Antimicrobial And Cytotoxic Activities Of Sterculia Parviflora
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INTRODUCTION

- Antimicrobial resistance nowadays has become a public health emergency according to the World Health Organization (WHO, 2013).
- There are also growing concerns of breast cancer which ranks as the third most frequent cancer and single most common female malignancy worldwide (Ibrahim et al., 2012).
- The lower cases of adverse reaction among plant extraction has revive the interest in herbal medications nowadays (Amirah et al., 2011).
- Hence, there is a need for study of local medicinal plants focusing on its antimicrobial and cytotoxic activity for new remedies.
- Sterculia parviflora (S. parviflora) is one of the species of family Sterculiaceae and is known in local Malay language as Kelumpang in Malaysia (Burkill et al., 1986).

OBJECTIVES

1) To evaluate the antimicrobial activity of S. parviflora’s leaves extracts against Gram-positive bacteria (Staphylococcus aureus and Bacillus cereus), Gram-negative bacteria (Escherichia coli and Pseudomonas aeruginosa) and fungi (Candida albicans and Aspergillus spp.).
2) To determine the cytotoxicity of S. parviflora’s leaves extracts on human breast adenocarcinoma cell line (MCF 7).

MATERIALS & METHODS

- Preparation of Inoculum
- Disc diffusion methods
- Minimum Inhibitory Concentration
- Minimum Bactericidal Concentration
- Statistical Analysis

RESULTS

Antimicrobial Activities

Table 1: Zone of inhibition resulting through disc diffusion screening by using disc concentrated with specific concentration of extracts

Cytotoxic Activities

Table 2: Minimum inhibitory concentration (MIC) and minimum bactericidal concentration (MBC) values

REFERENCES


CONCLUSION

This study found that the methanol and ethyl acetate extracts of S. parviflora’s leaves exhibited moderate antimicrobial activities against S. aureus and B. cereus. The lowest MIC and MBC value determined is 25 mg/mL and 50 mg/mL respectively both in methanol extract against S. aureus and B. cereus. In cytotoxicity study, the crude extracts of S. Parviflora was unable to possess any cytotoxic effect against breast cancer cell line MCF-7 at concentration range of 3.13 – 100 mg/mL for 24 hours as the range of viability cells percentage calculated is from 60.7% to 82.0% which is not considerably cytotoxic enough to inhibit MCF-7 breast cancer cell growth. Thus, it can be concluded that S. parviflora did exhibit antimicrobial activities against gram-positive bacteria which are S. aureus and B. cereus while unable to possess cytotoxic activities against MCF-7 cell line.

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