

AMMONIUM HYDROXIDE EXTRACTS FROM BLACK TEA INHIBIT GROWTH, MIGRATION AND INVASION OF COLON CANCER CELLS

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ABSTRACT

In this study, the effects of ammonium hydroxide extracts from black tea on colon cancer cells were analyzed. Here we showed that black tea extracts decreased the growth of SW480 and HCT116 cells in a dose-dependent manner. The increase of subG1 population indicated that the black tea extracts induced cancer cell death. In addition, cell migration and invasion were significantly inhibited by the black tea extracts. We also found that tyrosine phosphorylation of focal adhesion kinase and paxillin was decreased in these cells, suggesting that integrin signaling pathways were affected by the extracts. In addition, decreased phosphorylation of extracellular signal-

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regulated kinase and increased phosphorylation of p38 and c-Jun N-terminal kinase were observed, indicating that the extracts can modulate mitogen-activated protein kinase (MAPK) signaling pathways. These results suggest that the crude ammonium hydroxide extracts from black tea can significantly inhibit malignant phenotypes of colon cancer cells and that integrin and MAPK signaling pathways could be involved.