

Karun Cheepnurat 2009: Study on Antimicrobial Resistance of *Salmonella enterica* serovar 1, 4, [5], 12: i: - Isolated in Thailand. Master of Science (Veterinary Microbiology), Major Field: Veterinary Microbiology, Department of Microbiology and Immunology. Thesis Advisor: Associate Professor Patamaporn Amavisit, Ph.D. 84 pages.

The purpose of this research was to study on antimicrobial resistance of *Salmonella enterica* serovar 1, 4, [5], 12: i: - in Thailand. Seventy nine isolates were derived from the patients of the hospital center of the Ministry of Public Health during January to September 2006 and ten isolates from swine farm collected in March 2004. These isolates were examined serovar and phage type by duplex polymerase chain reaction in order to find out the relation with *S. Typhimurium* phage type DT104 that is the virulent strain and resistant to several antimicrobials. Samples were tested for minimum inhibitory concentration (MIC) using micro dilution plate test and examined for extended-spectrum beta-lactamases by double disk test.

The result was found that all isolates were positive to serovar Typhimurium by using the PCR assay. Seventy one isolates from humans and 10 isolates from pig farm showed positive to phage type DT104. For the MICs determination, all isolates were sensitive to ciprofloxacin. The isolates from human were resistant to trimethoprim-sulfamethoxazole (81.01%), ampicillin (75.95%), cefoperazone (74.68%), gentamicin (63.29%), nalidixic acid (54.43%) and chloramphenicol (41.77%). The antimicrobial resistance pattern mostly found was AMP-CFP-GEN-NAL-SXT (22.47%). Those isolates from pig farm were resistance to ampicillin (100%), cefoperazone (100%), chloramphenicol (90%), gentamicin (100%), nalidixic acid (100%) and trimethoprim-sulfamethoxazole (100%), whereas, the most common antimicrobial resistance pattern was AMP-CFP-CHL-GEN-NAL-SXT (90%). Furthermore, three human isolates produced ESBLs enzyme which would have an effect on the treatment of infectious disease with cephalosporins.

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Thesis Advisor's signature