ABSTRACT

The targets of the diploma thesis presented here were to establish the antitumour efficacy of a new liposomal product with hydroxy-aluminium phthalocyanine (PC) in photodynamic therapy (PDT) of malignant tumours and determine the optimum time interval between the topical application of the product and PDT (tumour exposure to light). Effects were examined of the PC concentration on the PDT efficacy in a colon carcinoma cell line (SW-620), mammary carcinoma cell line (MDA-MB-231) and human neuroblastoma cell line (UKF NB-3). Hydroxy-aluminium phthalocyanine was employed as a photosensitizer. Outbred athymic female nude CD-1 mice already bearing the above mentioned xenotransplanted tumours were used in the experiments. The area comprising the tumour was exposed to light from a xenon lamp (600-700 nm, 80 J/cm^2). The results were statistically evaluated, summarized in tables and plotted in graphs. In the diploma work, the liposomal product containing phthalocyanine (9-18 mg/ml) was shown to have considerable antitumour effects in the types of tumours chosen. The optimum time interval for the PDT is of 10 min after the product topical application.

Key words: *photodynamic therapy; hydroxy-aluminium phthalocyanine; liposomal drug delivery*