

Antioxidative Properties of Pyrrolidinium and Piperidinium Salts

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Two series of pyrrolidinium (PYA-*n*) and piperidinium (PPPA-*n*) bromides with incorporated antioxidant function were synthesized. Both have hydrocarbon chains with odd number of the carbon atoms (*n*) ranging between 7 and 15. Pig erythrocytes (RBC) were used to study antioxidant activity of these compounds. They were incorporated into RBC membranes in sublytic (micromolar) concentrations and RBC were then subjected to UV radiation. It was found that all the salts used protected erythrocyte membranes against oxidation of membrane lipids. This protection increased with hydrocarbon chain length. Such effect may be the result of an incorporation of particular compounds to different depths into the lipid phase of RBC membrane depending on their chain length. Such possibility was checked by studies on fluidity changes induced by the compounds studied in ghost membranes by fluorimetric measurements.

The measurements showed that pyrrolidinium bromides were slightly more effective in a protection of erythrocytes than the corresponding piperidinium ones. The possible reason of such behaviour may be the difference in lipophilicity between piperidine and pyrrolidine rings.