Synthesis of Silver Nanoparticles and Their Effects on Cancer Cells

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In recent years, nanoparticles for therapeutic treatments of cancer has begun to show great promise. The nanoparticles used in this study were composed of silver that were chemically synthesized. Silver is known for its anti-inflammatory and antimicrobial properties. However as a nanoparticle, silver has some anti-cancerous properties. As a treatment, pose less side effects to chemotherapy due to it being a localized treatment. Traditionally, chemotherapy requires drugs to be delivered systemically through the blood stream. However, this systemic treatment causes many side effects such as dehydration, malnutrition, and a weakened immune system caused by the way chemotherapy works. The chemotherapy works by inducing apoptosis on cells in the body with a high proliferation rate such as the immune and digestive systems. The use of nanoparticles as an alternative treatment for cancer has shown many positive attributes, so recently it has emerged as a new experimental treatment for cancer. Due to the unique surface area to volume ratio, only small amounts of the nanoparticles are required. In this study, the chemically synthesized silver nanoparticles had little amounts of agglomeration and were in the size range needed for therapeutic use. The nanoparticles were then used to treat HER 2+ breast cancer cells obtained from a local University. After treatment, the cells were incubated for 24 hours at 37? with 5% CO2 levels. All the concentrations of the nanoparticles had a significant effect on the HER 2+ breast cancer cells compared to the negative control.

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