

Researching Bacteria's Virulence in Space

Research Question:

Design an experiment that will investigate the effect of space flight on the genetic responses and disease-causing potential, or virulence, of Salmonella Typhimurium.

Constraints:

1. Proper containment of experiment to pose no threat to crew during or after spaceflight
2. Experiment must be activated in spaceflight and coordinated with activation of ground based controls
3. Strict timelines must be designed in your experiment to coordinate with the astronaut schedules
4. Experimental return to the investigator post-flight must be rapid to ensure sample integrity for analysis on Earth
5. Minimize crew time
6. Minimize hardware volume, mass, and power needs