Medicinal Activity of Larrea tridentata and Juniperus osteosperma Extracts

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Larrea tridentata and Juniperus osteosperma are two plants used by Native Americans for a variety of medicinal purposes. In this study, the leaves of Larrea tridentata and the "berries" (cones) of Juniperus osteosperma were examined under laboratory conditions. Aqueous solutions and ethanol extracts were made from Larrea tridentata leaves and from Juniperus osteosperma cones. The in vitro sensitivity of MDA breast cancer cells to the aqueous solutions and ethanol plant extracts were examined. The ethanol extracts of both plants were found to be effective against MDA breast cancer cells with Larrea tridentata showing a stronger effect than Juniperus osteosperma. Aqueous solutions and ethanol plant extracts were also tested on Staphylococcus aureus. Strains of Staphylococcus aureus are known for having developed resistance against common antibiotics such as oxacillin. The Juniperus osteosperma extracts had little to no effect on Staphylococcus aureus. The Larrea tridentata extract effectively inhibited the growth of Staphylococcus aureus. This work can be an important first step in the development of new compounds as treatments for drug resistant bacteria and lead to a possible replacement of chemotherapeutic drugs such as Doxorubicin (Dox) with high cardiotoxicity for cancer patients.

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