

Abstract

Acne, a common skin condition that occurs in approximately 9.4% of the world's population, can be caused by bacteria. The extensive use of antibiotics as acne treatment has pushed the development of antibiotic resistant bacteria. Natural compounds found in plants have been used as an alternative to prevent the development of antibiotic resistance. Different parts of *Diospyros digyna*, commonly known as black sapote, have been used empirically to alleviate various pains. The stem and leaves of black sapote have been known to exert antimicrobial activity against a couple of bacteria. This study aims to investigate the antimicrobial activity of n-hexane, ethanol, and water extracts of black sapote fruit against *Staphylococcus aureus* and *Staphylococcus epidermidis*. Ripe black sapote fruit was freeze dried and extracted using respective solvent by maceration. Phytochemical screening was done along with total phenolic and flavonoid content determination. Antimicrobial assay was conducted using a disk diffusion method with clindamycin as a positive control, 10% DMSO as the negative control, and various concentrations of the extracts (100, 75, 50, 25 mg/ml) prepared in 10% DMSO. The result showed antimicrobial activity from all extracts except for the water extract.

Keywords: *Diospyros digyna*, antimicrobial activity, *staphylococcus aureus*, *staphylococcus epidermidis*