Anticancer Effect of Coniferyl Alcohol on Cholangiocarcinoma Cell

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ABSTRACT

Medicinal plants contain various anticancer metabolites. Our previous study reported that lignin, the major metabolites of Scoparia dulcis L. showed the inhibitory effects on cholangiocarcinoma (CCA). In addition, coniferyl alcohol is recognized as a major monolignol- monomer to form a very complex structure of lignin. Therefore, the present study aims to investigate the growth inhibitory activity of the coniferyl alcohol on cholangiocarcinoma. The results showed that a half inhibitory concentration on KKU-213 of coniferyl alcohol at 48 hrs and 72 hrs were 142.70±18.05 and 103.02±22.64 µg/mL, respectively. Coniferyl alcohol could also induce the CCA cell apoptosis demonstrated by annexin V/PI staining in correspondence with the increasing of BAX/Bcl-2 ratio. Metabonomic study indicated that coniferyl alcohol effects on the level of intracellular metabolites by significantly decreasing of succinate and guanine in KKU-213 cell treated with 100 µg/mL of coniferyl alcohol compared to control group. This result indicated that coniferyl alcohol disturbance the urea cycle and the tricarboxylic acid cycle in CCA cells.

Keywords: Coniferyl alcohol, Cholangiocarcinoma, Apoptosis

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