

**Analysis of ciprofloxacin-resistant Salmonella strains from swine;chicken and their carcasses in Taiwan and detection of parC resistance mutations by a mismatch amplification mutation assay-PCR**

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摘要

**Abstract**

One hundred thirty-three Salmonella strains isolated from the viscera of swine, chicken, and carcasses of swine and chicken in Taiwan from 2004 to 2006 were identified to serotype level and analyzed for their susceptibility to ciprofloxacin. In total, 76 (57%) strains of the Salmonella isolates exhibited high-level resistance to ciprofloxacin, having MICs ranging from 16 to 64 microg/ml. DNA sequence analysis revealed that mutations in the quinolone resistance-determining regions of gyrA (Ser83Phe, Asp87Gly or Asp87Asn), parC (Ser80Arg, or Ser80Ile or Glu84Lys), and parE (Ser458Pro) genes were associated with the Salmonella strains that demonstrated resistance to ciprofloxacin. A mismatch amplification mutation assay (MAMA)-PCR was developed to identify mutations in parC at codons 80 and 84. Specific PCR products were only recovered from ciprofloxacin-resistant Salmonella strains but not from the susceptible strains. MAMA-PCR targeting the mutations in parC correlated with what DNA sequencing revealed. In conclusion, monitoring ciprofloxacin-resistant Salmonella from animal sources should be performed on a regular basis. MAMA-PCR targeting parC could provide a fast method for those laboratories interested in quickly characterizing the resistance profile and with little access to DNA sequencing facilities.