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Concept of Organisms having Anti-Bacterial Properties

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DESCRIPTION

Natural products continue to play a crucial role in drug discovery. Between 1981 and 2010, 118 new chemical entities (NCEs) were approved for use as antibiotics, with natural products and semisynthetic derivatives derived from these natural precursors accounting for 34% of the 128 NCEs approved for use as cancer treatments. Natural products have a significant advantage in continuing to provide new commercial drug leads because they have 40% more chemical scaffolds than synthetic chemicals. One of the main reasons hops are used in brewing is because they kill bacteria. Hops are dried to a moisture content of 8%-10% in order to prevent spoilage, but they remain susceptible; as with other raw materials, quality control checks must be performed on each batch. After the brew house, many breweries perform dry hopping, which raises the risk of introducing contaminants. Fungi, molds, and mildew are the most likely microbes in hops; the tolerance is less than 10 cfu/g, and wild yeast is not tolerated. Accessing this diversity in an efficient and effective manner is the key. Plants are a promising place to start when it comes to natural sources of active compounds. There are currently 190 examples of clinical trials involving pure or combined plant compounds for treating various ailments that have been reported by the US Institute of Health, query "plant drugs;" approximately one-third of the top-selling drugs have been derived from plant metabolites; Only plant-derived pure compounds or herbal extracts that were used as therapeutic agents were taken into consideration. However, the plant world, particularly Argentina's native flora, has not yet been fully explored. The woody bush *Flourensia oolepis S. F. Blake (Asteraceae)*, more commonly referred to as "chilca," is widespread in the highlands of the central Argentina provinces of Cordoba and San Luis. Our group has previously reported the ethanol extract from this plant's antibacterial activity. The creation of antibacterial nanomaterial's is an effective approach to addressing the issue of bacterial resistance, which is becoming an increasingly serious issue. Gold nanoparticles are easily manipulated, and their antibacterial properties can be enhanced by modifying their structure and size or adding ingredients. They also have excellent biocompatibility and stability. Additionally, gold nanoparticles are excellent drug carriers that can enhance the antibacterial effects of loaded antibiotics. Gold nanoparticles have the potential to enhance the effectiveness of antibacterial strategies against some resistant bacteria when modified and combined with other antibacterial medications. Modified gold nanoparticles can be a good medium for photo thermal treatments to kill bacteria because they have photo thermal effects. Many materials can acquire the necessary antibacterial properties by incorporating gold nanoparticles that have been functionally modified. Cations, low-temperature plasma, a variety of surface ligands, and other potential antibacterial agents can also be combined with gold nanoparticles. In a nutshell, the antibacterial properties of functionalized gold nanoparticles show that they have a lot of practical application potential and give more ideas for how to deal with bacterial infections. Gold nanoparticles are also finding more use in oral biology at the same time. The purpose of this study is to learn more about the metabolites that cause this effect. In addition, the cytotoxic activity of the compounds against leukemic cell lines and their multidrug-resistant (MDR) counterparts was examined. This was expanded in order to ascertain the mechanism underlying the toxicity of leukemic cells.

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CONFLICT OF INTEREST

The author's declared that they have no conflict of interest.

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