Antimicrobial activities and phytochemical properties of Blumea balsamifera against pathogenic microorganisms

ABSTRACT

Medicinal plants have been widely used in healthcare based on traditional knowledge. We investigated the antimicrobial activities and phytochemical contents of a plant known as Blumea balsamifera (B. balsamifera), which Sabah native people have used for health benefits. Methanolic extracts and fractions of the leaves of B. balsamifera were tested for their phytochemical contents and their antimicrobial activities against four Gram-negative and five Gram-positive strains of bacteria. The extracts of B. balsamifera showed antimicrobial activities against three Gram-positive, and one Gram-negative bacteria, with the zone of inhibition ranging from 7.8 mm±0.41 to 10.5 mm±0.71. Fraction CE.F7 exerted the broadest antimicrobial activity towards four Gram-positive or Gram-negative bacteria. The phytochemical constituents identified in the extracts were alkaloid, flavonoid, steroid, and cardiac glycosides. The plant extract demonstrated antimicrobial activities and contained multiple phytochemical constituents. Further investigations into potential antimicrobial agents containing promising fractions would validate the medicinal properties of B. balsamifera used in Sabah.