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The prevalence of integrons in *Salmonella enterica* Isolated from humam and animals in Taiwan

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Salmonella is a common zoontic pathogen which can be transmitted between humans to animals. However, as other bacterial pathogens, antibiotic resistance to *Salmonella* is an increasing problem for eradicating infection. Antimicrobial resistance genes may be spread on mobile genetic elements such as plasmids, transposons and integrons. Recently, integrons are considered obtaining and spreading antibiotic-resistance genes between bacteria species. Many antibiotic-resistance genes are located in gene cassettes and integrons can organized them by inserting in or moving out genes, which causes a wide variety of drug resistant patterns amount bacteria. In order to investigate the prevalence of integrons carrying in different *Salmonella* strains isolated from humans and animals in Taiwan, we analyzed 499 isolates (8 of *S.* 4,[5],12:i:-, 19 of *S.* Newport, 20 of *S.* Albany, 205 of *S.* Cholerasiuis, 17 of *S.* Heron, 11 of *S.* Bredeney, 8 of *S.* Treforest, 191 of *S.* Typhimurium and 20 of *S.* Entreitidis). The presence of integrons and gene cassettes was screened by PCR. And the gene cassettes carried in the integrons were analyzed by nucleotide sequencing. 100% of *S.* 4,[5],12:i:-, 63% of *S.* Newport, 100% of *S.* Albany, 79% of *S.* Cholerasiuis, 53% of *S.* Heron, 55% of *S.* Bredeney, 75% of *S.* Treforest, 97% of *S.* Typhimurium and 45% of *S.* Entreitidis isolates carried integrons. eight types of gene cassettes (type A1, A2, A3, B, C, D, E1, and E2 were observed by agarose gel electrophoresis analysis. The cassette type D, carrying both bla_{P1} and *aad*A2 gene that causes ampicillin and streptomycin resistance, was the most commonly found gene cassette (42.2%, 152/360) in the integron-positive *Salmonella* isolates. Type A1 cassette (*dfr12-orfF-aadA2*), most commonly found in *S.* Choleraesuis, could be identified in 40.3% (145/360) of the integron-positive *Salmonella* isolates. This study showed the more consideration needs to be taken during antibiotic treatments in infections caused by different *Salmonella* serovars.

Keywords：*Salmonella*, integron, gene cassettes