Accessory Gene Regulator (agr) Typing of Staphylococcus aureus Isolates Recovered From the Nasal Cavity of Healthy Ruminants in Iran

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Background & Objectives: *Staphylococcus aureus* can colonize the nasal mucosa of different animals. The accessory gene regulator (agr) is a quorum sensing cluster of genes which control colonization and virulence in S. aureus.

Methods: In the current study, 26 S. aureus nasal isolates from cattle (n = 4), sheep (n = 11), and goats (n = 11) were agr typed by multiplex polymerase chain reaction (PCR).

Results: Of 4 *S. aureus* isolates obtained from cattle, 3 were ascribed to agr type I and 1 to agr type IV. A total of 7 out of 11 sheep nasal isolates were of agr type I, the other 4 being agr type III (n=3) and agr type II (n=1). Goat nasal isolates were distributed mainly across agr types I (n=10). Only one of the goat isolates was agr type II.

Conclusion: As results, *S. aureus* isolates with agr type I were common and might be capable of colonizing the nasal cavity of ruminants, most likely by regulatory adaptation to the nose environment. Further studies will be necessary to define how the type of agr regulatory system might affect nasal colonization in ruminants.

Keywords: Agr Specificity Group; *Staphylococcus aureus*; Ruminants; Multiplex PCR