The Effect of Cucurbitacin B and I on Colon Cancer Cell Proliferation

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Affecting more than a predicted 1,700,000 people in the year 2019, cancer is a worldwide public health issue with devastating effects. One of the most common forms of this disease is colorectal cancer, which affects over 140,000 people each year. This study observed the effects of the compounds Cucurbitacin B and I on the proliferation of colon cancer cell lines HCT116 and SW480 as measured by viability and clonogenicity assays. In addition, the study measured the effect of Cucurbitacin B and I on the effect of specific proteins important to the regulation of the cell cycle; thereby, providing evidence for changes in cell proliferation and viability. All assays indicated that Cucurbitacin B and I decreased cell proliferation. Finally, a western blot analysis revealed a decrease in the densities of proteins important to the cell cycle (CDK-2, Cyclin A2, Cdc25c, Cdc2, Wee1, Cyclin B1, and Cyclin D1). Furthermore, as treatment time of Cucurbitacin B and I increased, protein densities decreased. Finally, flow cytometry determined that Cucurbitacin B and I increased apoptosis in both colon cancer cell lines. Cucurbitacin B and I demonstrate anti-proliferative effects on colon cancer cells, which indicates that Cucurbitacin B and I are viable treatments for colon cancer.

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