Identification of Salmonella typhi contamination by amplification fliC gene in grass-jelly from traditional markets and minimarket in Semarang city

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Grass-jelly is one of the most popular plants consumed by people in various forms. Contamination can cause various diseases, one of those is typhoid fever by Salmonella typhi. The purpose of this study was to detect S. typhi in grass-jelly based on molecular detection by amplification of the fliC gene using PCR. Validation was done by culture methods on SSA media and biochemical testing. The fliC gene amplification results in grass-jelly samples (A1, A2, B1, B2, C1, and C3) showed the DNA fragments size of about 1500 …

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Original Research

The potential of ethanol extract of white pomegranate leaves (Punica granatum L) as anti-bacterial

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HIGHLIGHTS

We were found that the extract of white pomegranate leaves was able to inhibit the growth of positive Gram bacteria strains MRSA and the extract was unable to inhibit the growth of Escherichia coli bacteria strain ESBL.

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Pomegranate leaf
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ABSTRACT

Treatment of infections using penicillin-derived antibiotics such as methicillin has been found to cause antibiotic-resistant bacteria. This bacteria could produce a beta-lactamase enzyme to form a resistant strain. Research on antibacterial activity continues to develop. Pomegranate (Punica granatum L.) was one of the herbal plants whose fruit has long been used for the treatment and prevention of various diseases. This study aimed to determine the potential inhibition of white pomegranate leaf extracts (Punica granatum L.) on the growth of Gram-negative bacteria including Escherichia coli Extended-Spectrum Beta-Lactamase (ESBL) strain and Gram-positive bacteria Staphylococcus aureus Methicillin-Resistant Staphylococcus aureus (MRSA) strain. White pomegranate leaf extract macerated with ethanol 96%, evaporated to obtain pure extracts made with a concentration of 10%, 20%, 30%, 40%, 50%, 60%, 70%, 80%, 90% and with 100% tested with invitro diffusion method. It was found that the extract of white pomegranate leaves with 30% (10.00 ± 0.0) concentration was able to inhibit the growth of positive Gram bacteria strains MRSA and the extract was unable to inhibit the growth of Escherichia coli bacteria strain ESBL.

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Original Research

Peripheral stem cell mobilization strategies in patients with autologous hematopoietic cell transplantation: A single center's experience

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HIGHLIGHTS

The white blood cell count was inversely correlated with the success of mobilization

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ABSTRACT

This research is to investigate the parameters which may affect the mobilization of stem cells in patients receiving autologous hematopoietic peripheral blood stem cell transplantation (PBSCT). A retrospective study was carried out using the data derived from the medical files of 242 patients who received PBSCT. Descriptive, clinical, and laboratory parameters were compared between patients with successful and unsuccessful stem cell mobilization. Successful stem cell mobilization ratio was 4.463 times higher when preemptive plerixafor was administrated; 1.032 times higher when CD34+ cell count increased 1 unit at the beginning of mobilization. The white blood cell count was inversely correlated with the success of mobilization. An increase of 1 unit in WBC count was associated with a 1.027 times decrease in the success rate. The data indicated that the administration of preemptive plerixafor and CD34+ cell count at the beginning of mobilization were directly related to the success of mobilization after PBSCT. On contrary, WBC count was inversely associated with the success rate.

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1. INTRODUCTION

High dose chemotherapy and bone marrow transplantation are common therapeutic modalities used in the management of hematological malignancies. An adequate number and