## عنوان مقاله:

Acute and Synergistic Toxicity of Drugs in Water by Luminescent Bacteria Assay

## محل انتشار:

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## خلاصه مقاله:

The acute toxicity in water of a series of drugs, including antibiotics, antihistamines, antifungals, steroidal and non-steroidal anti-inflammatories, was evaluated through the measurement of bioluminescence from the bacterium Vibrio fischeri. The drugs were spiked in water at concentration in the range ۱.۰-۵۰.۰ g/mL, distributed over six concentration levels, and their toxicity evaluated in terms of response rate calculated along ۳۰ min of incubation. The test was also applied to real river samples previously assayed by HPLC method. The parameters LOEC (lowest observable effect concentration) and EC۵۰ (half effective concentration) were calculated. Chlortetracycline, promethazine, betamethasone, ketoconazole and econazole were found to be very toxic. Diclofenac and ketoprofen showed toxicity only at the highest concentrations tested. Clindamycin, neomycin and oxatomide induced a decrease in bioluminescence but below the toxicity limits. In contrast, erythromycin and diphenhydramine showed an increase of bioluminescence, known as hormesis. The toxicity was amplified in samples containing drug mixtures, demonstrating additive or synergistic activity.

## کلمات کلیدی:

Drug toxicity, Water Pollution, Risk Assessment, Synergistic effect, Luminescent bacteria test