EXPERIMENTAL STUDIES OF POSSIBLE MODULATIVE EFFECT OF β-GLUCAN ON MICE LUNG CARCINOGENESIS

Danguolė Zabulytė[1], Irena Jonauskienė[1], Saulė Uleckienė[2], Dalia Akramienė[3], Paulius Matusevičius[4], Janina Didžiapetrienė[2]
[1]*State Research Institute Center for Innovative Medicine, Department of Immunology Molėtų plentas 29, LT-08409 Vilnius, Lithuania*
[2]*Institute of Oncology, Vilnius University, Santariškių 1, LT-08660 Vilnius, Lithuania*
[3]*Lithuanian University of Health Sciences, Medical Academy, Mickevičiaus 9, LT-44307 Kaunas, Lithuania*
[4]*Lithuanian University of Health Sciences, Veterinary Academy, Tilžės 18, LT-47181 Kaunas, Lithuania*

Abstract. β-glucans are naturally occurring polysaccharides that are found in baker`s yeast, oats, barley fibre as well as medicinal mushrooms. Literary data show that they produce various biological effects (immune modulating, anticarcinogenic, lipid and body weight lowering). In the present study, the possible modulative effect of β-glucan (from yeast) on lung carcinogenesis was evaluated. We used 224 BALB/c mice both sexes divided into 6 groups. During the experimental period, the animals were treated with aqueous solutions of β-glucan, with a dry weight of 100, or 500 μg/ml, respectively (solutions were offered to mice *ad libitum*). Lung tumours were induced by organotropically acting urethane (given by intraperitoneal injections 10 mg/mouse, twice a week, total dose 50 mg/mouse). After 4 months, all mice were killed by cervical dislocation. Lungs were examined macroscopically and microscopically. The results of our study showed that β-glucan from yeast did not significantly inhibit lung adenamogenesis induced by urethane. Considering the known beneficial effects of β-glucans in other assay systems, future efforts should direct at performing experiments to verify the actual efficacy of β-glucans or β-glucans containing compounds on chemically induced carcinogenesis.

Keywords: β-glucan, urethane, lung carcinogenesis, mice.