



Decrease in 2,2,6,6-tetramethyl-piperidine-1-oxyl (TEMPO) EPR signal in ozone-treated erythrocyte membranes.

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Streszczenie

In ozone-treated erythrocyte membrane suspension a slow decrease occurs in the EPR signal of 2,2,6,6-tetramethyl-piperidine-1-oxyl (TEMPO). Because of the absence of such a phenomenon in control membranes and ozonized buffer, this effect must be caused by reaction of nitroxide radicals with products of ozone reactions with membrane components. To find out which components are responsible for the decrease in EPR signal we studied this effect in simple model systems. The same phenomenon was observed both in lipid and protein systems treated by ozone. For unsaturated fatty acids, the correlation between the rate of decrease in EPR signal and the number of double bonds in the lipid molecule was very strong. This suggests that the observed decrease in the nitroxide radical TEMPO EPR signal in ozone-treated erythrocyte membranes is a complex process, but probably the most important reaction is recombination of nitroxide radicals with organic free radicals produced both in the process of lipid peroxidation and ozonolysis of double bonds.

Adres publiczny

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