

# **The Application of Cholinesterase Potentiometric Biosensor for Preliminary Screening of the Toxicity of Waste Waters**

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## **Abstract**

The application of cholinesterase biosensor for preliminary testing of total pollution of domestic and industrial discharges has been investigated. The results indicate that biosensor-based testing is more sensitive than paramecia bioassay. For numerous samples tested, the inhibition degree of biosensor response exceeds the appropriate value of acute toxicity on *Paramecium caudatum*. Electrochemical oxidation of the samples, before the biosensor testing readily removes oxidizable compounds which do not effect a real risk of environmental pollution. Simultaneous determination of inhibitory effect, acute toxicity and biochemical (chemical) oxygen demand makes it possible to infer a possible source of contamination of waters.

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## **Keywords**

Biosensor, Cholinesterase, Enzyme electrode, Inhibition, Toxicity