

Biosensors for the determination of environmental inhibitors of enzymes

Evtugyn G., Budnikov H., Nikolskaya E.

Kazan Federal University, 420008, Kremlevskaya 18, Kazan, Russia

Abstract

Characteristic features of functioning and practical application of enzyme-based biosensors for the determination of environmental pollutants as enzyme inhibitors are considered with special emphasis on the influence of the methods used for the measurement of the rates of enzymic reactions, of enzyme immobilisation procedure and of the composition of the reaction medium on the analytical characteristics of inhibitor assays. The published data on the development of biosensors for detecting pesticides and heavy metals are surveyed. Special attention is given to the use of cholinesterase-based biosensors in environmental and analytical monitoring. The approaches to the estimation of kinetic parameters of inhibition are reviewed and the factors determining the selectivity and sensitivity of inhibitor assays in environmental objects are analysed. The bibliography includes 195 references.

<http://dx.doi.org/10.1070/RC1999v068n12ABEH000525>
