

# ANTIBACTERIAL PROPERTIES OF SELECTED PLANTS CONSUMED BY PRIMATES AGAINST *ESCHERICHIA COLI* AND *BACILLUS SUBTILIS*

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**Abstract.** Bacterial antimicrobial resistance is a major health problem worldwide. Plants consumed by non-human primates are potentially safe for humans. In this study, we examined the potential antibacterial properties of plants consumed by non-human primates in Indonesia. We studied the antibacterial properties of the leaf extracts of 34 primate-consumed plants against *Escherichia coli* and *Bacillus subtilis* in vitro. The plants were collected from the Pangandaran Conservation Area, West Java Province, Indonesia. The leaves were dried and then powdered by crushing and the potential active ingredients were extracted with 95% ethanol at room temperature for 24 hours. The obtained solvent was then dried at 50°C under reduced pressure. The antibacterial properties of each product were then tested to determine the minimum inhibitory and minimum bactericidal concentrations using the broth microdilution technique and a disc diffusion test was also performed. The results show *Kleinhovia hospita*, *Dillenia excelsa* and *Garcinia celebica* had the best antibacterial properties against *Escherichia coli* and *Ficus benjamina*, *Ficus altissima*, and *Elaeocarpus glaber* had the best antibacterial properties against *Bacillus subtilis*. Some of the studied leaf extracts in our study have the potential to be developed into antibacterial medications and need to be studied further.

**Keywords:** medicinal plants, antibacteria, *Escherichia coli*, *Bacillus subtilis*

## INTRODUCTION

Bacterial antimicrobial resistance is a worldwide health problem, especially in developing countries where there is uncontrolled access to antibiotics (Ansari, 2001; Orrett, 2001; Chukwuani *et al*,

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2002; Hu *et al*, 2003; Pradipta *et al*, 2015). Antimicrobial resistance is mainly due to inappropriate, irrational, excessive or profligate use of antibiotics combined with poor patient compliance (Abdulah, 2012). The lack of a nationwide health insurance system may also play a significant role in the irrational use of antibiotics in Indonesia (Hidayat *et al*, 2004).

Solving this problem of inappropriate antimicrobial use is only part of the solution. It is also important to search for new antimicrobials (Livermore, 2011). In