Increase in Bacterial Resistance to Ampicillin

Suhani Gupta

Topics in Biology

Josh Cannon

Summer Ventures in Science and Mathematics

The University of North Carolina at Charlotte

Abstract

Antibiotics are essential components in the medical field that help patients recover from various bacterial illnesses. However, over the years, bacteria have developed resistance to many antibiotics. *Escherichia coli* is a bacteria that lives in the intestines; while the bacteria provides vitamins for the body, it can also be harmful to the health and cause abdominal pain or other discomforts. This experiment was conducted to determine if *E. coli* could become tolerant of ampicillin through repeated exposure. A non-resistant *E. coli* strain was inoculated in nutrient agar liquid broth for 24 hours at 37 degrees. Using aseptic technique, a lawn of the liquid culture was created on a nutrient agar plate with sterile swabs for the Kirby-Bauer disk diffusion test. The zones of inhibition were measured and recorded. Multiple generations of the bacteria were cultured until there was a noticeable increase in resistance to ampicillin. After many rounds of exposure, *E. coli* became tolerant of ampicillin.