Detection the antibacterial effect of seaweeds on Staphylococcus aureus DNA repair gene (adaB) and cell wall protein synthesis (sav1017) by molecular approaches.

ABSTRACT

Polymerase Chain reaction amplification of DNA was performed to used to study the presence and effect of treated and untreated Stapylococcus aureus genes sav1017 and adaB with marine seaweeds Gracilaria changii and Euchema denticulatum. From the sequencing analysis, the changes were detected in the gene sequence of adaB and sav1017, genes after treated with either G. changii or E. denticulatum extract, which involved the substitution of the nucleotide base pair and insertion or deletion of the purine or pyrimidine base. The novel of this study is the extract of G. changii and E. denticulatum interrupting the important function in MRSA and non-MRSA isolates so that this pathogen cannot survive longer than usual. This significant finding can be applied to a medical treatment whereby both of these extracts can be used as an alternative treatment for the infection of S. aureus especially to overcome drug resistance treatment problems in MRSA strains.

Keyword: Polymerase chain reaction; Staphylococcus aureus; Seaweeds; Antimicrobial activities; Extraction; Malaysia.