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The influence of lipid composition and **b** -carotene on lipid peroxidation in liposomes

"Mohammad N. Sarbolouki, Pegah Maghdooni Bagheri, Vahid Saneei "

Abstract:

Oxidative damage to membrane lipid is one of the prime events occurring in aging and other undesirable physiological processes. In this study experiments were performed on liposomes (prepared either from crude erythrocyte phospholipids or purified egg yolk phosphatidylcholine) as models of lipid bilayer portion of biomembranes. The effects of **b** -carotene, and phospholipid composition on peroxidation process, initiated by Fe²⁺, were studied. It was found that **b** -carotene does not show any noticeable antioxidant effect on the peroxidation process initiated by Fe²⁺ in liposomes prepared from erythrocyte phosphatides, whereas it effectively suppressed the same process in egg yolk phosphatidylcholine (EYPC). It is concluded that the anti-/pro-oxidant activity of **b** – carotene is also dependent on the membrane lipid composition and this may provide an explanation about the conflicting reports on its role in ordinary or promoted oxidation experiments.

Keywords:

b -carotene . Liposomes . Erythrocyte phospholipids . Iron-induced peroxidation . Egg yolk phospholipids

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