

Physiological Responses of the Ciliated Protozoa *Tetrahymena pyriformis* to Toxic Compounds

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The essential role of protozoan community in aerobic wastewater treatment is well-known and documented [1,2]. On the other hand, it is recognized that changes in this community may affect the whole food web of these systems, thus affecting the biological performance of the plants. The sensitiveness of protozoa to environmental changes have, therefore, enhanced their potentiality as biological indicators of water quality [3].

The aim of the present study is to emphasize the indicator value of ciliated protozoa, by assessing physiological responses of *Tetrahymena pyriformis* after exposition to four toxics: copper, zinc, the antibiotic ciclohexamide and the neutral surfactant Triton X-100.

Tetrahymena pyriformis can be cultured in axenic conditions, *i.e.*, free from bacteria or other organisms, in a defined medium. Physiological responses were assessed *in vitro*, in a series of miniaturized assays in 24 and 96 well culture dishes, at 20±1°C. Physiological condition of *Tetrahymena pyriformis* was assessed in assays of MTT (metabolic activity), ATP (energetic demand) and cytoskeleton morphology (structural changes). These miniaturized assays are low cost and low time consuming, which may be relevant in monitoring programs.

Diferential responses to the toxic compounds encourage further research in order to find whether a certain pattern of physiological responses will allow, in the future, to identify the toxic or group of toxics involved.

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