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A REVIEW OF ISOLATION AND IDENTIFICATION OF BIOACTIVE COMPONENTS FROM *MURDANNIA* SPECIES

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Abstract:

The term of medicinal plants includes a variety of plants used in herbalism and some of these plants possessed activities suitable for the medicinal area which can be processed for drug development and synthesis. These plants recommended for their potency in treating diseases and illnesses. This study consists of the review on the bioactive components that had been identified in the *Murdannia* species as well as the methods used to isolate and identify these bioactive compounds by using collection of relevant information, articles, journals and books by searching in various databases. UV-Vis spectrophotometer used on *M. bracteata* identified 10% of gallic acid equivalent of phenolic compounds. GC-MS analysis were able to identify α -tocopherol, β -sitosterol and stigmaterol in *M. bracteata*. Then shows presence of 2-Furanone,3,4-dihydroxytetrahydro, 4H - Pyran -4-one,2,3 - dihydro -3,5- dihydroxy-6-methyl, 1,2,3-Propanetriol, diacetate in *M. Lanuginosa* and shows the presence of salicylaldehyde, azine and diphenylfurazan N-oxide furazan, diphenyl-, 2-oxide 3,4-diphenylfurazan 2-oxide diphenylfuroxan in *M. simplex*. Caffeic acid and apigenin are found in hexane extract of *M. bracteata* determined by using UPLC analysis. NMR spectroscopy used on ethanolic extract of *M. loriformis* shows presence of 3b-O- D-glucopyranosyl-24n-ethylcholest-5-ene and β -O-D-glucopyranosyl-2-(2-hydroxy-Z-6-enecosamide)-sphingosine. Standard colour test determines the presence of alkaloids and steroids in ethanolic extract of *M. loriformis*, then, tannins, saponins, alkaloids and flavonoids in methanolic extract of *M. nudiflora*, and, phytosterols, alkaloids and flavonoids in ethanolic extract of *M. nudiflora*. It is suggested that other isolation and identification methods are used on these plants to determine presence of other bioactive compounds.

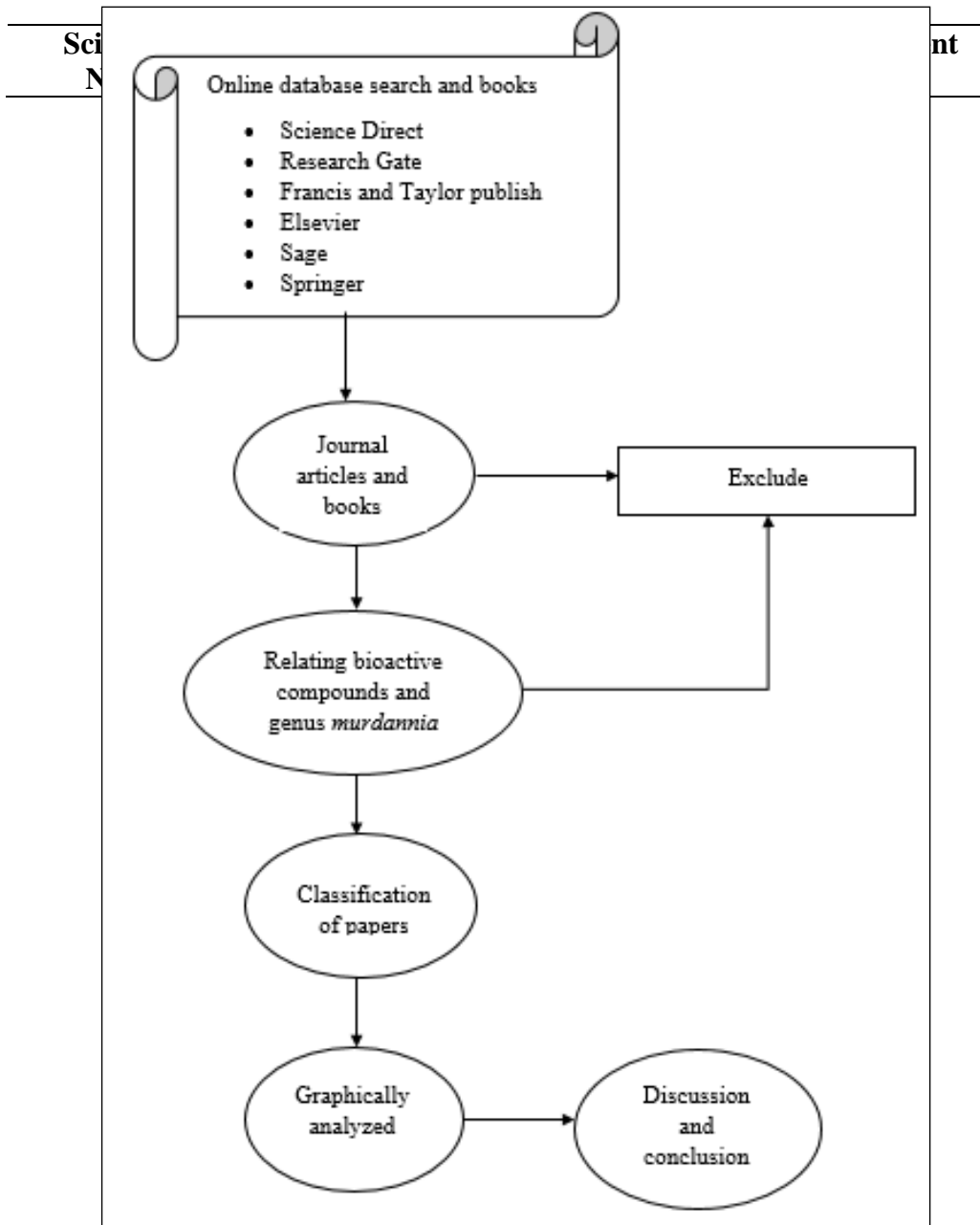
Keywords:

Review, *Murdannia*, Bioactive components, Traditional medicine

Objectives:

- To address the methods used to isolate and identify the bioactive compounds in *Murdannia* species
- To review the bioactive components that had been identified in the *Murdannia* species

Methodology:



Results:

<i>Murdannia bracteata</i>	1. Methanolic/UV-Vis spectrophotometer 2. Hexane/GC-MS analysis 3. Hexane/UPLC analysis	1. Phenolic compounds 2. α -tocopherol, β -sitosterol, stigmasterol 3. Apigenin, caffeic acid
<i>Murdannia loriformis</i>	1. Ethanolic/NMR spectroscopy 2. Ethanolic/ Qualitative standard colour test	1. 3b-O- D-glucopyranosyl-24n-ethylcholest-5-ene (steroidal glucoside), β -O-D-glucopyranosyl-2-(2-hydroxy-Z-6-enecosamide)-sphingosine (glycosphingolipid). 2. Alkaloids, steroids
<i>Murdannia lanuginosa</i>	1. Methanolic/GC-MS analysis	1. 4H-Pyran-4-one,2,3-dihydro-3,5-dihydroxy-6-methyl (flavonoid), 1,2,3-Propanetriol, diacetate (glycerol), 2-Furanone,3,4-dihydroxytetrahydro.
<i>Murdannia nudiflora</i>	1. Methanolic/ Qualitative colour test phytochemical 2. Ethanolic/ Qualitative standard colour test	1. Tannins, alkaloids, saponins, flavonoids. 2. Phytosterols, alkaloids, flavonoids.
<i>Murdannia simplex</i>	1. Methanolic/GC-MS analysis	1. 4H-Pyran-4-one,2,3-dihydro-3,5-dihydroxy-6-methyl (flavonoid), salicylaldehyde, azine, diphenylfurazan N-oxide furazan, diphenyl-, 2-oxide 3,4-diphenylfurazan 2-oxide diphenylfuroxan

Conclusion:

These studies had proven the potential of the plants in the pharmacology as medicinal alternative for patients. GC-MS analysis results shows *M. bracteata* contains high concentrations of different components of phenolic compounds, whereas the *M. lanuginosa* plant contains major constituents of flavonoids and glycerol and *M. simplex* contains bioactive compounds such as flavonoid, pyrimidine compounds, protamine and aromatic carboxylic acid. Qualitative standard colour test also shows its capability in detecting several natures of compounds in different extracts of the species. The results show that methanolic and ethanolic extract of *M. nudiflora* and ethanolic of *M. loriformis* contains alkaloids which is a part of phenolic compounds. Flavonoids are detected in both of the methanolic and ethanolic extract of *M. nudiflora*.