

Antioxidant properties of the alkaloid boldine in systems undergoing lipid peroxidation and enzyme inactivation

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Boldine, in low micromolar concentrations, was able to prevent brain homogenate autooxidation, the 2,2'-azobis(2-amidinopropane)(AAP)-induced lipid peroxidation of red cell plasma membranes, and the AAP-induced inactivation of lysozyme. These results are indicative of a high reactivity of boldine towards free radicals. The analysis of the boldine effect as a function of incubation times suggests that a metabolite resulting from the interaction of boldine with free radicals also exhibits antioxidant activity, being more efficient than boldine in brain homogenate auto-oxidation and less efficient in lysozyme protection experiments. This behavior may be accounted for in terms of the relative location of the scavengers needed to afford maximal protection. © 1991.