Sixty eight Campylobacter jejuni were isolated from retail market-chicken in Nakhon Pathom province. They were determined for genotyping by plasmid profiles and ERIC-PCR. Using plasmid profiles method, the isolates were categorized into 12 patterns. The plasmid ranged in size from 2.3 to 56 kb, and plasmid number in each isolate varied from 0 to 4. Whereas ERIC-PCR method was divided these isolates into 20 groups (A to T). Each group consisted of different number isolates of C. jejuni. Both ERIC-PCR and plasmid profiles demonstrated that there were genotypic diversity among the isolates. Moreover, combinations of these methods increase the efficiency of identifying the type of C. jejuni.

All C. jejuni isolates were determined for resistance to quinolone and other antimicrobial agents by broth microdilution method. Sixty eight C. jejuni strains were resistant to quinolone drugs including nalidixic acid (69.12%), norfloxacin (69.12%), ciprofloxacin (58.82%) and marbofloxacin (25.00%). High proportions of the isolates were resistant to tetracycline (77.94%), sulfamethoxazole (72.06%), kanamycin (51.47%), ampicillin 47.06% and streptomycin (42.65%). Low proportions of the isolates were found resistance to gentamycin (16.18%) and erythromycin (13.23%). Nearly 97% of the isolates were resistant to more than 4 antimicrobial agents.

The mechanism quinolone resistance is mainly due to the presence of mutations in the DNA gyrase. The Thr-86-Ile substitution in gyrA protein was observed in the isolates that were resistant to ciprofloxacin and nalidixic acid (MIC ≥ 8-16 and MIC >16-128 µg/ml, respectively). Silent mutation was also found at His-81-His. However, C. jejuni lack parC gene, so topoisomerase IV did not involve quinolone resistance of C. jejuni.

According to this study, genes of resistant to tetracycline and kanamycin in C. jejuni isolate encoded on plasmid. The plasmid size that harbored kanamycin was 36 kb, while tetracycline resistance was found in plasmid size 36 kb, 42 kb and 56 kb. However, genes of resistance to these agents were also found on chromosome.