

## Molecular Biomonitoring of Bacterial Pathogens in Wastewater

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**Abstract :** This work was conducted to develop a one-step multiplex PCR system for rapid, sensitive, and specific detection of three different bacterial pathogens, *Escherichia coli*, *Pseudomonas aeruginosa*, and *Salmonella* spp, directly in wastewater without prior isolation on selective media. As a molecular confirmatory test after isolation of the pathogens by classical microbiological methods, PCR-RFLP of their amplified 16S rDNA genes was performed. It was observed that the developed protocols have significance impact in the ability to detect sensitively, rapidly and specifically the three pathogens directly in water within short-time, represents a considerable advancement over more time-consuming and less-sensitive methods for identification and characterization of these kinds of pathogens.

**Keywords :** multiplex PCR, bacterial pathogens, *Escherichia coli*, *Pseudomonas aeruginosa*, *Salmonella* spp.

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