

P14 EVALUATION OF REDOX STATUS OF HCT-116 CELL LINE TREATED WITH VARIOUS LICHEN AND PLANT EXTRACTS

Žižić J¹, Ćurčić M¹, Đačić D¹, Obradović A¹, Stanković M¹, Mitrović T², Kosanić M¹, Ranković B¹, Marković S¹

¹Department of Biology and Ecology, Faculty of Science, University of Kragujevac, Kragujevac, ²Faculty of Natural Sciences and Mathematics, University of Niš, Niš, Serbia

Aim of this study was to compare various lichen and plant extracts effect on prooxidant/antioxidant status in HCT-116 cells. The HCT-116 cell line was treated with 50 µM, 250 µM and 500 µM concentrations of various lichen and plant extracts for 24 h and 72 h. We compared level of nitrites (NO₂⁻) and superoxide anion radical (O₂⁻) production in HCT-116 cell line treated with various doses of lichen extracts and different exposure time. Results showed that all concentrations of lichen and plant extract induces significantly lower levels of nitrites compared to control, both for 24 hours and 72 hours and that treatment of HCT-116 cells with various lichen extracts for 24 hours induces significantly higher nitrites production compared to 72 hour treatment. Plant extract induced higher levels of superoxide anion radical, except plant extract *T. chamedrys* which do not show change in superoxide anion radical levels, after treatment for 24 h. After 72 h of treatment only plant extract *T. montanum* show higher superoxide anion radical production when compared to control. Treatment of HCT-116 cells with various plant extracts for 24 hours induces significantly higher superoxide anion radical production compared to 72 hour treatment. Lichen extracts induced higher levels of superoxide anion radical, except lichen extract *Lecanora muralis* and 10 in 50 µM concentration, after 24 h. After 72 h of treatment only lichen extracts *Parmeliopsis ambigua*, *Lecanora muralis* and *Parmelia saxatilis* in 500 µM concentration show higher superoxide anion radical production. Treatment of HCT-116 cells with various plant extracts for 24 hours induces significantly lower superoxide anion radical production compared to 72 hour treatment. We can conclude that plant extracts can act as antioxidants as indicated by lower levels of nitrites and lower superoxide anion production after 72 h of treatment. Lichen extracts, on the other hand can act like antioxidants regarding lower nitrite levels, but can also act as prooxidants since they induce higher anion radical production after 72 h of treatment.