Viability of Lung Cancer Cells After Exposure to a Commercial Mixture of a Natural Compound Extracted from Seaweed and Cereals

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The purpose of this project is to test the effect of natural compounds extracted from seaweed and grains, in decreasing lung cancer cells viability. Lewis Lung Carcinoma cells were cultured and maintained at 37°C and 5% of CO2. Equal number of cells were cultured in a sterile, 96-well plate at 37°C and 5% of CO2. After 20 hours, cells became 80% confluent, and these were exposed to the seaweed and grains compound, oxidized seaweed and cereals compound, Ion Mix (Fe, Ca, K) and No Treatment (Control group). The MTT assay was used to detect the cell viability, and measures were taken using a spectrophotometer, it demonstrated a significant decrease in lung cancer cell viability in each case: intact compound (56%), oxidized compound (26%) and Ion Mix (82%). After 20 hours of treatments, the Flow Cytometry demonstrated that the compound and oxidized compound samples showed the highest amount of non-viable cells, but not with the Ion Mix. This created a notable decrease in the number of cells as a result of an osmotic imbalance, causing the cell particles to be too small for detection with the Flow Cytometer. Since all p-values were < 0.05, all treatments are considered to significantly reduce cancer cell viability compared to the control group. Future studies could test if the compound affects the cell viability of non-cancerous lung cells and also determine if the seaweed and grains compound could decrease the tumor size in Vivo, using a mouse as model of lung carcinoma.

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