Using Iron and Graphene Oxide Nanoparticles to Induce Targeted Apoptosis in Cancerous Cells

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Cancer is a worldwide problem, especially breast cancer in women, with the treatment options consisting primarily of chemotherapy. It is not only very expensive but it is known to target fast growing healthy cells (healthy hair follicles or the lining of the small intestines). A current solution is using oxidized nanoparticles, which can damage the cancer cells inducing them into apoptosis. This study uses Iron and Graphene Oxide nanoparticles to induce apoptosis in cancerous cells without harming the healthy cells. Graphene oxide nanoparticles tend to target the mitochondria activity and the Iron Oxide nanoparticles target the lysosome activity. The large surface area and reactive oxygen species induce potential cell death which makes the nanoparticles important. Nanoparticles target the cancer cells and go past the healthy cells without harming them. Using an MTS Assay, it has been determined that iron and graphene oxide nanoparticles kill cancerous cells. This more cost-effective treatment has promise in targeting only cancer cells without sacrificing the patient's healthy cells.

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