Abstract

Staphylococcus aureus, with its various types of antrotoxins, is one of the most common causes of food poisoning with symptoms of heart disease and vomiting. Some of them are found in the skin, skin glands, and mucous membranes, and they are fermented with products like cheese, milk, and meat. *Staphylococcus aureus* is one of four common and important factors in causing food poisoning. The purpose of this study was to identify stains produced by *Staphylococcus aureus* in bulk milk using three methods of polymerase chain reaction and ELISA and comparing methods with each other. Counting and isolating bacterial staph from raw milk samples with biochemical methods. Milk samples were taken from the shops of bulk milk distribution in Kerman city. These bacteria were first counted. Then, they were confirmed by using specific environments (Baird Parker Agar, Mannitol Salt Agar, and Blood Agar) and biochemical tests (warm, catalase, oxidase and coagulase tests). The bacterial DNA was directly extracted from milk specimens and then by polymerase chain reaction, the samples were examined for enterotoxins of sea, seb, sec and sed. Of the 100 milk samples tested, five genotypes of enterotoxin a and 2 gene were associated with enterotoxin b. Two specimens of these seven specimens were positive for biochemical and biochemical cultures. The genotype of antrotoxin c and d was not detected in any of the samples. Milk samples were analyzed by ELISA method and only one sample of all samples was positive for enterotoxins. This specimen was positive for biochemical and biochemical cultures. In this study, the direct identification of the enterotoxin-encoding gene by polymerase chain reaction method is an appropriate criterion for determining the production capacity of toxin by *Staphylococcus aureus*, and has a higher accuracy.

Keywords: *Staphylococcus aureu*s, enterotoxin, polymerase chain reaction, ELISA

Univercity of zabol
Graduate school
Faculty of Veterinary Medicine
Department of Health and Food Quality Control

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Detection of enterotoxin produced by *staphylococcus aureus* in milk using three methods ELISA, PCR and culture in kerman city

Supervisors:
Dr. M. Rahnama
Dr. L. Mansouri najand

Advisors:
Dr. M. Alipour eskandani
Dr. S. Salari

By:
R. Bahaadini beygi

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