



### Survey on Sulfonamide resistance gene (*sulI*) in *Escherichia coli* isolates from broilers in Urmia

Mojaverrostami S<sup>1</sup>, Mohammadi V<sup>2</sup>, Ghaniei A<sup>2</sup>, Sepehrnia P<sup>1\*</sup>

<sup>1</sup>Faculty of Veterinary Medicine, University of Urmia, Urmia, Iran

<sup>2</sup>Department of Clinical Science, Faculty of Veterinary Medicine, University of Urmia, Urmia, Iran

Corresponding author's email: pdotsepehrnia@gmail.com

**Objectives:** Colibacillosis is one of the most important diseases in poultry industry that causes vast economic losses, and it is also dangerous in terms of public health. Antibiotic treatment is the most important tool in dealing with the disease. Antimicrobial susceptibility of isolates must be determined before choosing an antibiotic drug. This study conducted to evaluate sulfonamide resistance phenotype and genotype of *E. coli* isolates.

**Material and methods:** In this study 44 strains of *Escherichia coli* were isolated from total of 30 broiler chicken flocks of Urmia city and Its sensitivity to five antibiotics disk, including Enrofloxacin, Sulfadiazine, Florfenicol, Neomycin, Oxytetracycline were assessed. Polymerase chain reactions were used to identify *SulI* genes.

**Results and conclusion:** Antibiogram test results showed that 20 isolates were resistant to sulfadiazine as sulfonamide antibiotics. The Resistance rate for each antibiotic was for Sulfadiazine 45.5%, Enrofloxacin 6.8%, Oxytetracycline 79.5%, Florfenicol 13.7% Neomycin 0%. In this study *SulI* gene were detected in 25 isolates from total 44 isolates of *Escherichia coli*. The results showed that 5 isolates that have had the *SulI* gene does not show antibiotic resistance in antibiogram test. This could indicate a difference in sensitivity of these two tests or lack of proper conditions for the gene expression in these five isolates. The results showed that the resistance rate of isolates to sulfonamides was high and antibiotic resistance in these two tests, polymerase chain reaction and antibiogram, can be varied.

**Keywords:** Antimicrobial resistance, *Escherichia coli*, sulfonamide.

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### Survey on Tetracycline resistance gene (*tetA*) in *Escherichia coli* isolates from broilers in Urmia

Sepehrnia P<sup>1\*</sup>, Ghaniei A<sup>2</sup>, Mohammadi V<sup>2</sup>, Mojaverrostami S<sup>1</sup>

<sup>1</sup>Faculty of Veterinary Medicine, University of Urmia, Urmia, Iran

<sup>2</sup>Department of Clinical Science, Faculty of Veterinary Medicine, University of Urmia, Urmia, Iran

Corresponding author's email: pdotsepehrnia@gmail.com

**Objectives:** Colibacillosis is one of the most important diseases in poultry from the economic point of view, and it is also dangerous in terms of public health. Antibiotic treatment is the most important matter in dealing with the treatment and control of this disease. Checking the antibiotic resistance status both in genotype and phenotype before choosing an antibiotic drug in the region is essential. This study conducted to evaluate tetracycline resistance phenotype and genotype of *E. coli* isolates.

**Material and methods:** In this study 44 strains of *Escherichia coli* were isolated from broiler chickens of Urmia city and their sensitivity to five antibiotics disk, including Enrofloxacin, Sulfadiazine, Florfenicol, Neomycin, Oxytetracycline were assessed. Polymerase chain reactions were used to identify *tetA* genes.

**Results and conclusion:** Antibiogram test results showed that 35 isolates were resistant to Oxytetracycline as Tetracycline antibiotics. The Resistance rate for each antibiotic was for Sulfadiazine 45.5%, Enrofloxacin 6.8%, Oxytetracycline 79.5%, Florfenicol 13.7% and Neomycin 0%. In this study *tetA* gene were detected in 21 isolates from total 44 isolates of *Escherichia coli*. The results showed that 14 isolates were shown resistance in antibiogram test but didn't have *tetA* gene. This result could indicate the potential effect of other Tetracycline resistance genes that caused resistance and showed in antibiogram test. The results showed that the resistance rate of isolates to Tetracycline was high. Tetracycline resistance gene (*tetA*) is widely distributed in *E. coli* isolates of the region and is the main resistance mechanism to tetracycline.

**Key words:** Antimicrobial resistance, *Escherichia coli*, tetracycline.