Conclusion

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The elucidation of the structure as well as some biological activities and antioxidant properties of different polysaccharides, isolated from edible mushrooms *Termitomyces clypeatus* (R. Heim), *Tuber rufum* (Pico) var. and *Lentinus sajor-caju* are carried out. Mushrooms consist of biologically active polysaccharide present in fruit bodies.The activity of mushroom polysaccharide may depend on their structural properties, such as polymer length, degree of branching, tertiary structure, and molecular weight. The exact structure of the polysaccharides is determined using Chemical method (total acid hydrolysis, methylation, periodate oxidation, and smith degradation studies) and spectroscopic method (1D and 2D NMR). Different biological studies were also carried out with different polysaccharide fractions. Lipid peroxidation, determination of reduced glutathione (GSH), oxidized glutathione level (GSSG), NO production, and ROS generation was carried out in human lymphocytes. The antioxidant activity of polysaccharide was evaluated through the chelating ability of ferrous ions, reducing power, 1,1-diphenyl-2-picrylhydrazyl (DPPH) radical, hydroxyl radical, ABTS radical, and superoxide radical scavenging activity.

The polysaccharides from different edible mushrooms show antioxidant properties and biological activities. Thus, they would be considered as a source of natural antioxidant and immunostimulant on the basis of further research. If edible mushrooms are present in our normal diet, effects of mushrooms on (intestinal) immune responses are of potential interest for optimizing the functioning of our immune system.