

NOVEL CONTRIBUTIONS OF THE DISSERTATION

1. Provides additional epidemiological, clinical, and paraclinical data on urinary tract infections in febrile children in the North Central region of Vietnam, contributing practical evidence for early recognition and diagnosis.
2. Clarifies the microbiological etiology and antimicrobial resistance characteristics of *Escherichia coli* causing urinary tract infections in children, providing further evidence to support appropriate local antibiotic selection.
3. Applies whole-genome sequencing to characterize the antimicrobial resistance gene profile and temporal changes in resistance genes among *E. coli* causing pediatric urinary tract infections, with an observed increase in several important resistance genes such as *blaNDM-5*.
4. Identifies a novel resistance gene, ILR-VIN, which may open a new avenue for understanding the mechanisms of carbapenem resistance in *E. coli*, particularly in the context of the increasing emergence of strains resistant to antibiotics such as imipenem.