

In Vitro Antibacterial Activity of *Psidium guajava* Linn. Leaf Extracts against Pathogenic Bacteria in Pigs

Sakolkit Puntawong¹, Siriporn Okonogi² and Kidsadagon Pringproa^{3*}

¹Department of Food Animal Clinic, Faculty of Veterinary Medicine, Chiang Mai University, Chiang Mai 50100, Thailand

²Department of Pharmaceutical Sciences, Faculty of Pharmacy, Chiang Mai University, Chiang Mai 50200, Thailand

³Department of Veterinary Biosciences and Veterinary Public Health, Faculty of Veterinary Medicine, Chiang Mai University, Chiang Mai 50100, Thailand

*Corresponding author. E-mail: kidsadagon@hotmail.com

ABSTRACT

Guava, Psidium guajava Linn., is an important medicinal plant in tropical and sub-tropical regions. Previous studies of the in vitro and in vivo antibacterial activities of Guava extracts have raised expectations for the potential of developing medicinal compounds for human use. In addition, with increased antibiotic-resistant bacteria and drug residues observed in pork, medicinal plants, such as guava, might serve as an alternative source of medicinal compounds for veterinary medicine. In the present study, crude extracts from the leaves of P. guajava were obtained using three different extraction methods. The extracts were tested for antibacterial activities against pathogenic bacteria in pigs, namely, Streptococcus suis, Pasteurella multocida, Escherichia coli and Salmonella typhimurium. The results showed that leaf extracts of P. guajava in water and methanol potentially inhibited growth of all tested bacteria, while extraction with acetone exhibited inhibition zones only in colonies of Streptococcus suis and Pasteurella multocida. The water and methanol extracts of guava leaves showed the same minimum inhibitory concentration (MIC) values against Pasteurella multocida (0.156 mg/ml), Escherichia coli (5 mg/ml) and Salmonella typhimurium (5 mg/ml), while the acetone extract showed the highest antibacterial activity against Streptococcus suis and Pasteurella multocida at a MIC of 0.312 mg/ml. In summary, this investigation provides preliminary information for using guava extracts to control bacterial diseases in pigs. Given this finding, the crude extracts of guava leaves show promise as an alternative antibacterial source for use in veterinary medicine.

Keywords: *Psidium guajava* Linn., Leaf extract, MIC, Antibacterial activity, Pig

INTRODUCTION

Many investigations have studied the use of plants as an alternative, and natural source of medicinal products for humans. Guava (*Psidium guajava* Linn.)