Effect of Silver Nanoparticles on Escherichia coli

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Currently, over 1.5 million of the world’s population suffer from unsanitized water containing waterborne diseases. One of the most common diseases is enterotoxigenic E.coli. This disease developed from drinking polluted water. A solution to counteracting water contamination is by adding silver nanoparticles to water. Silver nanoparticles, also known as colloidal silver, are known for being useful in medical applications due their strong antimicrobial activities. There microbial activities can be exposed to bacteria such as E.coli. In this study, silver nanoparticles were synthesized by reducing Silver Nitrate with Sodium Borohydride. Homemade silver nanoparticles were then tested on pond water that was collected from nature. There was a hypothesized contaminated of E.coli from dairy cow feces. Two drops of silver nanoparticles were added to each test tube with pond water to be agitated, and the control test tube only contained pond water. The agitated sample was added to plated nutrient agar. The plates of nutrient agar were incubated for 48 hours at 37?. After the time, the plates were taken out to be studied. The project was then conducted with isolated E.coli bacteria strains to find a possible amount of silver nanoparticles to cease all growth. The study revealed that silver nanoparticles had hypothesized results against E.coli. The results of the study can be applied to a water filter to purify unsanitary water.

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