Medicinal Uses of Artemisia tridentata

Jones, Mattisen (School: Owyhee High School)

The purpose of my research was to investigate the possible antibacterial properties of Artemisia tridentata (Big Sagebrush). I hypothesized that Artemisia tridentata would inhibit the growth of bacteria. Based on my observations, Artemisia tridentata helps heal the wound of an injured animal in the field as the animal brushes against the leaves of Artemisia tridentata. First, the plant extracts were prepared. A strong tea with Artemisia tridentata leaves was made, and an ethanol extract with Artemisia tridentata was prepared. Petri dishes containing nutrient agar were streaked with ATCC8739 Escherichia coli bacteria. The following disks were applied to the prepared petri dishes: a disk with chloramphenicol, a disk soaked in Artemesia tridentata tea, a disk soaked in Artemisia tridentata ethanol extract, and a plain disk. The petri dishes were then incubated at 37 degrees Celsius for 24 hours. My result showed no activity against Escherichia coli bacteria around the disks soaked with Artemisia tridentata solutions. My hypothesis regarding the antimicrobial effects of Artemisia tridentata was rejected. I then had the opportunity to test my Artemisia tridentata extracts on A549 lung cancer cells. An AlamarBlue assay was done to test both the Artemisia tridentata tea and the ethanol extract on A549 lung cancer cells. The highest concentration of my Artemisia tridentata ethanol extract inhibited the growth of the lung cancer cells. More experiments should be done testing possible anticancer effects of Artemisia tridentata. More expirements shoud be conducted regarding the anticancer effects of Artemisia Ttridentata. Future work could also include testing Artemisia tridentata extracts on different types of bacteria.

Awards Won: