The Effect of Different Dilutions of Pomegranate Juice, Pineapple Juice, Orange Juice, and Coconut Milk on the Growth of HT29 and OVCAR8 Cell Lines

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The research question of this experiment is to determine out of pomegranate juice, orange juice, pineapple juice, and coconut milk, which natural substance will best kill/inhibit the growth of cancer cells. This experiment further tested different dilutions of the juices. For each juice, the dilutions that tested were 1:10000, 1:5000, 1:1000, 1:500, 1:250, and no juice control. In this experiment, the juices were tested on two cancer cell lines, HT29, a human colon adenocarcinoma cell line, and OVCAR8, a human ovarian cancer cell line. The independent variables for this experiment are the different dilution and juice types. The control group for this experiment refers to all wells that have no dilution of juices, instead they only contain medium. The dependent variable is percentage change in cell count. The hypothesis for this experiment is that cell growth will decline with increased concentrations of juices, and the pomegranate juice with the 1:250 dilution will have the greatest effect on the growth of the cancer cells for each cell line. The null hypothesis for this experiment is that all dilutions of each type juice will have no significant impact on the growth of the cell lines. Both cell lines were seeded in separate 96-well plates. There were four replicates for each dilution of juice. The cells were counted with an Imaging Cytometer for three days. Based on the results of this experiment, the hypothesis was rejected for both cell lines and the null hypothesis was accepted due to no statistical significance present in the results. For HT29, the 1:250 dilution of pineapple juice had the larger negative mean percent change in hindering the growth of cancer cells. In all treatments for OVCAR8, each well experience positive mean percent change in cell count.

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