Super Fruits Starve Cancer

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Cancer is a disease that affects more than one third of Americans and is the second leading cause of death in the United States despite the widespread use of surgery, chemotherapy, and radiation therapy. As a result, many are searching for alternative treatments. Annonceous acetogenins are compounds that are present in the fruits Annona muricata and Asimina triloba and demonstrate anticancer properties. Samples of frozen pulp from both fruits were placed in ethanol and the solution was filtered from the solid particles. The water and hydrophilic substances were removed by partitioning between dichloromethane and water. The hydrophobic compounds from both fruits were separated into fractions using flash chromatography. Fractions of interest were determined through thin layer chromatography and were compiled. The remaining extracts were verified for target acetogenin presence using NMR spectroscopy. All solvents used in the extraction process were completely evaporated from the extracts. The extracts were diluted and added to 96 well plates containing MCF7 cells. At 24 and 48 hours, the cells were analyzed for cell number using an MTT assay. Asimina triloba yielded a higher mass of extract than Annona muricata. When added to the breast cancer cells, both fruits induced potent cell death at all concentrations and time periods. Specifically, Asimina triloba induced significantly greater cell death at 24 hours and concentration of 10 uM. Moreover, the data suggests that Asimina triloba is more effective as a treatment against the MCF7 cell line.

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