

ANTIMICROBIAL RESISTANCE AND STEC VIRULENCE GENES OF *ESCHERICHIA COLI* ISOLATED FROM NON-DIARRHEIC AND DIARRHEIC DOGS AT A VETERINARY TEACHING HOSPITAL IN THAILAND

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Abstract. A major public health concern is transmission of pathogenic *Escherichia coli* from animals to humans. The study determine Shiga toxin-producing (STEC) virulence genes and antimicrobial resistance (AMR) of *E. coli* isolated from pet dogs. *E. coli* samples were isolated from rectal swabs of non-diarrheic ($n = 67$) and diarrheic ($n = 19$) dogs at a veterinary teaching hospital in Thailand and examined for their AMR profiles, genes encoding extended-spectrum β -lactamase (ESBL) and major STEC virulence genes *eaeA*, *hlyA*, *stx1*, and *stx2*. From non-diarrheic dogs 4% of the isolates carried *eaeA* and 1% both *hlyA* and *stx2*, while from diarrheic dogs 5% carried *eaeA*. Percent resistance of the isolates from non-diarrheic dogs to ampicillin, piperacillin and tetracycline was 45%, 37% and 37%, respectively and 47%, 47% and 42%, respectively from diarrheic dogs. No significant differences in proportions of STEC and AMR genes were detected between *E. coli* isolates from the two dog groups. The study shows pet dogs, irrespective of whether they are diarrheic or healthy, can act as reservoirs of STEC as well as ESBL- and CMY-2-producing *E. coli*, which could be transmitted to owners. Thus, even if companion animals show no sign of infection, it is imperative pet owners take precautions to avoid the spread of pathogenic *E. coli* and other fecal pathogens carried by their dogs.

Keywords: *Escherichia coli*, antimicrobial resistance, ESBL gene, pet dog, Shiga toxin-producing gene, Thailand

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