

## BIOLOGICAL ACTIVITY OF EXTRACTS FROM THE MYCELIUM OF MEDICINAL MUSHROOM *INONOTUS RHEADES*

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### ABSTRACT

The search for bioactive natural compounds potentially having antitumor activity - important problem of modern science. We have previously demonstrated high *in vitro* antiradical activity of water ethanol extracts (WEE) from the mycelium of *Inonotus rheades*. In the present study we evaluated the effect of 30% and 70% of WEE from mycelium *I. rheades* on the cell culture of human tumor cells HEP-2. 50% cell death is achieved after 24-h incubation in 53 µg/ml 70% WEE (dry weight), whereas 30% WEE at 550 µg/ml only, i.e. an order of magnitude difference between the concentrations, which indicates that high cytotoxic activity was shown WEE a radical change in the qualitative composition of extractives with increasing ethanol concentration. Incubation of cells with 250 mM H<sub>2</sub>O<sub>2</sub> resulted in approximately 40% cell death, whereas pre-incubation with both 30% and 70% of WEE resulted in 100% survival of cells in a large range of concentrations. This indicates a WEE protective effect under oxidative stress. Thus, WEE of the mycelium *I. rheades* in high concentrations exhibit cytotoxic activity. At the same time, a wide range of concentrations extracts can neutralize the oxidative stress and cell death caused by the addition of H<sub>2</sub>O<sub>2</sub>.

**Key words:** antioxidant activity, cytotoxic activity, *Inonotus rheades*, mycelium