Application of RT-PCR to detect treated and untreated Staphylococcus aureus genes with marine algae.

ABSTRACT

Methacillin Resistant Staphylococcus aureus (MRSA), Extended Spectrum Beta Lactamase (ESBL) organisms and Multiple Drug Resistant Organism (MDRO). Therefore, this study was designed to explore an alternative antibacterial product derived from seaweed extracts, Gracilaria changii and Euchema denticulatum, through the study of DNA and RNA encoding genes of interest in MRSA and non-MRSA. The target of this study is to amplification of several untreated and treated S. aureus and E. coli genes that are potentially involved in the antibacterial activities through RT-PCR assay. G. changii and E. denticulatum extracts showed inhibitory activity against S. aureus, several genes in this pathogen were chosen to study the effect of both seaweed extracts on the genes through PCR and RT-PCR analysis. However, the predicted inhibitory mechanism of both seaweeds extracts on mecA gene was not fully elucidated in the study. The investigation could scientifically proof the natural products to be potentially potent antibacterial agents.

Keyword: Reverse transcription-polymerase chain reaction; Staphylococcus aureus; Marine algae; Antimicrobial activities; Extraction; Sequencin; Malaysia