

Summary

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Nine potential bisquaternary reactivators of AChE have been prepared and their reactivation activity against paraoxon or tabun-inhibited enzyme has been tested *in vitro*. Three reactivators of AChE proved to be suitable for further testing against paraoxon. One of these compounds also demonstrated satisfactory efficiency when reacting against tabun. The reactivation abilities of prepared compounds depend on structural factors such as the presence of oxime group, its location, the presence of quaternary nitrogen and other functional groups. Also four monoquaternary inhibitors have been prepared and their inhibitive activity tested *in vitro*.