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Development of multiple antibiotic resistances as a result of heavy metal driven co-selection in Hasdeo river water collected from different location of Champa and Korba districtRajshree Singh and Shweta Sao
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Resistance of antibiotics towards multiple antibiotics represents a challenge to maintaining public health in the current scenario and has tremendously increases nowadays. It was observed that the fecal and domestic waste from livestock facilities, animal husbandry and healthcare, where antibiotics were routinely used, recognized as a significant source of water pollution and multiple antibiotic resistance bacteria. In the present study bacterial species were isolated from different locations of Hasdeo River in Korba and Champa region, among them most heavy metal tolerant species were identified as *Pseudomonas* sp. and *Bacillus* sp. which showed positive correlation between heavy metals tolerance (Cd, Cu, Zn, Fe and Pb) and multiple antibiotics resistance. MAR study (used to identify the possible source of fecal pollution of river water) results suggest that Sarvamangla Nagar was found to be the most polluted among all the sample collection area with MAR index of 0.2 suggested that it was most polluted by the fecal pollutant and domestic and waste from healthcare. The study also reveal that the pattern of antibiotics resistance of bacterial isolates were influenced by selective pressure caused by the heavy metals pollutant leads to the mutation in genetic makeup of metal resistance bacterial isolates to allowed them better survival, it was assumed that genes related to heavy metal resistance and antibiotics were located on same plasmid and thus more likely to transferred together in bacterial genome.

Biography

Rajshree Singh has completed her PhD from Dr. C. V. Raman University, Kota, Bilaspur, Chhattisgarh, India and currently working as an Assistant Professor at Shri Agrasen Girls College, India since two years. She has published 2 international papers, two national papers and one book chapter.

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