The occurrence, antimicrobial resistance and proteomic analysis of the *Escherichia coli* and *Salmonella* sp. isolated from silky fowl meat in Taiwan

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5 Outline

- 6 1. Introduction
- 7 2. The occurrence of *Escherichia coli* and *Salmonella* sp. isolated from Silkie
- 8 Chicken

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- 9 3. Antibiotic resistance results of chicken isolates strain
- 4. Proteomic analysis of drug-resistant strains
- 11 5. Conclusion

12 Abstract

Poultry is a major food in human life, and the antibiotics have been used for a long time in the process, it may cause antimicrobial resistance microorganisms be transmitted to the human through the food chain, causing medical burden. Therefore, the purpose of this study was to investigate the occurrence and antibiotic resistance of Escherichia coli and Salmonella isolated from silky chickens. Then, using proteomic analysis to evaluate the resistance related proteins of these resistant strains in the presence of antibiotics. Collected 60 samples were in three sample types including frozen meat, fresh meat and organs samples. The E. coli and Salmonella isolates, were confirmed using PCR method based on strain-specific genes and using API biochemical identification kit, at last using O antiserum to serogroup Salmonella. After the identification, the isolated strains were tested for antimicrobial susceptibility and the strains with high resistance to ciprofloxacin (CIP) were selected for proteomic analysis. Results showed that out of 60 samples, 26 E. coli (43%) and 10 Salmonella (17%) were isolated and identified. Salmonella isolates were grouped into B serogroup (50%), followed by A serogroup (30%), while 2 strains were not classified. Among the three sample types, fresh samples had the highest occurrence, followed by organs samples, and frozen samples. In the drug susceptibility results, E. coli and Salmonella isolates showed more than 90% resistance sulfamethoxazole-trimethoprim, ampicillin, streptomycin, trimethoprim, tetracycline, sulfisoxazole, doxycycline, florfenicol and chloramphenicol, whereas lower resistance to nalidixic acid and CIP, and no resistance to meropenem. 96% of E. coli and all Salmonella isolates were MDR strains. High CIP resistant strains will be selected for proteomic analysis. According to current results, total of 1377 proteins were identified in the resistant E. coli, indicating that under the pressure of CIP, the strain would upregulate the pathway of DNA replication and mismatch repair, the metabolic pathways would be downregulated. In conclusion, this study analyzed the occurrence of microorganisms in silky chickens, their drug resistance status and their high MDR.