

# **Evaluation of antifungal efficacy of Piper Betel and Vitex trifolia against** Candida albicans and Candida glabrata : an in-vitro and in silico study



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# RATIONALE

•Mucocutaneous opportunistic infections – Candida albicans

•Phenotypic switching, polymorphism and thigmotropism

•Non-albicans species

•*Candida glabrata* - lacks phenotypic switching, drug resistant, immunocompromised

# **NEED FOR THE STUDY!**

•Drug resistance

•Adverse effects

•Need for less toxic, more effective, easily available, bioactive

•Betel leaf – "neglected green gold of India"

•Vitex trifolia – "sarvaroganivarani"

To evaluate the antifungal efficacy of *Piper betel* and Vitex trifolia leaves against Candida albicans and Candida glabrata

# OBJECTIVE

•To evaluate the antifungal efficacy of *Vitex trifolia* leaves against Candida albicans and Candida glabrata

•To evaluate the antifungal efficacy of *Piper betel* leaves against Candida albicans and Candida glabrata

•To compare the antifungal efficacy of *Piper betel* and Vitex trifolia leaves against Candida albicans and Candida glabrata

•To prove the antifungal action of *Piper betel* and *Vitex* trifolia by molecular docking

■ ZONE OF INHIBITION (in mm)

Candida albicans - Betel leaf Candida albicans - Vitex trifolia

Candida glabrata - Betel leaf

Candida glabrata - Vitex trifolia

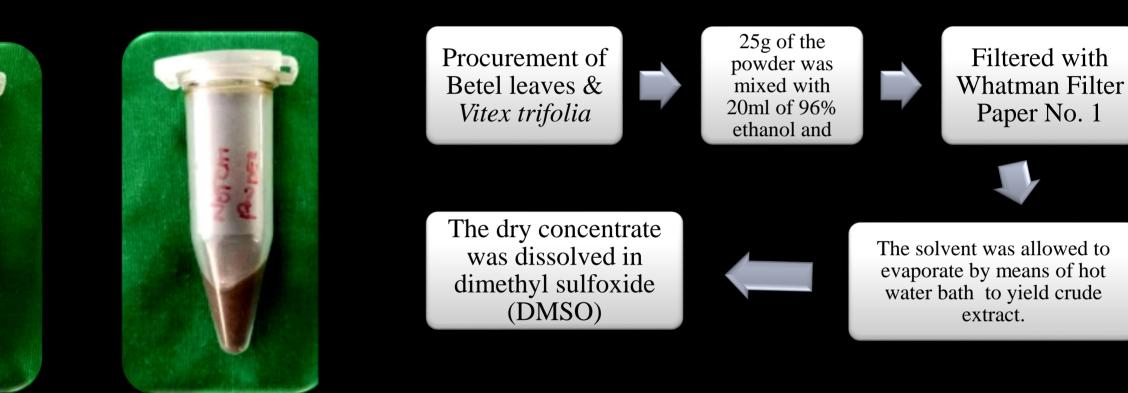
Fluconazole DMSO

### METHODOLOGY

### **Collection of leaves and preparation of extract**





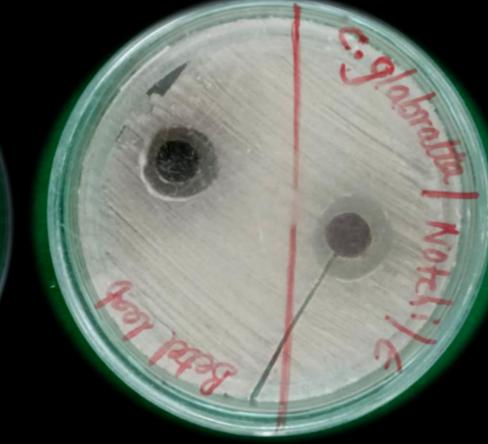


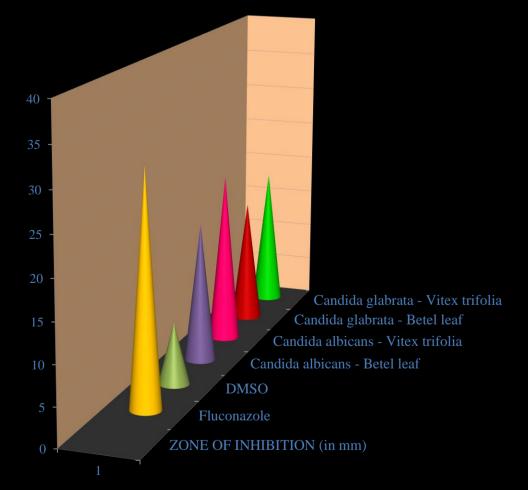
#### **Determination of antifungal efficacy**

### RESULTS









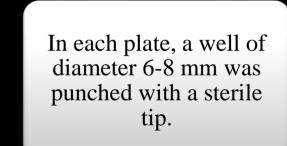
ZONE OF INHIBITION (in mm) Fluconazole DMSO 30

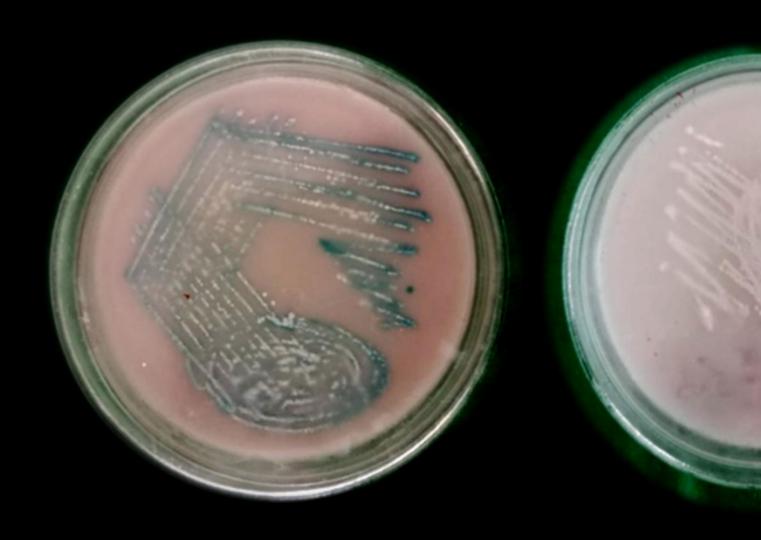
	ZONE OF INHIBITION (in mm)	
	Betel leaf	
		Vitex trifolia
Candida albicans	18	22
Candida glabrata	16	18

Strains of C.albicans and C.glabrata were obtained from Hi-media laboratory

These were inoculated onto Saboraud Dextrose broth. The suspension was streaked onto CHROMagar and the plates were incubated at 37°c

Antifungal efficacy was determined using agar well diffusion method in Saboraud Dextrose agar





The extract was added to the well and incubated at 37°c for 48 hours.

