

Abstract Submitted  
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**Cytotoxicity of Gold Nanoparticles with Varying Concentration and Under Low Dose Environmental Radiation on Human Embryonic Kidney 293 Cells (HEK-293)** SHALANA CRUDUP, BRUCE BRAENDER, Rowan University, CRISTINA IFTODE, Rowan University, Dept. of Biological Sciences, TABBETHA DOBBINS, Rowan University, Dept. of Physics & Astronomy — Nanomaterials are increasingly being used in medicine. Most research surrounding the health and safety effects of nanomaterials examine the cytotoxicity of nanoparticles alone. Few studies, as this one does, examines the combined effects of nanoparticle concentration and radiation exposure on cytotoxicity to human embryonic kidney 293 cells (HEK-293). Nanoparticles injected in the body are supposed to undergo biodegradation once they are done their specified task, however, some do not and accumulate in the cells (particularly at the liver and kidney) and this causes intracellular changes. Examples of intracellular changes are the disruption of organelle integrity or gene alterations. This will cause the cells to die because the cells are very sensitive to changes in their pH. The experiments reported here focus on the cytotoxicity of gold nanoparticles as a function of varying particle concentrations and also with and without exposure to UV radiation.

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