

Thermal-Microwave assisted extraction of active components in fruits and leaves of *Morinda Citrifolia*(Noni) Plant from Solomon Islands

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Extraction of bioactive compounds from plants and other microorganisms for the purpose of medicinal or pharmaceutical use requires specialized and highly efficient techniques in order to minimize time, save costs, reduce waste, and maximize extraction yield. In this study, a thermal microwave assisted extraction system was developed by modifying a domestic Samsung microwave oven. The microwave system is used with a combination of organic solvents to extract various phytochemicals and antioxidants from leaves and fruits of *Morinda Citrifolia* (Noni) plant from Solomon Islands. The conditions optimized includes: the type of solvents (water, methanol, ethanol), solvent ratio (20, 40, 60, 80%), solvent to solid ratio (30:1, 60:1 ml/g), microwave power (100, 300, 450, 700 W), extraction time (2, 5, 10, 15, 20, 30, 60 mins), Temperature (25, 40, 60°C) and pH (4.5, 7, 8.5). The optimum condition will be determined by evaluating radical scavenging activity (DPPH) and chemical compositions using chromatographic and response surface methodology techniques.