

Inhibitory mechanisms of *Agaricus blazei* Murill on the growth of prostate cancer in vitro and in vivo.

(Dette er en oppsummering, hele artikkelen er referert på PubMed).

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Source

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Abstract

Agaricus blazei Murill (*A. blazei*) has been conventionally used as a health food for the prevention of cancer. However, little is known about the direct effects and action mechanisms of *A. blazei* on human prostate cancer. In the present study, the effects of *A. blazei* on the growth of human prostate cancer were examined in vitro and in vivo. *A. blazei*, especially the broth fraction, inhibited cell proliferation in both androgen-dependent and androgen-independent prostate cancer cell lines. The broth of *A. blazei* induced lactate dehydrogenase leakage in three cancer cell lines, whereas the activities of caspase 3 and the DNA fragmentation were enhanced the most in androgen-independent PC3 cells. The protein expressions of apoptosis-related molecules were elevated by the broth of *A. blazei* in PC3 cells. Oral supplementation with the broth of *A. blazei* (with the higher ratio of beta-glucan) significantly suppressed tumor growth without inducing adverse effects in severe combined immunodeficient mice with PC3 tumor xenograft. Tumor xenografts from *A. blazei*-fed mice showed decreased proliferating cell nuclear antigen-positive cells and reduced tumor microvessel density. Based on these results, we found that the broth of *A. blazei* may directly inhibit the growth of prostate cancer cell via an apoptotic pathway and suppress prostate tumor growth via antiproliferative and antiangiogenic mechanisms. We therefore suggest that *A. blazei* might have potential therapeutic use in the prevention and treatment of human prostate cancer.

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