Short Review

Electrochemical Biosensors based on Acetylcholinesterase and Butyrylcholinesterase. A Review

Miroslav Pohanka

Faculty of Military Health Sciences, University of Defense, Trebesska 1575, Hradec Kralove, Czech Republic; Department of Geology and Pedology, Mendel University in Brno, Czech Republic
E-mail: miroslav.pohanka@gmail.com

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Two cholinesterases are known: acetylcholinesterase (AChE) and butyrylcholinesterase (BChE). The both enzymes are presented in the body under physiological conditions and the both enzymes have broad use in pharmacology, toxicology and analyses. In the current paper, construction of electrochemical biosensors, a specific phenomenon in analytical chemistry, is reviewed. Development of voltammetric and potentiometric methods using standard electrodes, nanostructured materials, micro and nanoparticles is described here commonly with depicting of reaction principles and selection of substrates for the cholinesterases. Survey of actual literature is also provided within the article and disparate analytes used for the biosensors testing are introduced.

Keywords: Acetylcholinesterase; biosensor; butyrylcholinesterase; conductometry; nerve agent; pesticide; potentiometry; voltammetry

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