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Antibiotic susceptibility and molecular identification of antibiotic resistance genes of staphylococci isolated from bovine mastitis in centre region of Algeria

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The study was carried out to investigate the phenotypic and genotypic identification of *in vitro* antimicrobial susceptibility of 21 Staphylococci (10 *Staphylococcus aureus* and 11 Coagulase Negative Staphylococci) isolated from bovine mastitis to 12 antimicrobial drugs frequently using in veterinary medicine in Algeria. Isolates of staphylococci from bovine mastitis were tested for antibiotics with disc-diffusion method according to the National Committee for Clinical Laboratory Standards guidelines in the Mueller-Hinton agar and resistant genes *mecA*, *blaZ*, *aac-aph*, *ermA*, *ermC*, *tetK* and *tetM* were detected by PCR. Staphylococci isolates showed high resistance to penicillin (95.23%), oxacillin (80.95%), clindamycine (80.95%) and erythromycin (76.19%) but no resistance of all these strains was detected for gentamicin. Among 21 isolates of Staphylococci, 20 were found to be methicillin and multidrug resistant. Multidrug resistant strains exhibited several antibiogram patterns (antibiotic I to XIII). The distribution of antibiotic-resistant genes was *mecA* (100%), *tetM* (100) followed by *blaZ* (42.85%). In the present work, the significant determination was the high prevalence of methicillin-resistant Staphylococci, which were resistant to multiple antibiotics. The finding of methicillin-resistant staphylococci (MRS) from bovine mastitis is the first report in Algeria and revealed the status of resistant isolates in herd that might be helpful in treatment, controlling of resistant strains and for deciding culling of cows.

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Pancreatic adenocarcinoma up-regulated factor (PAUF) in the saliva of Bali cattle (*Bos javanicus*): A biomarker candidate for infections

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The aim of this study was to explore the potential of a peptide, pancreatic adenocarcinoma up-regulated factor (PAUF) expressed in the saliva of Bali cattle (*Bos javanicus*), which was first reported by Depamede (2013), as a biomarker for infections. For this purpose, a polyclonal antibody against PAUF peptide was produced using a synthetic PAUF peptide. This was synthesized from the PAUF amino acid sequence as the results of MALDI-TOF/TOFMS and bioinformatics analysis of the Bali cattle saliva. Antibodies obtained were used to analyze for the presence of PAUF in Bali cattle (*Bos javanicus*) saliva as well as in the saliva of the New Zealand dairy cows (*Bos taurus*). The results showed that PAUF is present at greater abundance in Bali cattle saliva compared to that of *Bos taurus*. Interestingly, PAUF was found in the milk of infected New Zealand cows (*Bos taurus*), suggesting that it could also be a marker for mastitis. These results provide a novel potential breed and disease biomarker that could help in better management of Indonesian cattle. These findings still need to be further investigated for their utility as biomarkers as well as the role they play in physiology of the immune response in Bali and New Zealand cattle.

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