

## **IN- VITRO SCREENING OF ANTIFUNGAL ACTIVITY OF DIFFERENT PARTS OF *Cassia fistula* IN KURUNEGALA**

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Fungal infections in human are on the rise. Even though, there are only few classes of antifungal agents available to treat these fungal infections. Therefore, the development of novel antifungal agents with a different mechanism of action is necessary. *Cassia fistula* showed numerous pharmacological effects but only few studies have explored the antifungal potential of different solvent extracts of different parts of the plant against the fungus that cause infections in human. This study focused on *in-vitro* screening of antifungal activity of different parts of *C. fistula* in Kurunegala and to screen the preliminary phytochemical analysis of different solvent extracts of *C.fistula*. The stem and bark of *C. fistula* plant were collected from Kurunegala, and shade dried, extracted using maceration technique with petroleum ether, ethyl acetate and methanol. Antifungal activity of different extracts (5 mg/ml, 2.5 mg/ml and 1.25 mg/ml) was determined against *Aspergillus niger* and *Candida albicans* using agar well diffusion method by employing Itraconazole as a standard. The diameter of zones of inhibition (mm) of the extracts were measured and the data were subjected to examine by analysis of variance (ANOVA) ( $P < 0.05$ ) by using a software, SPSS 25 for Windows version. Qualitative phytochemical screening for primary and secondary metabolites of all the extracts were done. Methanolic extract of bark revealed highest activity at 5 mg/ml against *A.niger* ( $13.33 \pm 0.577$  mm) while the methanolic extracts of stem exhibited highest inhibition against *C.albicans* at similar concentration ( $22.33 \pm 0.577$  mm). The inhibitory effects showed by standard and different parts of *C.fistula* differed significantly ( $P < 0.05$ ). Qualitative phytochemical analysis revealed the presence of terpenoids, flavonoids, tannins and phenols were found in all the extracts and most of the phytochemicals were present in the methanolic extract of the bark than other extracts. The results revealed that antifungal activity of methanol extract of bark and stem of *C.fistula* may be useful to treat the infections caused by tested fungal strains. Petroleum ether extract of bark and stem showed no activity. Preliminary phytochemical analysis revealed that different parts of *C.fistula* contains different phytochemicals. Even though there is no correlation between antifungal activity and number of different phytochemical present in the extracts. However, further studies are required to isolate the active phytochemicals which were corresponding to the antifungal activity.

**Keywords:** *Cassia fistula*, antifungal activity, *Candida albicans*, *Aspergillus Niger*, secondary metabolites.