

ABSTRACT

The rapid emergence of resistance of *Staphylococcus aureus* towards most antibiotics including vancomycin has increased their mortality and morbidity vastly. Consequently, extensive researches have been directed towards the identification of a novel source of medicines with a distinct mode of action. Previous studies have reported the efficacy of numerous species of brown algae with antibacterial activity not only towards *Staphylococcus aureus* but also to methicillin-resistant *Staphylococcus aureus* (MRSA). Despite this fact, the antibacterial activity of brown algae is primarily affected by factors including species, geographical location, seasonality and extraction methods. The antibacterial activity of brown algae *Sargassum* species from Pari Island, Indonesia against *Staphylococcus aureus* was assessed. Several drying methods (sun-drying, oven-drying, freeze-drying and no drying), solvents (methanol, ethanol, N-Hexane, acetone and ethyl acetate) and extraction techniques in combination with assisting methods (sonication, agitation, boiling and blending) were incorporated. These techniques were performed with different combinations in order to identify the optimum condition for the pharmacological activities of brown algae. The antibiotic capabilities of brown algae were tested using disc-diffusion assay. The result showed that none of the samples produced antibiotic activity, indicating low or absence of antibacterial molecule. Based on other studies, the lack of bioactive compounds could be a result of epiphyte contamination or retrieval of brown algae before maturation.

Keywords: Resistance, Brown Algae, Antibacterial, Extraction, Seasonality