

Potent antibacterial activity of halogenated metabolites from Malaysian red algae, *Laurencia majuscula* (Rhodomelaceae, Ceramiales)

Abstract

Red algae genus *Laurencia* (Rhodomelaceae, Ceramiales) are known to produce a wide range of chemically interesting secondary halogenated metabolites. This investigation delves upon extraction, isolation, structural elucidation and antibacterial activity of inherently available secondary metabolites of *Laurencia majuscula* Harvey collected from two locations in waters of Sabah, Malaysia. Two major halogenated compounds, identified as elatol (1) and iso-obtusol (2) were isolated. Structures of these compounds were determined from their spectroscopic data such as IR, ¹H-NMR, ¹³C-NMR and optical rotation. Antibacterial bioassay against human pathogenic bacteria was conducted using disc diffusion (Kirby–Bauer) method. Elatol (1) inhibited six species of bacteria, with significant antibacterial activities against *Staphylococcus epidermis*, *Klebsiella pneumonia* and *Salmonella* sp. while iso-obtusol (2) exhibited antibacterial activity against four bacterial species with significant activity against *K. pneumonia* and *Salmonella* sp. Elatol (1) showed equal and better antibacterial activity compared with tested commercial antibiotics while iso-obtusol (2) only equaled the potency of commercial antibiotics against *K. pneumonia* and *Salmonella* sp. Further tests conducted using dilution method showed both compounds as having bacteriostatic mode of action against the tested bacteria.