Human Urinary Bladder Cancer T24 Cells are Susceptible to the Antrodia camphorata extracts

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摘要

Abstract

Bladder cancer has been cited to result from the neoplastic lesion with environmental and/or occupational factors identified as causatives. Transitional cell carcinoma (TCC) is the most common type of bladder cancer. Most of the bladder cancer patients die from the invasive, metastatic TCC that has turned out to be resistant to chemotherapy. T24 cells, a cell line established from a human urinary bladder cancer patient, are high-grade and invasive TCC. T24 cells were found very susceptible to ACCE at concentration of 50 microg/mL. MTT assay showed that the cell growth and proliferation were inhibited to 50% of the control when treated with ACCE for 72 h, at which the cell proliferation suppressing rate revealed -4.4 x 10(3)cells/microg per day. Comparing the expressions of the cell cycle biomarkers Cdc2 and Cyclin B1 by the western blot analysis, a phase G(2)M arrest was confirmed. Both the wound scratch assay and the transwell motility assay indicated that ACCE was very effective anti-metastatic against T24 cells. Furthermore, the active form of matrix metalloproteinase-9 (MMP-9) was also found totally suppressed as revealed by zymography at 72 h post-incubation with ACCE, while the light and electron microscopic images have apparently revealed cell membrane damages on T24 cells when treated with ACCE (50 microg/mL). Moreover, both the wound scratch and the transwell assays have demonstrated the migration capability of T24 cells has been significantly retarded to 1.5-fold at same dosage of ACCE used. In conclusion, ACCE is a good anti-cancer agent, being effective in inducing phase G(2)M arrest, acting as an anti-proliferative, and an anti-metastatic agent against bladder cancer cell T24 cells