

ACETYLCHOLINESTERASE IMOBILIZATION FOR CONSTRUCTION OF BIOSENSOR CAPABLE OF DETECT THE NERVOUS AGENT SARIN OR SIMILAR: A SYSTEMATIC REVISION OF META-ANALYSES.

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The chemical war when compared with the biological wars and nuclear it is probably one of the most brutal. The chemical weapons utilized are considerate as massive destruction weapons relatively cheap and easy to a product. They are synthetic agents highly toxic, capable of been scattered as liquid, gas, aerosol or powder as the strategies adopted in the attacks. Their effects are lethal or disabling for the human beans. It stands out between the chemical weapons of mass destruction, the sarin gas an organophosphate compound, extremely easy of been evaporated (25C) and highly toxic that induces a quick depression of breathing, convulsions, and death in five minutes after being inhaled. It acts inhibiting the cholinesterases (ChE's), enzymes from the nervous system that control impulses as the transmission of nervous stimulus. Exist numerous methods for detection of synthesized compounds based in organophosphates (Sarin, Soman, Tabun, VX), that include methods chromatographic, as the gaseous chromatography coupled a spectrometry of mass (CG-MS), high-performance liquid chromatography (HPLC), colorimetric methods, electrochemical, by fluorescence and electrophoresis. Beyond the cited methods, the electrochemical is shown as the alternative techniques complementary for the development of cheaper detection devices (biosensors of ChE's), construction relative simple, low energy consumes consumption, great sensibility, selectivity, and portability. This search has the objective of map 52 scientific articles published in national and international periods, starting from the electronic data collection as the Portal Periódicos CAPES and electronic magazines as the Chemical & Engineering News and Nature. Was chosen 28 articles for posteriorly being analyzed with the meta-analysis concepts. After the analysis was concluded that often articles searched, three of them were about the immobilization of Acetylcholinesterases (AChE's) and Butyrylcholinesterase (BuChE's) in the mesoporous silica matrix and the others seven used different matrices. When the other matrices used for immobilization of AChE's and BuChE's were analyzed they were associated with the construction of biosensors capable of detect the nervous agent Sarin or similar, was observed diversity of results, each article explored a specific matrix, although, none of them described the construction of biosensors associated a mesoporous silica matrix immobilized with AChE's and BuChe's.

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