What Effect Will Microgravity vs. Gravity Have on the Reishi Mushroom’s (Ganoderma lucidum) Ability to Weaken, Damage, or Destroy E. coli Bacteria?

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What effect will microgravity VS gravity have on the Reishi mushroom’s (Ganoderma lucidum) ability to weaken, damage or destroy E.coli Bacteria?” Ganoderma lucidum, the common Reishi mushroom, has a history of destruction and has been used for thousands of years in China. The fungi and has been promising in cancer treatments and is listed in Japan as a cancer treatment. I believe the Reishi mushroom will induce the cell arrest and apoptosis in pathogens (Wachtel-Galor, et al.). Microgravity's lack of force due to the "free fall" environment could enhance the antimicrobial destroying properties of the mushroom. I originally wanted to send chronic myeloid leukemia into space but the cells would not survive in the ambient conditions. The benefits of utilizing bacterial cultures in place of human leukemia cells in this experiment includes the ability to precisely initiate and terminate cell growth, and the ability of these cells to grow in the ambient conditions aboard the International Space Station. (ISS) After the FME tube returned from space all three experimental tubes were analyzed on the same day. Data was collected using a spectrophotometer where absorbance and transmittance values at 600nm were recorded. This data and 400X microscopic observations indicated that the Reishi mushroom had a negative impact on the growth rate of E.coli bacteria.

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