

Investigation of the potential of microbial population of active sludge in urban treatment plant in bioavailability of famotidine

Azadeh farazdel*,Fatan Divsar,

Introduction: Nowadays, receiving water, such as lakes and rivers, is used as a place for the disposal of sewage and wastewater. Among the pollutants entering the receiving waters through the disposal of effluents and sewage are chemical compounds, especially medications and hospital effluent. Drug contaminants are one of the acute issues of today's life: many researchers, especially in advanced countries, have reported the presence of these pollutants even in drinking water, and their negative effects on the environment and human health have been pointed out. Today, as microbiology and biotechnology are known to increase awareness of microorganisms, the use of microbes as a strategy is to remove contaminants in water, especially drugs. This study was conducted to isolate and identify famotidine removal bacteria active sludge in Rasht city water treatment plant. **Method:** In this study, active sludge samples were used to isolate the decomposing bacteria. A total of 12 isolates were inoculated using saline base with famotidine, and based on the formation of a no-growth inhibition zone around the colony caused by removal or use. The isolates of famotidine in the medium or growth were isolated. All isolates were identified by gender and species using the Manual for the Identification of Bacterial Bacteria (2006). Also, in order to calculate the efficiency and efficiency of removing the activated sludge microbial consortium, the drug was inoculated with 0.5, 10, 20, and 30 ppm ratios into active sludge tubes, **Result and discussion:** Results showed that only 12 isolates of bacteria were able to decompose famotidine in a qualitative assortment of 30 isolated samples. In this equation, during 24 to 48 hours, the highest biodegradation at 10 ppm concentration and maximum ppm degradation 20, and the lower the pH was, the higher the degradation rate and the higher the removal efficiency. According to the results obtained in this study, drugs in different

industries (such as famotidine) can be purified using the biological treatment process as an economical and environmentally friendly option. **Keywords: Removing famotidine, active sludge, bioavailable bacteria, famotidine**

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