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Purging nut as a potential raw material for drug development

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The rapid advancement of science and technology allows scientists and researchers, especially in the medical field, to continue and discover possible cures for different diseases that were considered to be incurable in the past. In spite of these new discoveries, new diseases have also risen and old diseases have evolved to be worse. Diseases are often caused by microorganisms, especially pathogenic bacteria. These pathogenic bacteria are controlled through the use of antibacterial drugs to cure the diseases that they cause. However, a lot of bacteria are gaining antibacterial or antimicrobial resistance through the process of mutation and conjugation. Because of this, antibacterial drugs are deemed to be ineffective against some bacteria. These events cause the cycle of curing diseases and continuous search of treatments and substances that could be used for drug development. The process of drug development usually starts with preliminary studies in finding bioactive compounds. Bioactive compounds are substances that have pharmacological properties and biological effects on living organisms and can be used in promoting the health of humans. During the past years, bioactive compounds are found in natural resources, such as vegetables, fruits and ethnobotanicals. One of the reported plants that have pharmacological properties is the purging nut (Jatropha curcas). It is a drought-resistant plant that is widely cultivated in countries like Central and South America, Southeast Asia, India and Africa. It is commonly known to be used for biodiesel production and in traditional and folk medicine. Some of the bioactive compounds that are reported to be present in purging nuts include alkaloids, flavonoids, phenolics, diterpenes and many more. It is also reported to have pharmacological properties, such as anti-inflammatory, antioxidant, antimicrobial, antidiabetic, anticancer and analgesic activity. Particularly, several studies have stated that it has antimicrobial property against Escherichia coli, Staphylococcus aureus, Pseudomonas aeruginosa, Bacillus subtilis, Klebsiella pneumonia, Proteus mirabilis, and many more. Therefore, purging nuts could be used as a source of materials for the development of drugs that could cure microbial infections and also cancer. However, there are also studies that describe the toxicity of purging nuts. In this light, further studies and careful examination of the properties of purging nuts should be done to develop a drug that is effective in curing diseases, safe for human consumption, and has very minimal side effects.

Keywords: Purging nut, Jatropha curcas, Pharmacological properties, Bioactive compounds, Drug development

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