

## Studies on anticandidal action mode by *Cassia spectabilis*

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**C**andida albicans has become resistant to the commercially available, toxic and expensive anti-Candida agents in the market. These factors triggered the search for new anti-fungal agents deriving from natural resources also determining the action mode involved. The possible modes of action by *C. spectabilis* leaf extract were determined by potassium leakage study and the effect of the extract on the cell wall, enzymes and morphology of *C. albicans* studied with cytotoxicity assay. The cytotoxicity result showed that the extract is non-toxic with an  $IC_{50}$  value of 59.10 $\mu$ g/ml. In the potassium leakage study, the cells treated with the extract caused a potassium leakage of up to 1039 ppm that was comparable to Amphotericin B-treated cells which released up to 1115 ppm. The effects of the extract on the cell wall proteins showed that there were three major types of changes in the cell wall proteins expressed by the treated cells; the presence of a new protein, the absence of a protein and a difference in the amount of protein expressed. The activities of two enzymes; proteinase and glucosidase were determined but it was observed that the extract had caused significantly higher activities of both enzymes, thereby concluding that this was not the mode of action relating to the antifungal activity of *C. spectabilis*. The morphology of *C. albicans* cells treated with the *C. spectabilis* showed that the treated cells had abnormal morphology whereby the cells appeared damaged and detached from each other. In conclusion, this study demonstrated that *C. spectabilis* leaf extract as a good source of new anti-*C. albicans* compound(s) with various mode of actions.

### Biography

Vijayarathna Soundararajan has completed her MSc from University Science Malaysia and had published 6 papers in reputed journals. This project was funded by University Science Malaysia. Short Term Grants (304/CIPPM/639040).

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