IMMUNOMODULATIVE EFFECT OF RICH SELENIUM MUSHROOM POLYSACCHARIDES ISOLATED FROM SUBMERGED CULTIVATED MYCELIUM

[1]SANDRA GÓRSKA, [2]JADWIGA TURŁO

[1,2]Medical Univeristy of Warsaw, Faculty of Pharmacy, Department of Drug Technology and Pharmaceutial Biotechnology, Banacha 1 Street 02-097 Warsaw POLAND

Fungal polysaccharides are compounds with a diverse structure, variable functionality and varied biological activity. They are active as antioxidants, they have activity anticancer, immunomodulatory, antibacterial and antiviral. In Japan, in the top ten most frequently used drugs with anticancer remains is leninan - - licensed antitumor drug. Lentinan is a highly purity fraction polysaccharides, isolated from fruiting bodies of Lentinula edodes, demonstrating a high level of immunomodulatory activity. Antitumor activity has also selenium. The mechanism by which selenium exerts anticancer and immunomodulatory activity differs from fungal polysaccharide fractions (β –glucans), but a similar pharmacological effects suggests a possible synergism of these two agents. Selenium added to the medium may enhance the immunomodulatory effect of polysaccharides from the medium culture. The aim of this study was to cultivation of the cultures mycelium of medicinal fungus in sodium selenite-enriched medium. In the next step was the isolation and fractionation of Se-containing exopolysaccharides and exopolysaccharides without selenium atoms (reference fraction) from the culture medium. The composition of the medium enriched with selenium compounds was optimized. Mycelium cultures were performed in a 10 liters bioreactor in medium enriched with 30 ppm of sodium selenate, under agreed conditions. Se-exopolysaccharide fractions was containing embedded selenium were isolated in the molecule from the culture medium of mushroom. Conduced a process of purification of exopolysaccharide fraction isolated from a culture medium enriched and not enriched with selenium compounds. Research on obtaining exo-polysaccharides from medicinal mushrrom cultures may contribute to a new type of drug with selective immunosuppressive activity.

Keywords - β-glucans, Immunomodulation, Medicinal Mushrooms, Selenium