

# Identification of *sea* and *seb* frequency in *Staphylococcus aureus* isolated from cow, sheep and goat mastitic milk samples in Sanandaj city

Ahmadi, E.<sup>1</sup>; Ghuzivandi, A.<sup>2</sup>; Ebrahim Pourbaser, K.<sup>2</sup> and Karimi Dareabi, H.<sup>1</sup>

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## Abstract

*Staphylococcus aureus* is one of the most important causes of food poisoning in human. The main etiological agent, staphylococcal enterotoxins (SEs) are in different types. Based on the plausible role of contaminated milk with enterotoxigenic strains of this bacterium in human food poisoning and the important role of SEA and SEB in bacterial intestinal pathogenesis, plus with the multiple role of SEB as a biological weapon on one hand, and the lack of any data on the role of milk and the two mentioned enterotoxins in public health threatening in Sanandaj on the other hand, this study was aimed to determine the prevalence of *sea* and *seb* genes, as the most clinically important enterotoxins in mastitic milk samples. 120 cow, 60 sheep, and 60 goat mastitic milk samples were collected under sterile conditions and analyzed for the presence of *S. aureus* by routine bacteriological methods. The isolates were confirmed by thermonuclease (*nuc*)-based PCR and were evaluated for detection of *sea* and *seb* genes using molecular technique. Totally, 23.33% (28 numbers) of cow milk, 31.66% (19 numbers) of sheep milk, and 21.66% (13 numbers) of goat milk samples were contaminated with *S. aureus*. Among the bovine originated *S. aureus*, 100% were found to harbor *sea* with no *seb*. *sea* was detected in 78.94% (15 numbers) and 23.07% (3 numbers) of *S. aureus* isolates with ovine and caprine origins, respectively, and *seb* was detected in 10.52% (2 numbers) and 30.78% of *S. aureus* with ovine and caprine origins, respectively. The high percentage of SE genes in *S. aureus* isolated from milk samples constitutes a potential risk for consumers' health. Therefore, improving the hygienic quality of milk is essential in the mentioned area.

**Key words:** *Staphylococcus aureus*, Enterotoxin, mastitic milk, Polymerase chain reaction (PCR)

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1- Assistant Professor, Department of Pathobiology, Faculty of Veterinary Medicine, Sanandaj Branch, Islamic Azad University, Sanandaj, Iran

2- DVM Graduated from Faculty of Veterinary Medicine, Sanandaj Branch, Islamic Azad University, Sanandaj, Iran

**Corresponding Author:** Ahmadi, E., E-mail: elham.ahmadi.vet@gmail.com

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