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Antimicrobial resistance of staphylococci isolated from bovine mastitis in Argentina

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Bovine mastitis causes important economic losses in the dairy industry. *Staphylococcus aureus* and coagulase-negative staphylococci (CNS) are commonly isolated from bovine mastitis. β -lactams and macrolides-lincosamides (ML) antibiotics are frequently used in intramammary therapy. CNS can be considered reservoir of antimicrobial resistance genes. The gene *blaZ* confer resistance to some β -lactam antimicrobials whereas the *mecA* and *mecC* genes confer resistance to all β -lactams. The genes *ermA*, *ermB*, *ermC*, *mefA*, *msrA*, *mphC* and *lnuA* confer resistance to ML antimicrobials. *S. aureus* resistance to β -lactams in Argentina is 23.1%. Among 80 *S. aureus* isolates, 32 (40%) were positive to *blaZ* gene and 15 (18.75%) were carriers of ML resistant genes: *ermB* and *mefA* (n=4), *ermB* (n=2) *mefA* (n=2), *ermB*, *ermC* and *mefA* (n=1), *ermA*, *ermB*, *ermC* and *mefA* (n=1), *ermB*, *mefA*, *lnuA* and *msrA* (n=1), *ermC*, *ermB* and *lnuA* (n=1) and *ermA* (n=1). Among 90 CNS isolates, 12 (13.3%), 4 (4.4%), and 1 (1.1%) were positive for *blaZ*, *mecA* and *mecC* genes, respectively. Both *blaZ* and *mecA* genes were only found in one isolate whereas 6 (6.7%) isolates were resistant to ML antimicrobials via the following genes: *ermC* (n=1), *ermB* and *ermC* (n=2), *ermB*, *ermC* and *mphC* (n=1), *mphC* (n=1), and *mphC* and *msrA* (n=1). The recently described *mecC* gene has been detected by PCR in a few CNS of animal origin only around Europe. We describe here for the first time a *mecC* positive isolate of CNS from bovine mastitis in Argentina. Identification of mastitis pathogens is important for selecting appropriate antimicrobial therapy. Reservoirs of antimicrobial resistance genes are potential threat to public health.

Biography

Srednik Mariela Elizabeth is currently pursuing her PhD at the University of Buenos Aires (UBA). She is a Veterinarian and has completed her Specialization in Quality and Food Control and her Master's in Biotechnology at UBA. She is also an Assistant Teacher in Microbiology at the Faculty of Veterinary Sciences at UBA. She did several Internships at Université de Montreal, Canada. She has published 3 papers, one in a national journal and two in reputed international journals. She had submitted 2 more manuscripts in collaboration with the Université de Montréal.

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