



ANTIPROLIFERATIVE ACTIVITY OF AQUEOUS-ETHANOL EXTRACTS OF *LENZITES BETULINUS* AND *TRAMETES VERSICOLOR* AGAINST BREAST CARCINOMA CELLS

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Relevance. Malignant tumors remain one of the leading causes of mortality worldwide, with breast carcinoma ranking first in incidence among women. Despite the development of modern therapeutic approaches, drug resistance and pronounced side effects of cytostatic drugs necessitate the search for new selective agents with antiproliferative activity. A promising direction is the study of biologically active compounds from natural sources, among which polypore fungi are of particular interest due to their richness in polysaccharides and triterpenoids with pronounced immunostimulatory and cytotoxic properties. In particular, the relatively unexplored yet widely distributed species *Lenzites betulinus* and *Trametes versicolor* are potential sources of new anticancer agents.

Aim of the study: To investigate the antiproliferative activity of aqueous-ethanol extracts of *L. betulinus* and *T. versicolor* against breast carcinoma ZR-75 cells.

Materials and methods: Extracts were obtained by maceration of fungal material in 70% ethanol. Human cell cultures were used in the experiment: Bj-hTERT (normal fibroblasts) and ZR-75 (breast carcinoma). Doxorubicin (20 µM) served as the reference drug. A 1% stock solution of the studied extracts was prepared in phosphate-buffered saline (pH 7.4) with 1% DMSO, followed by filtration through a 0.25 µm filter. Cell viability was assessed using the MTT assay.

Results: At low concentrations (1:20), the extracts exhibited the highest selectivity: the *L. betulinus* extract inhibited ZR-75 cell growth by 63.9±7.1%, while the effect on normal Bj-hTERT fibroblasts was significantly lower (18.6±20.4%, p<0.05). For *T. versicolor*, inhibition of ZR-75 cells reached 69.0±3.2%, while only 30.7±13.9% inhibition was observed in Bj-hTERT cells (p<0.05). In contrast, doxorubicin suppressed both tumor (72.9±5.2%) and normal cells (82.5±5.3%).

At higher concentrations (2:20–5:20), the effect of the extracts on ZR-75 cells remained comparable to doxorubicin (up to 69.5±6.5% for *L. betulinus* and 68.2±4.6% for *T. versicolor*), but the impact on Bj-hTERT cells significantly increased (up to 71.6±7.7% and 69.8±3.8%, respectively).

Conclusions: Both studied extracts demonstrate antiproliferative effects against breast carcinoma cells: at low concentrations, they show relative selectivity toward tumor cells, but with increasing concentrations, their action becomes non-specific, though stronger (comparable to doxorubicin). The obtained results confirm the prospects for further investigation of *Lenzites betulinus* and *Trametes versicolor* as potential sources of new anticancer compounds.