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In Vitro Growth-inhibitory Effect of Philippine Medicinal Plants traditionally Used to Cure Diarrhoea Against Intestinal Bacterial Pathogens

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Abstract

Infectious diarrhoea is a serious public health problem worldwide, mainly in developing countries, including Philippines. Diarrhoeal disease is the third leading cause of death worldwide with 2.2 million deaths mainly among children under 5 years of age. Plants used in traditional medicine for treatment of diarrhoea are tested for antimicrobial activity, because of increasing resistance of bacteria to antibiotics, and in countries of South East Asia such as Philippines antibiotics can be hard to reach or expensive for people from rural areas, where 80% of them is still dependent on indigenous medicine provided by locals healers or so.

In this study, 19 species were collected, air-dried and tested for their antimicrobial effects by broth microdilution method. Six of them showed positive results against up to 5 out of 8 tested representatives of pathogenic bacteria. *Artocarpus camansi* species showed the highest antibacterial effect against *Clostridium perfringens* (MIC = 128 g/mL) and *Clostridium difficile* (MIC = 128 g/mL). Significant anti-bacterial effects exhibited also *Artocarpus blancoi* against *Enterococcus faecalis* (MIC = 128 g/mL), *Acalypha grandis* against *Vibrio parahaemolyticus* (MIC = 256 g/mL), and *Diplazium esculentum* and *Picrasma javanica* produced growth-inhibitory action against *Escherichia coli* with MICs 256 and 512 g/mL, respectively. *Carmona retusa* possessed moderate effect against *Vibrio parahaemolyticus* (512 g/mL).

These results suggest above-mentioned species as perspective plant materials for development of pharmaceutical and food applications effective for treatment of diarrhoea. However, further research focused on identification of their antimicrobial principles and evaluation of their safety will be necessary. Next research of mine will be including those steps.

Keywords: Antibacterial, diarrhoea, extracts, medicinal plants, Philippines