

TITLE: MAJOR FACILITATOR SUPERFAMILY (MFS), A FAMILY OF MULTIDRUG EFFLUX SYSTEM, IN *Staphylococcus aureus* ISOLATED FROM MASTITIS OF DAIRY GOATS

AUTHORS: LIMA, M. C.; PENA, J. L.; CASTRO, L.K.; GUIMARÃES, S.H.S.; BARROS, M.; MOREIRA, M. A. S.

INSTITUTION: LABORATORY OF BACTERIAL DISEASES (LDBAC), PREVENTIVE VETERINARY MEDICINE AND PUBLIC HEALTH SECTOR, VETERINARY DEPARTMENT; UNIVERSIDADE FEDERAL DE VIÇOSA, VIÇOSA, MG (AV. PH ROLFS, S/N, CAMPUS UNIVERSITÁRIO, CEP 36570-900, VIÇOSA – MG, BRAZIL)

ABSTRAT:

Multidrug Efflux System in bacteria represents a great relevance mechanism of resistance to antimicrobials, due to its ability to export a wide range of structurally independent antibiotics from the cell, which results in a reduction of intracellular concentration and in decrease of susceptibility. *Staphylococcus aureus* is the pathogen most prevalent in caprine mastitis and may cause clinical or subclinical mastitis. The Major Facilitator Superfamily (MFS) is the most important family of multidrug efflux system in *S. aureus*. The aim of this work was to detect the Major Facilitator Superfamily (MFS) in *S. aureus* isolated from goats with subclinical and clinical mastitis. The polymerase chain reaction (PCR) technique was used to detect six genes: *norA*, *norB*, *norC*, *tet 38*, *Imrs* and *mgrA* (regulatory gene). Twelve isolated which presented a multiresistance profile were used: eight from clinical mastitis and four from subclinical mastitis. Detected genes in the isolated from clinical mastitis were: *norA* (37.5%; 3/8), *ImrS* (25%; 2/8), *tet 38* (100%; 8/8) and *norC* (100%; 8/8). In the isolated from subclinical mastitis were detected the following genes: *norA* (25%; 1/4), *norC* (50%; 2/4) and *tet 38* (100%; 4/4). The *norB* and *mgrA* genes were not detected in any isolated either from clinical or subclinical mastitis. The *mgrA* gene regulates negatively the *tet 38* gene and positively the *norC* gene, thus, the default of the *mgrA* gene suggests the activity of the *tet 38* gene and the inactivity of the *norC* gene. The presence of MFS genes could be contributing to the failures of mastitis treatment in herds. The detection of multidrugs efflux systems could also be performed to aid in the establishment of treatments, besides the antibiogram and determination of minimum inhibitory concentration.

Keywords: Goats; Gram positive bacteria; Intramammary infection; Multiresistance

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