

**Photoinduced delayed luminescence from yeast and melanoma ascitic cells. Part I:
Excitation with different actinic light**

Ali Ezzahir, Krzysztof Ścieszka, Zenon Rajfur, Paulina Wolańska, Janusz Sławiński

Photoinduced delayed weak luminescence ($10^3 - 10^6 \text{ } h\nu \text{ s}^{-1} \cdot \text{cm}^{-2}$) in the spectral region 400-800 nm from two distinctly different cell cultures was measured using the single photon counting method. Yeast cells *Saccharomyces cerevisiae* suspended in 0.8% NaCl and *Fortner melanoma* cells cultures in PBS were irradiated from 1-15 s. Both polychromatic white light as well as quasichromatic one induced delayed luminescence. The most effective (actinic) appeared to be short wavelength light of $\lambda < 450 \text{ nm}$. The intensity of delayed luminescence was always higher for dead (thermally inactivated) cells than for live ones. Using chemiluminescent probes (Luminol) it was shown that H_2O_2 are produced in the illuminated cell cultures. Different kinetics $I_{DL}=f(t)$ were observed for yeast cells incubated in dark and light: in the former case transient was clearly visible. These results suggest that photoinduced delayed luminescence is a general phenomenon characteristic of both plant and animal cells.