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## CYTOTOXIC ACTIVITY OF *LEPISTA PERSONATA* (FR.) COOKE MUSHROOM WITH CHEMICAL INGREDIENTS

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Cancer is the most common disease currently worldwide. The most diagnosed cancer in the world is female breast cancer (11.7%), lung (11.4%), colorectal (10.0%), prostate (7.3%), and stomach (5.6%) cancers [1]. The use of natural products might have a preventive effect against cancer cells. Mushrooms are rich in biologically active compounds that play important roles against cancer diseases. Extracts of some types of edible mushrooms have shown activity against breast cancer cells [2], colon cancer [3], and prostate cancer cells. The studies indicate that mushrooms have potential compounds that may be used against cancer.

*Lepista personata* is an edible mushroom that belongs to the *Tricholomataceae* family, and is used for medicinal purposes. Firstly, extracts of petroleum ether, acetone and methanol, as well as hot water extracts were prepared from *Lepista personata* collected from Almaty, Kazakhstan. Herein, the cytotoxic activity of the apolar extract of *Lepista personata* against lung (H1299), breast (MCF-7), prostate (LNCaP), and colon (Caco-2) cancer cell lines and kidney (HEK293) healthy cell lines were studied. Then, the chemical ingredients of the bioactive extract were elucidated using GC-MS after silylated with pyridine and Bis(trimethylsilyl)trifluoroacetamide. In the conducted studies, the petroleum ether extract of *Lepista personata* exhibited significant cytotoxic activity against Caco-2 (EC<sub>50</sub>: 198.77 µg/ml), Lncap (EC<sub>50</sub>: 152.06 µg/ml), and MCF-7 (EC<sub>50</sub>: 98.37 µg/ml). GC-MS analyses revealed that the apolar extract contains mostly fatty acids. The fractionation also afforded that the apolar extract contains steroidal compounds having cytotoxic activity. According to the literature, the steroid's cytotoxic activity increases in the polyunsaturated fatty acids media [4,5]. It can be concluded that the steroidal compounds, which are minor ingredients of the extract, are responsible for the cytotoxic activity and the polyunsaturated fatty acids triggered the cytotoxic activity.

**KEYWORDS:** *Lepista personata*, cytotoxic activity, colon (Caco-2) cancer cells, prostate (Lncap) cancer cells, human breast (MCF-7) cancer cells, lung (H1299) cancer cells, kidney (HEK293) healthy cell line.

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