



Inhibition of Tumor Cell Proliferation and Induction of Apoptosis in 95-D Lung Cancer Cells by Drimartol A from Hairy Root Cultures of *Artemisia annua*

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SUMMARY. Drimartol A (DA), a sesquiterpene coumarin ether, was isolated from the cultured hairy roots of *A. annua* for the first time, and no biological activity of DA has ever been reported. In this work, DA was shown to possess interesting cytotoxic activities against the human tumor cell lines of HO8910 (ovary), 95-D (lung), QGY (liver) and HeLa (cervix) by MTT assay, whose IC₅₀ values were ranged within 17.94-22.3 μM for 24h. Given that treatment of lung cancer is a priority of our interest, induction of apoptosis by DA in the human lung tumor cell line 95-D was focused. The 95-D cell growth was inhibited in a time dependent manner and its cell cycle was arrested in the G2 phase by DA. The apoptotic rate of the cells increased in a dose-dependent manner. DA also increased the activity of caspase-9 and -3 and caused a decrease in the mitochondrial membrane potential. These results revealed that DA could efficiently induce 95-D cell apoptosis through mitochondrial dependent pathway, and it may be a potential chemotherapeutic agent.

KEY WORDS: Sesquiterpene coumarin ether, Cytotoxicity, Apoptosis, *Artemisia annua*, Plant hairy root culture.

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