DEVELOPMENT OF RIBOFLAVIN/CYCLODEXTRIN COMPLEX FOR TREATMENT OF PROSTATE CANCER

de Jesus, M.B., Queiroz, K.C.S., Zambuzzi, W.F., Ferreira, C.V., de Paula, E

Departamento de Bioquímica, Instituto de Biologia,
Universidade de Estadual de Campinas, Campinas, Brazil
e-mail: **bispo@unicamp.br**

Prostate cancer is a major cause of cancer-related death among males. Although recent years have seen an improvement in prostate cancer diagnosis, only a few novel therapeutic strategies have emerged and there has been little progress in improving survival. Therefore, novel adjuvant strategies are urgently being called for. Hence, riboflavin appears as a promising antitumoral agent, since we have previously demonstrated the antileukemic action of this irradiated compound. The aim of this work was to evaluate the effect of irradiated riboflavin on prostate cancer cells (PC3) and to obtain a riboflavin/cyclodextrin inclusion complex in order to improve the solubility of this vitamin photoproducts. PC3 cells were treated with irradiated riboflavin for 24h and the cells viability was assessed by measuring nucleic acid content. Irradiated riboflavin presented an expressive toxic effect on PC3 cells (IC50 = 20µM). Remarkably, treated cells presented inhibition of protein kinase B, an important mediator of prostate cancer cell survival. The interaction between riboflavin and cyclodextrin was evaluated by photometric and fluorimetric analysis. The stoichiometry of the inclusion complex was examined by applying the continuous variation method (Job plot). Interestingly, cyclodextrin did not affect the obtainment of riboflavin photoproducts. Altogether, our results pointed out riboflavin as a promising candidate for adjuvant therapy of prostate cancer.