

PHOTODYNAMIC ACTIVITY OF LIPOSSOMAL ZINC PHYTHALOCYANINE  
(ZnPc) AGAINST CHICKEN RED BLOOD CELLS: EFFECTS OF PRE-  
INCUBATION AND IRRADIATION TIMES.

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In a previous work we showed that chicken red blood cells (CRBC) are much more susceptible to cellular photo-damage by photo-irradiation, using fixed times for pre-incubation and irradiation of suspensions of cells with liposomal ZnPc, than sheep red blood cells (SRBC). In the present work, using an incoherent light of 600 nm with a water-filter to remove infra-red radiation, our results demonstrated that CRBC suffers photo-damage with release of hemoglobin and potassium ions at lower times of pre-incubation when compared with SRBC and human red blood cells (HRBC). In our protocol procedure a time of 5 minutes of pre-incubation, and an irradiation time of 5 minutes, was enough to promoted CRBC photo-damaged at superior levels found for a suspension of CRBC in water (control 100% of hemolysis). The maximum effects of photo-damage in CRBC were reached with times of pre-incubation and irradiation 3 times lower than the values obtained for SRBC and HRBC. These results indicated that nucleated cells are good models for photodynamic studies of sensitizers and posses a susceptibility to photo-damage superior than non-nucleated cells, probably indicating a different cellular mechanism for programmed cell death after oxidative stress, or different antioxidant defense systems between non-nucleated cells.