Comparative Study of Aqueous and Ethanolic Extracts of Annona muricata L. Leaves in the Inhibition of the Inflammatory Breast Cancer Cells SUM-149 (Second Phase)

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Inflammatory Breast Cancer (IBC) has been the most lethal form of breast cancer. Nearly 40% of women with IBC stage III, and 11% in stage IV survive at least 5 years after diagnosis. This study aimed to compare the aqueous and ethanolic extracts of Annona muricata L. leaves to determine which was more effective in the inhibition of the IBC cells SUM-149. The first phase research concluded that ethanolic leaves extracts of Annona muricata L. presented high concentrations of acetogenins (anticancer agents). The hypothesis was: The ethanolic extract of Annona muricata L. leaves will be more effective than the aqueous extract in the inhibition of IBC cells SUM-149. Both extracts were applied at 0, 5, 10, 20, 30 and 40µL to 6 x 104 SUM-149 cells in a 24 well plate for 24 hours. Then, the cells were fixed in cold methanol, the nuclei were stained with propidium iodide and viability was quantified by the number of cells with intact nuclei. The GloMax-Multi Detection System was used to obtain cell viability. This data was introduced in the ANOVA program for Tukey multiple comparison, determined by p value of 0.05 to obtain the effectiveness of the extracts. The aqueous extract evidenced an effectiveness of two stars in the quantities of 20 and 40µL in comparison with one star in all quantities of the ethanolic leaves extract. The hypothesis was rejected because both of the extracts of Annona muricata L. leaves were effective. Nevertheless, the aqueous extract was the most effective one.

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