Current Topics in Biophysics (Zagadnienia Biofizyki Współczesnej) vol. 24 (1), 2000, 61-64

Influence of blood plasma lipoproteins before and after PUVA-exposition on production of reactive oxygen species by human neutrophils *in vitro*

Andrzej Bugaj, Hanna Billert, Stanisław Dyderski, Jolanta Rozmiarek, Dorota Mielcarek

The influence of LDL and HDL blood plasma lipoproteins before and after 3 hrs PUVA-exposition, on production of reactive oxygen species (ROS) by human neutrophils stimulated by opsonized zymosan, was studied. A measure of ROS production by neutrophils was the intensity of luminol-enhanced chemiluminescence which method was applied for the determination of ROS level. This research revealed that non-exposed LDL and HDL lipoproteins at concentration 2.0 mg x L^{-1} decrease production of neutrophils *in vitro* with reference of neutrophils non-treated by lipoproteins. In the presence of PUVA-exposed LDL, a significant decrease of ROS production vs. non-exposed LDL effect was observed, while HDL after 3 hrs PUVA-exposition showed no effect on this production. This result was explained by lipoprotein lipids activity, both their antioxidative properties and capability of ROS producing stimulation, which modulate by lipid photodegradation during PUVA-exposition.