Centennial Honors College
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ABSTRACT

Major: Biochemistry Poster

Faculty Mentor(s): Mette Soendergaard

Anti-Carcinogenic Effects of Acmella Extracts on Pancreatic Cancer Using a Propidium Iodide Assay

Hannah Eden

Cancer is one of the leading causes of death around the world. Cancer cells have a tendency to adapt and mutate to current treatments. This requires constant research for new treatments. Plants have always been used for medicinal purposes, with technological advancements new medications are being developed using these plants. They often use extracts from these plants or synthetic derivatives from plant products. The Acmella plants have previous medicinal use, and has led to interest in seeing if they also have anti-carcinogenic effects on cancer cells. This leads us to have an interest in specifically testing Acmella extracts on the Mia Paca-2 cell line of pancreatic cancer.

The extracts are made from the flower, root, leaf, and stem of the different plants. Acmella alba, Acmella oleracea, and Acmella calirrhiza are three different Acmella species. These are grown in a greenhouse until they are ready to be harvested and formed into the extracts.

The Mia Paca-2 cells are grown in 48-well plates in Dulbecco's modified eagles medium (DMEM) supplemented with 10% fetal bovine serum, 5% horse serum, and 5 mg/mL gentamicin at 37°C and 5% CO2. The cells are treated with paclitaxel (positive control) and dimethyl sulfoxide (DMSO; negative control) along with the plant extracts. The cells are then tested using the propidium iodide cell viability assay by staining the dead cells red and comparing the cells to the controls through a fluorescent microscope using ImageJ software.