Silver Nanoparticle Water Filtration Incorporating Ultra-Violet Sterilization

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In the 1900’s silver was used extensively as an antimicrobial agent. When antibiotics were developed they became very popular and silver as an anti-bactericide decreased (Alexander, 2009). This research is re-evaluating the use of silver as an antimicrobial agent because of antibiotic-resistant strains of bacteria. Ultraviolet sterilization was also incorporated into the filtration method. Water contaminated with E. coli was filtered through a piece of filter paper impregnated with 100 microliters of silver nanoparticles, while being exposed to an ultraviolet light. Another sample set was tested included previously filtered water samples then being exposed to the ultraviolet light. The results showed that the amount of E. coli was reduced by 50% or greater in all samples tested. In conclusion, silver nanoparticle filtration with the incorporation of ultraviolet sterilization as a secondary filtration method will extensively eradicate the amount of E. coli from contaminated water.

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