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Detection of plasmid mediated antimicribial resistance genes in *Pasteurella multocida* isolated from chicken.

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Summary

Pasteurella multocida is the etiologic agent of fowl cholera, a highly contagious and fatal disease of chickens. In this study, a total of 300 chickens (200 diseased and 100 apparently healthy birds) were examined for determining the prevalence of *P. multocida* among involved chickens. Isolation of *P. multocida* was attempted from the spleen, lung, trachea and bone marrow collected from diseased and healthy chickens. The identity of *P. multocida* was confirmed by mouse pathogenicity test and PCR. Based on cultural and morphological, biochemical and molecular characteristics, a total of 11 isolates of *P. multocida* were recovered with an incidence of 3.6%. Capsular typing using multiplex PCR demonstrated that all isolates belong to capsular type A. All isolates were analyzed for their susceptibility to 18 antibiotics and the presence of 4 antimicrobial resistance genes (*tet*H, *aphA*-1, $bla_{\text{ROB-1}}$ and *erm*X). The susceptibility profiles revealed that all isolates were completely resistant to gentamicin, ampicillin, erythromycin and trimethoprim /sulphamethoxazole, tobramycin, colisitin, penicillin, cefotaxime, chloramphenicol, and doxycycline. PCR results of antimicrobial resistance genes revealed that *tet*H gene was the predominant one in all isolates (100%), followed by *aphA*-1 gene (٧٢.7%) and $bla_{\text{ROB-1}}$ (1٨.١٨%), while all isolates were negative for *erm*X gene. Therefore, the present study indicates that PM-PCR and capsular PCR are efficient tools for rapid diagnosis and serogrouping of *P.multocida* especially in epidemiological studies. Continuous monitoring of antimicrobial resistance is required to apply effective control measures.