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The Effects of Doxorubicin on Digestive Bacteria

The purpose of this research was to determine if Doxorubicin would interfere with digestive bacteria's ability to reproduce. Two different experiments were performed, one using petri plate, the other with culture tubes, both with the intention of determining if Doxorubicin would hinder the growth and reproduction of E. coli. Four generations of E coli were plated on nutrient agar. The first generation was exposed to Dox. For each generation thereafter, bacteria were transferred from the previous generation's plate, collected from as close to the Dox-discs as possible, and again exposed to Dox. Data collected indicates that the bacterial growth was negatively impacted by the Doxorubicin. There was a visible zone of inhibition on four out of the five plates. From the generation one to three the zone of inhibition increased. The zone of inhibition from generation three to four decreased in size. The decrease indicates that the bacteria may have become resistant to the drug. The broth cultures showed similar results. The bacterial growth in these cultures was measured by the absorbance of 600 nm light waves in a spectrophotometer. The greater amount of light absorbed indicated an increase in bacterial growth. For the first five days, the bacterial cultures showed minimal growth and from day six through day eight the growth rate increased. The initial results of this research indicate that initial exposure to Doxorubicin interferes with the growth of digestive bacteria; however prolonged exposure may cause the surviving bacteria to become resistant.