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IDENTIFICATION OF PHYTOL COMPOUNDS CONTAINED IN THE METHANOL EXTRACT OF DRAGON TAIL LEAVES (*RHAPHIDOPHORAPINNATA* (L.F) SCHOOT)

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ABSTRACT

Biodiversity in the earth is not only used as food, but also useful as an ingredient to treat various types of diseases, Dragon Tail Leaf Plants (Rhaphidophora Pinnat (Lf) Schoot) are used as medicine to treat cancer, reduce body fat, anti hepertension, rheumatism, tendon (sprained), cough and stroke therapy.

The purpose of this study was to identify phytol compounds in methanol extract of Dragon Tail Leaves (Rhaphidophora Pinnata (L.f) Schoot). This research is an experimental study, the results of the study: the samples taken from the 5th fresh leaf from below then made powder and soaked with methanol solvent after that evaporation was made so as to obtain a thick extract.

By using the GC-MS method that Dragon Tail Leaves contain Phytol compound containing 27.64%, which is used in the synthesis of vitamin E and K, treating hepertension, and also functions as an antioxidant.

The researcher suggested that the results of this study could be an additional reference for students to be used as a further research development on the potential of Dragon Tail Leaves as a drug.

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INTRODUCTION

Indonesia is a country that has abundant and diverse natural wealth, but

only a small part is researched and utilized. Biodiversity in the earth is not only used as food or for its beauty, but can also be useful as a material to treat various types of diseases.

Based on research conducted by Marlini et al., (2017) that research on pangi leaves (Pangium Edule Reinw) is to identify chemical compounds contained in morning leaf extract using GC-MS analysis techniques. The results of this study are pangi leaves containing chemical compounds including Octadecadienal acid 24.60%, Hexadecanoic acid 15.08%, Phytol 10.33%, Neopytadiene 5.21%, Squalene 21.22%. Based on the results obtained that the same compound in this study for the study being studied now is the Phytol compound with a different sample of Dragon Tail Leaves.

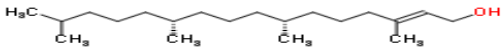
Dragon tail plant originates from the Himalayas, is an herbal plant, epiphytic, creeping, climbing with a height of 5 to 20 meters. Dragon tail plant roots are attached to the pedestal like a wall or tree and also have a hanging root. have nodes. Dragon-tailed plants have green leaves, sharing and cutting and tapering leaves. Spatha is shaped like a canoe, green and cylindrical spadic. This plant has a wide habitat in southern Asia to Australia. widespread in southern Asia to Australia.

Dragon Tail Leaf is one of the plants that has been known by the public as a medicinal plant. Information was obtained that, people who consume dragon tail leaves have the effect of polyuri (urinating). The simplicia character of the Dragon Tail Leaf (Rhaphidophora Pinnata, Schott) is macroscopically ie the leaves are brown, wrinkled, or piercing and have a slightly flattened taste. Microscopically showed the presence of cuticle, upper epidermis, lower epidermis, parasitic stomata, palisade tissue, spongy tissue and a sheath of transporting bundles, 6.63% moisture content, 19.15% water soluble extract content, ethanol extract content 10.35 %, total ash content 12.05%, and ash content not acid-soluble 0.24%.

Phytol Compounds

Chemical Formula : C20H40O
Molar mass : 296.54g/mol
Specific mass : 0.850g/cm3
Boiling point: 203 to 204 0C (397 to 399 0F; 476 to 477 K) at 10 mmHg. ; soluble in organic solvents; used in the synthesis of vitamins E and K

Structure of Phytol Compounds



METHODS

The type of research used in this study is a type of experimental research with a sample of Dragon Tail Leaves (Rhaphidophora Pinnata (L.f) Schoot).

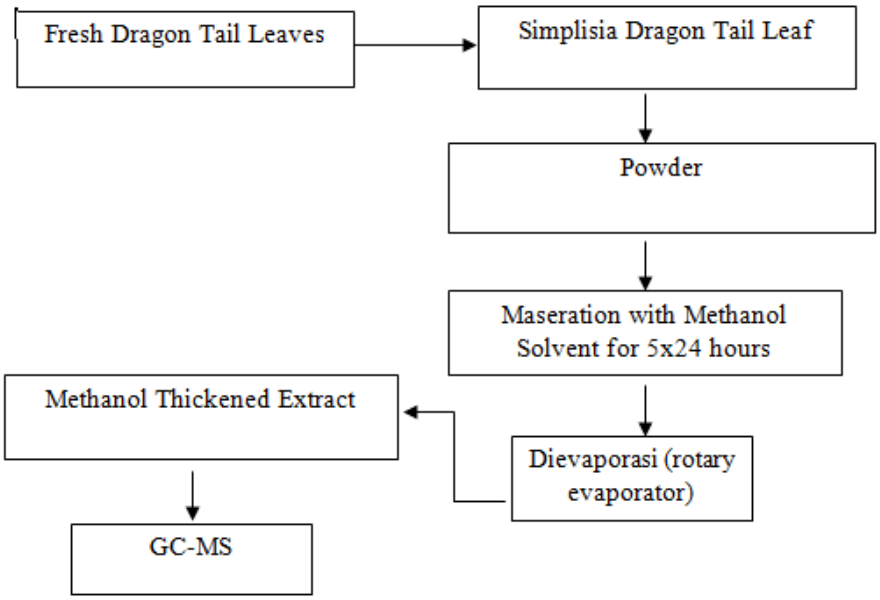


Figure 1. Scheme of Making Dragon Tail Leaf Extract.

Tools And Materials

1.Tools

The tools used in this study include:

a. AnalyticalScales
b. Oven
c. Blender
d. Jars
e. Sieve
f. StirringRod
g. Filterpaper
h. AluminumFoil
i. Gunring
j. Erlenmeyer
k. Beakerglasses
l. Measuringcup
m. Droppipette
n. GC-MStool

2. Material

The materials used in this studyare:

a. Naga Tail Leaf (Rhaphidophora Pinnata (L.f) Schoot) obtained from Kailupa Village, North Loloda Subdistrict.
b. Methanol Solvent

PROCEDURE

Dragon Tail Leaves (Rhaphidophora Pinnata (L.f) Schoot) Leaves were obtained from Kailupa Village, North Loloda District, North Halmahera Regency. Fresh tail leaves are taken from the leaves, the leaves taken are old leaves, the leaves taken are the 5th leaf from the bottom, taken directly by hand, then washed with running water, chopped, then dried under the sun at 7-10 morning until the sample is completely dry. The leaves are pollinated using a blender, Dragon Tail Leaf powder is sieved with a suitable mess sieve, after that it is weighed again and then put in a container and labeled.

The first step, input the Dragon Tail Leaves that have become powder into the maceration vessel and then pour methanol, then close the maceration vessel and leave for 5 days in a place protected from light while stirring every day, after 5 days then filter to separate filtrate and residue, macerated return for 2 days then filter and the residue is removed. Next, collect the filtrate and apply it with a rotary evaporator to obtain a thick extract.

RESULTS

Sampling of Dragon Tail Leaves (Rhaphidophora Pinnata (L.f) Schoot)

Dragon Tail Leaves was obtained from Kailupa Village, North Loloda District, North Halmahera Regency. Dragon Tail Leaves are taken fresh leaves, the leaves taken are the 5th leaf from the bottom, then washed with running water until clean, after cleaning the chopped, then weighed to find out the wet weight of the sample from the Dragon Tail Leaf. After weighing, the results obtained from the wet weight of 650 grams, after knowing the results of the wet weight then dried under the sun at 7-10 am until the sample is completely dry. After drying the sample then weighing it again to obtain dry weight(350grams).

Manufacture of Dragon Tail Methanol Extract (Rhaphidophora Pinnata (L.f) Schoot)

The sample is smoothed using a blender to obtain fine powder. After the sample is blended, then sifted using a sieve to separate the fine powder with residue, after obtaining fine powder then weighed to find out the net weight of the powder.

After knowing that the fine powder is as much as 100 grams, then dissolved in methanol solvent with a ratio of 1:10, for 5 days while stirring every day, then filtered the methanol extract of the Dragon Tail Leaf, the filtrate is taken and the residue is removed. Then macerated again for 2 days, after being macerated again it was evaporated using a water repellent to obtain a thick extract of Dragon Tail Leaf (3.8 grams).

Table 1. Analysis of Phytol Compounds on GC-MS Tools.

SAMPLE	COMPOUND	CONTENT (%)
Benalu Tree	*2,3-Dihydro-3,5-Dihydroxy-6-methyl-4H- pyran-4-ONE*	41%
	Neophytadine	2,34%
	Palmitic acid ethyl ester	1,10%
	Palmitic acid	2,06%
	Phytol	27,64%
	Ethyl linoleate	1,91%
	Linolenic acid, ethyl ester	5,32%
	Linolenic acid	2,04%
	Methyl 17-methyl-octadecanoate	1,38%
	3-Vinyl-1-cyclooctene	3,26%
	gamma-Tocopherol	1,51%
	Vitamin E	1,64%
	Campesterin	1,66%
	Stigmasterol	2,54%
	gamma-Sitosterol	6,98%

DISCUSSION

Dragon Tailed plants come from the Himalayas, are epiphytic herbs, creep, climb with a height of 5 to 20 meters. Information obtained is that, people who consume Dragon Tail Leaves have the effect of polyuri (urinating) and can also cure diseases such as swollen stomach and yellowing eyes. Based on the results of compound identification carried out using the GC-MS method, it was proved that Dragon Tail Leaves (Tree Leaves) contain phytol compounds.

Based on the test results of Dragon Tail Leaf extract (parasite tree) in the table above that the phytol compound has a concentration of 27.64% is the 3rd order of the results of the methanol extract of the Dragon Tail Leaf, while the highest concentration is 2.3-Didydro-3,5-Dihydroxy-6-methyl-4 H-pyran-4ONE 41% and the lowest concentration is palmitic acid ethyl ester 1.10%.

Phytol compounds are acyclic diterpene alcohols which can be used as precursors for the manufacture of synthetic forms of vitamin E and vitamin K. In ruminants, intestinal fermentation of digested plant materials frees phytol, a constituent of chlorophyll, which is then converted into phytanic acid and stored in fat. present in extracts of marijuana as a breakdown product of chlorophyll, a substance responsible for the green color of plants, and vitamin E, also known as tocopherol. In one study, phytol together with associated acidic phytanic compounds greatly reduced the effect of the mutation caused by retinol in mice, which is an "active" form of vitamin A. Retinol is often often found in ingredients in skin care products, such as treatment for acne and wrinkles.

Other studies have shown that phytol can help the anti-anxiety effects that have been shown in CBD, phytol has been found in one study to irreversibly prevent the enzyme known as SSADH from breaking down the GABA neurotransmitter, thereby increasing its level. Neurotransmitters, which are chemicals produced by the nervous system to allow communication between the brain and nerve cells can be stimulated, where they stimulate nervous system function, inhibition, where they reduce, or both.

Gaba is the main inhibitory neurotransmitter, and some anti-anxiety drugs like Valium exert their effects by increasing Gaba's action. Because of this, phytol may be behind the relaxing effects of wild lettuce and green tea, despite the caffeine content in tea leaves. Phytol C20H40OA chemical formula liquid with boiling point 202-204-C; soluble in organic solvents; and is used in the synthesis of vitamins E and K. Based on previous research conducted by Mulyar et al. (2012) on the results of the analysis with the GC-MS method that the composition and content of NSL also showed that there were several chemical compounds that have a large content in A.

Alba mangrove leaves and roots at the tree level. One of the chemical compounds that has the largest content in A. alba leaves is Phytol compound with a value of 71.4% of the total NSL. Phytol compounds are also present in the NSL fraction of the Bruguiera gymnoriza species, Rhizophora stylosa, Kendelia candel, Lumnitzera recamosa alba. Based on Japanese Okinawa mangrove research, phytol compounds are derivatives of

chlorophyll present in the NSL fraction of all species, phytol compounds also play a role in reducing the effects of hypertension (the effect of lowering blood pressure) on cat test animals which are assumed to be the same blood pressure as human blood pressure.

CONCLUSION

Based on the results of the study, it can be concluded that the Dragon Tail Leaf (Rhaphidophora Pinnata (L.f) Schoot) contains Phytol compound with a concentration of 27.64%. Used in the synthesis of vitamin E and K, treating hypertension, and also functions as an antioxidant.

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