New Research, Old Medicine: Exploring Antibacterial Properties of Plants and Fungi Used in Indigenous Medicine

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In Western medicine, the search for new antibiotics is becoming increasingly urgent due to developing antibiotic resistance, and few novel antibiotics have been discovered in the last decades. Indigenous tribes thrived in North America using their own medicines from the land for hundreds of years before European colonization. This project tests plants and fungi used in Indigenous medicine for antifungal or antibacterial properties. Plants and fungi used in Indigenous medicine that grow in the local area were collected. Endophytic fungi were extracted out of these plants and then tested against other fungi and the bacteria Enterobacter aerogenes and Staphylococcus epidermidis using a co-culture inhibition assay. Because the mushroom sample was consumed as a tea in its medicinal form, an extract was derived from it, and then that extract was tested against various fungi as well as the bacteria Enterobacter aerogenes and Staphylococcus epidermidis using the disk diffusion method. The mushroom Hericium erinaceus extract showed bacteria resistance potential against Gram-negative Enterobacter aerogenes, and an endophytic fungus from a Solidago canadensis plant showed antifungal potential as well. Therefore, the plants and fungi used in Indigenous medicine are promising candidates for future antimicrobial discovery. In the future, I hope to further my research by calculating the effective dosage of these plants and fungi as well as further researching the medicinal potential of the Hericium erinaceus extract.

Awards Won: