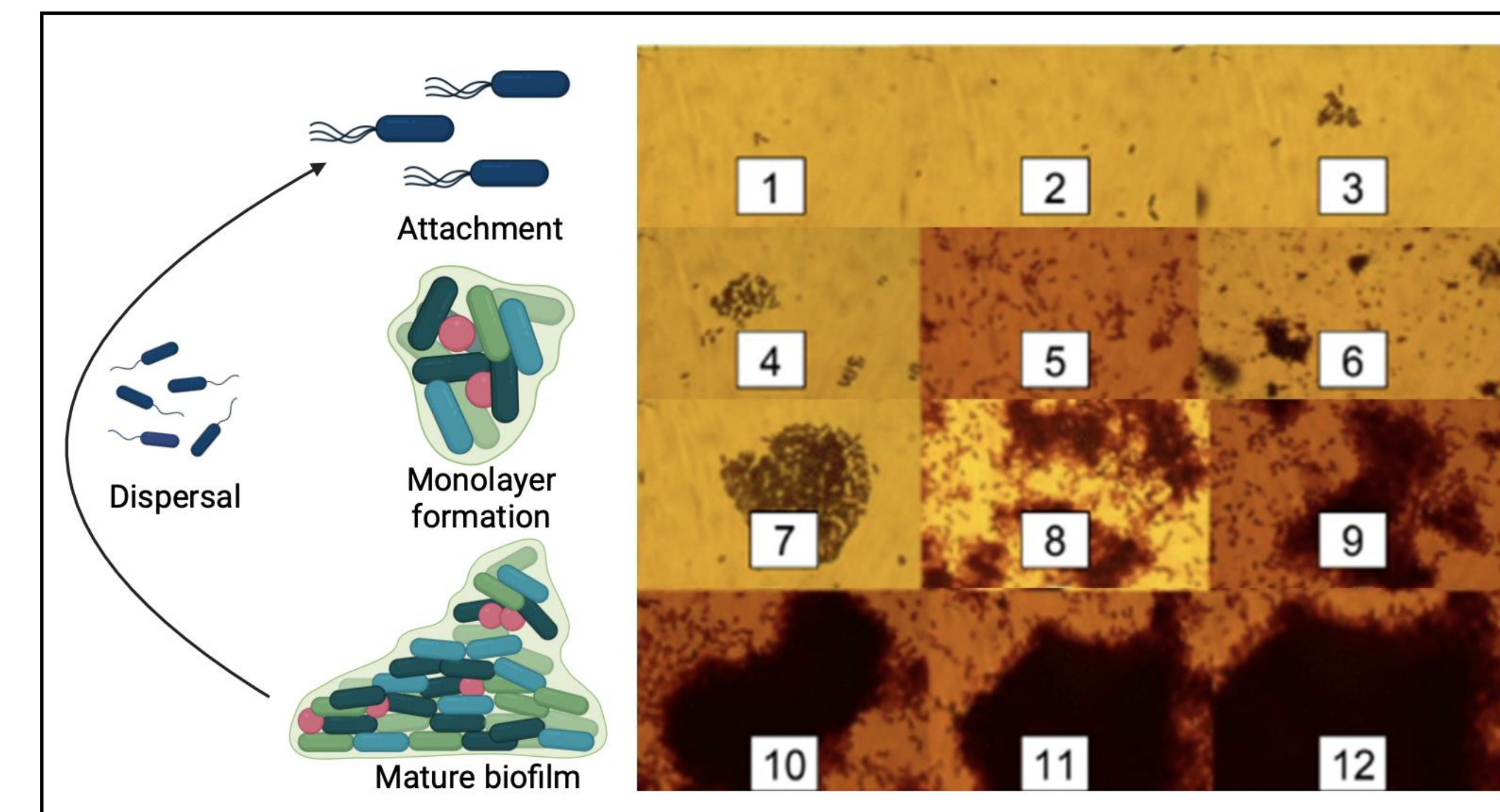
## Results



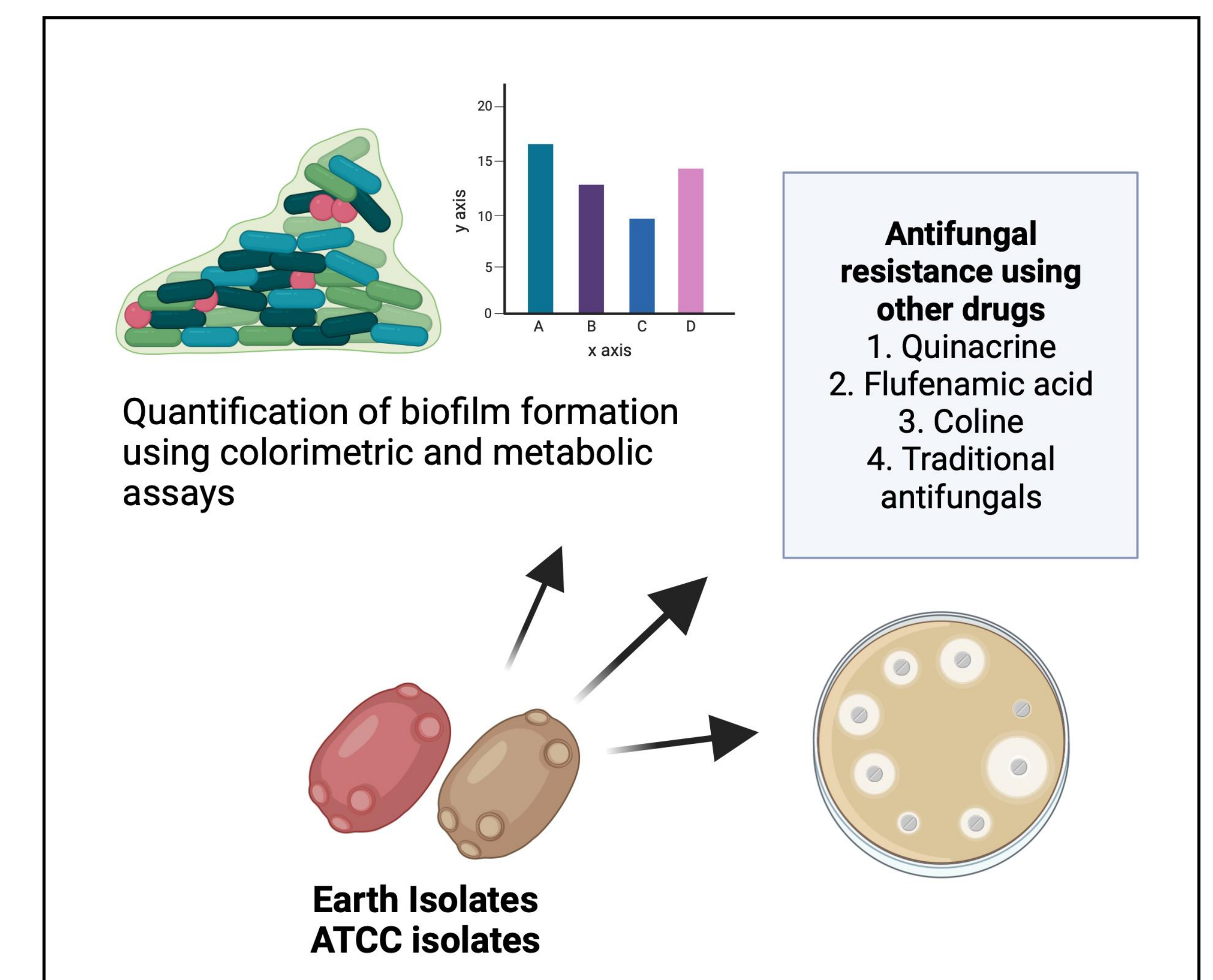
**Figure 3:** Antimycotic susceptibility tests. Finasteride was effective against *Candida* growth but not *Rhodotorula*. The isolates from the ISS demonstrated a higher resistance to Finasteride.

## Future perspectives

- We aim to measure the effect of Finasteride on biofilm formation (bacterial and fungal communities).
- We have performed a microscopic analysis of the stages of biofilm formation (from attachment to mature biofilm formation).



**Figure 4:** Biofilm formation dynamics (Attachment from 1-3, Monolayer formation from 4-7, and Mature biofilm formation from 8-12).



**Figure 5:** Future studies. Measurement of Biofilm formation, testing of other drugs and traditional antifungals.

## Acknowledgements

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