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MEETING ABSTRACTS

IN VITRO EVALUATION OF BODIPY LABELED BISQUATERNARY AMONIUM SALTS USED AS REACTIVATORS OF INHIBITED ACETYLCHOLINESTERASE

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Oxime reactivators are causal antidotes commonly used against organophosphate (OP) poisoning. Although OPs are utilized in agriculture as pesticides, they can be misused by terroristic groups as nerve agents (NA). These compounds are fast acting inhibitors of human acetylcholinesterase (AChE) causing cholinergic crisis ultimately leading to death by respiratory failure. Treatment of OP intoxication consists of immediate administration of symptomatic drugs, namely, atropine and diazepam and antidotes in form of oxime reactivators of AChE. Undoubtedly commercially used reactivators are the best countermeasure for OP intoxications so far, however they have several downsides. First of all, there is no broad-spectrum reactivator effective against all NAs, secondly they cannot reactivate "aged" form of AChE and lastly they poorly cross the blood-brain barrier (BBB) due to low lipophilicity (1). For instance, widely used reactivator 2-PAM crosses the BBB approximately from only 10% (2). However, most of the techniques used for measuring the concentration of reactivator crossing BBB are relying on HPLC combined with MS or UV detector. BODIPY probe could be great alternative as it is a strongly fluorescing probe standardly used for imaging techniques *in vitro* (3). The aim of this work is *in vitro* evaluation and analysis of physicochemical properties of BODIPY labeled oxime reactivators of AChE.

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Keywords: oximes; reactivators; BODIPY; acetylcholinesterase; blood-brain barrier

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