Public Abstract
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Title: STUDY OF ANTI-CANCER EFFECT OF WINTER WORM AND SUMMER GRASS ON MCF-7 HUMAN BREAST CANCER CELLS

Winter worm and summer grass (WWSG) is one of the most valued traditional Chinese medicines for fighting cancer, increasing longevity, and improving immunity. It consists of the entomopathogenic fungus Cordyceps sinensis and its natural lepidopteran host Hepialus armoricanus. Using the water extract of Cordyceps militaris, a sibling species of C. sinensis cultivated on an artificial host the silkworm Bombyx mori pupae; we have found that the C. militaris extract inhibited growth of MCF-7 human breast cancer cells in a dose- and time-dependent manner, with IC\textsubscript{50} value at about 11 μg/ml when MCF-7 cells were incubated in the C. militaris extract-containing medium for 96 h. The inhibitory effect of the C. militaris extract on MCF-7 cells was through an apoptosis cascade by inducing pro-apoptotic genes (Bax, Bim, Apaf-1 and Caspase-7) and suppressing anti-apoptotic marker gene (Bcl-2) expression. Moreover, the C. militaris extract also inhibits DNA methyltransferase transcription, suggesting that the reduced cancer suppressor gene methylation might lead to the recovery of tumor-suppressor gene expression and eventually to the inhibition of tumor cell growth. These findings broaden the understanding of this herbal medicine’s medical effect and provide a potential therapy for cancer treatment.