

DOI:
10.22301/IJHMCR.2528-3189.1093

Article can be accessed online on:
<http://www.ijhmcr.com>

ORIGINAL ARTICLE

INTERNATIONAL JOURNAL
OF HEALTH MEDICINE AND
CURRENT RESEARCH

IDENTIFICATION OF CYLOTETRACOSANE COMPOUNDS METANOL EXTRACT OF MARINE GOLOBE FRUIT (*Etlingera alba* (Blume) A.D Pulse)

Nova Mapanawang^{1,2*}, Arend L. Mapanawang^{1,2}, Melista Doori², Douglas Pareta^{1,3}

¹ Medika Mandiri Foundation, North Halmahera, North Moluccas, Indonesia.

² Sekolah Tinggi Ilmu Kesehatan (STIKES) Halmahera Study Program S1 Nurses.

³ Sekolah Tinggi Ilmu Kesehatan (STIKES) Halmahera Study Program D3 Pharmacy.

ARTICLE INFO

Article History:

Received 17th Sep, 2018
Received in revised form
18th Oct, 2018
Accepted 19th Nov, 2018
Published online 31th December,
2018

Key words:

*Anthropometric Indices,
Dyslipidemia, Incidence, Cohort
Study, Iran.*

*Correspondence to Author:

Nova Mapanawang
Sekolah Tinggi Ilmu Kesehatan
(STIKES) Halmahera Study
Program S1 Nurses

E-mail:

nova.mapanawang@gmail.com

ABSTRACT

Treatment efforts with traditional medicines are one form of community participation and at the same time are appropriate simple technologies that have the potential to support health development. This is caused partly because traditional medicine has been used by the community since time immemorial. Traditional medicine, besides being very beneficial to health, also has no harmful side effects because it can be digested by the body. Research Objectives: Aims to determine the identification of Cyclotetracosane compounds in Golobe marbles fruit methanol extract (*Etlingera alba* (Blume) A.D Poulsen). Type of Research: An Experimental Research. Where Golobe Fruit is Marbles (*Etlingera alba* (Blume) A.D Poulsen) is taken in the morning washed and then dried after being crushed dry so that it becomes powder. The powder was macerated with methanol solvent and then evaporated and obtained by Golobe Fruit Thick Methanol Extract. Furthermore, the thick extract of Golobe Fruit Methanol was tested using GC- MS (Gass Chromatography Mass Spectrometry).

The results of the study: The results showed that Golobe fruit marbles (*Etlingera alba* (Blume) A.D Poulsen) contained Cyclotetracosane compounds of 1.68%. Conclusion: Based on the results of the study using GC-MS that Cyclotetracosane compounds contained in Golobe Fruit Extract function as antioxidants and antifungals.

Copyright © 2018, **Nova Mapanawang**. This is an open access article distributed under the creative commons attribution License, which permits unrestricted use, distribution, and reproduction in any medium, provided the original work is properly cited.

Citation: Nova Mapanawang^{1,2*}, Arend L. Mapanawang^{1,2}, Melista Doori², Douglas Pareta^{1,2}, 2018 "Identification Of Cyclotetracosane Compounds Metanol Extract Of Marine Golobe Fruit (*Etlingera Alba* (Blume) A.D Pulse)", *International Journal of Health Medicine and Current Research*, 3, (04), 1093-1097.

INTRODUCTION

Treatment efforts with traditional medicine is one form of community participation and at the same time is the right simple technology that has the potential to support health development. This is due, among other things, because traditional medicine has been used by the community since a long time ago and the ingredients are widely available throughout the country. In order to increase and equalize public services, traditional medicines need to be used as well as possible. Traditional medicine, besides being very beneficial to health, also has no harmful side effects because it is usually digested by the body. Therefore, many companies are processing modified traditional medicines such as capsules, powders, liquids and tablets Herbal plants are medicinal plants that can be used for traditional medicine for diseases. Since ancient times, medicinal herbs have been used by the community. Traditional treatment of the disease uses ingredients with basic ingredients of plants and everything that is in nature. Until now, it was in great demand by the public because usually the ingredients can be found easily in the surrounding environment Through the development of science and sophisticated technology, humans can manage plants so that they produce medicines that are very beneficial for human health. It can be said as a change in sustainable management, management that used to be traditional now can be managed by using sophisticated tools survey of knowledge of medicinal plants practiced by local people is still needed, especially with regard to efforts to overcome several diseases in the world. The use of traditional medicine in Asia continues to increase even though there are many available and circulating chemical drugs.³

Much has been produced from a laboratory study of natural ingredients, which turns out and can cure a disease. Golobe Halmahera marbles are the center of attention of several researchers because of their antibacterial and antioxidant activity. Antioxidants are compounds that can free radicals in the body.

Golobe Halmahera plants have more than one type, Golobe milk and Golobe marbles. Golobe milk has been researched in many leaves, fruit and stems by researchers. Therefore, researchers are interested in conducting research on Golobe marbles fruit extract.

Problem Formulation

Based on the background, the problem can be formulated: Are Cyclotetracosane Compounds Contained in Golobe Fruit Marbles Methanol Extract (Etlingera alba (Blume) A.D Poulsen)?

Research Objectives

The aim to be achieved in this study was to determine the identification of Cyclotetracosane compounds in Golobe marbles fruit methanol extract (Etlingera alba (Blume) A.D Poulsen).

Research Benefits

The results of this study can be useful in:

1. Theoretical

Become a study material and provide information about Golobe fruit Marbles for further analysis in the field of Pharmacy.

2. Empirical

Community

Providing information and knowledge about traditional medicines to be consumed naturally to cure diseases.

Researcher

Gain knowledge and insight on the identification of Cyclotetracosane compounds in Golobe Fruit Marbles Methanol Extract (Etlingera alba (Blume) A.D Poulsen).

METHODS

Type of Research

The type of research used in this research is laboratory experimental research.

Time and Place of Research

This research was conducted from May to July 2018 at the Laboratory of Pharmacy Study Program at the Halmahera Health Sciences College.

Tools and Materials

- a. Tool

The tools that will be used in this research include: Analytical Scales, Ovens, Blenders, Glass Jars, Sieves, Stirring Rods, Filter Paper, Aluminum foil, Erlenmeyer, Beaker Glasses, Measuring Cups, Drop Pipettes, GC- MS Tools, and Rotary Evaporators .

- b. Material

The materials used in this study are:

- Golobe Fruit Marbles Taken From Tobe Village South Tobelo.
- Solvent Methanol

Taken directly by hand. Then cleaned or washed with running water, cut Golobe Fruit Marbles using a knife, then dried after drying and then crushed using a mortar until it becomes a coarse powder and blended, then the results of the blender sieved with a sieve to get a fine powder, then weighed again and put in a container and labeled.¹⁵

Samples of 100 grams were macerated with methanol for 5 x 24 hours or for 5 days. The first step, enter the Golobe Fruit powder Smooth marbles in a maceration vessel and then pour methanol until all the powder is submerged, then close the maceration vessel and leave for 5 days in a place protected from light while stirring every day, after 5 days then filtering using paper strain, separate filtrate and residue, then filter. Then it was evaporated with a rotary evaporator until it was obtained a thick extract of Golobe Marbles Fruit.¹⁶

- How it works Identification of compounds contained in Golobe marbles fruit extract (Etlingera Alba (Blume) A.D. Poulsen) with the GC- MS method

The working principle of GC-MS is a sample in the form of a liquid injected into the injector then

evaporated. Vapor-shaped samples are carried by the carrier gas to the column for the separation process. After being separated, each component will go through the ionizing chamber and be bombarded by electrons so that ionization occurs.

c. Work Procedures

a) Making of Golobe Fruit Extract Marbles

Golobe Fruit Marbles (Etlingera alba (Blume) A.D. Poulsen) taken from Tobe Village, South Tobelo District, North Halmahera Regency. Golobe Fruit Marbles detector and mass spectrum produced.¹⁷

The thick methanol extract is fractionated in a Chemical Glass, then evaporated by using a GC device that serves to test the purity of certain ingredients, or separate various components from the mixture and can help in identifying complex compounds. Then proceed by using an MS device that functions to convert a sample compound into positive ions and negative ions produced from plant sources.¹⁸

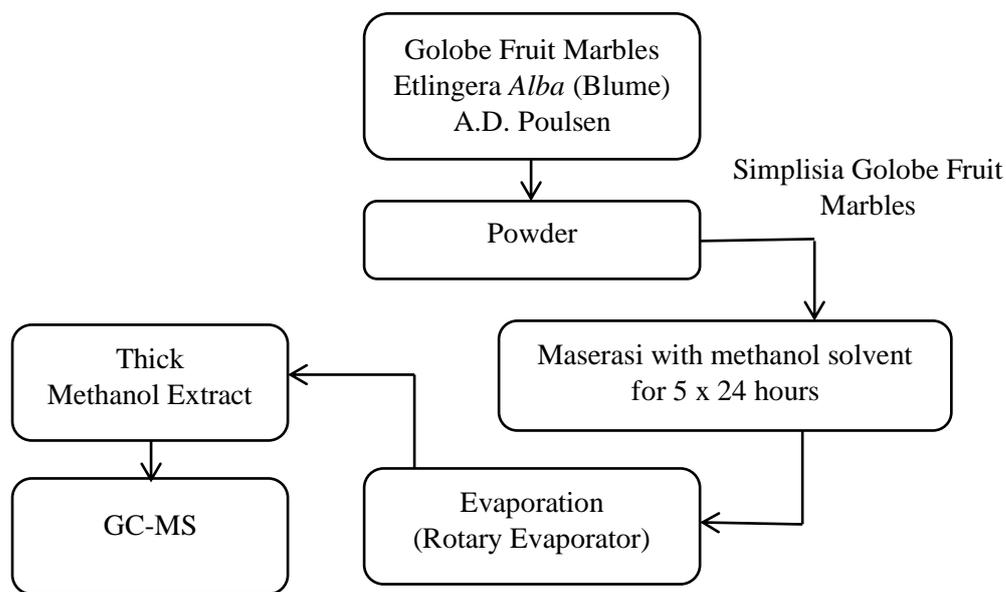


Figure 1. Framework of Golobe Fruit Methanol Extract, Marbles Using GC-MS Golobe Fruit Marbles Etlingera Powder.

RESULTS

In this study a sample of Golobe Marbles (Etlingera alba (Blume) A.D Poulsen) was best used for treatment because it contains more compounds. Golobe Fruit This marble comes from Tobe Village, South Tobelo District. This Golobe fruit is picked directly by hand using a knife. Each was washed with running water, then dried for seven days with sunlight from 7 to

10 am. After that Golobe Fruit marbles in a blender, after being bended in sift until you get a fine powder. The fine powder weighed 100 grams then macerated with methanol solvent for 5 x 24 hours in a glass container until all the powder was submerged. Once obtained filtered using filter paper then methanol extract of Golobe fruit Marbles are applied using a rotary evaporator to get thick Golobe fruit extract as much as 5 grams of marbles, Golobe fruit thick extract Marbles are

added to the Gc-Ms tool to see whether the fruit of golobe marbles contain Cyclotetracosane compounds found in Golobe Fruit Marbles. The following is the result of the identification of the compound Cyclotetracosane Fruit Extract of Marbles.

Table 1. Test Results of Gc-Ms Golobe Fruit Marbles (*Etlingera alba* (Blume) A.D Poulsen).

Compound (1)	Content (%) (2)
<i>2,4-pentanediol</i>	1,39
<i>Carycphyllene</i>	1,39
<i>Metboxyeugcnol</i>	15,32
<i>2-pentanone, 1-(2,4,6-trihydrxypbenyl)</i>	6,22
<i>Hexadecanoic acid, ethyl ester</i>	4,02
<i>Hexadecanoic acid</i>	22,45
<i>Ethyl 9-octadecanoate</i>	1,18
<i>2-4 dimethyl-6-phenylpyridine</i>	1,38
<i>2-4 dimethyl-6-phenylpyridine</i>	1,39
<i>9,12-octadecadienoieacid (z,z)</i>	21,77
<i>Heptadecane</i>	3,02
<i>9-trieosene, (z)-</i>	1,50
<i>Henicosylformate</i>	1,99
<i>Cyclotetracosane</i>	3,76
<i>Gamma - sitosterol</i>	5,20
<i>Stigmast-4-en-3-one</i>	1,68

DISCUSSION

Honje / kecombrang are reddish in color like banana-pisangan ornamental plants or very similar to galangal / laos. If the stem is old, the shape of the plant looks like ginger, reaching 5 m high. The rods are all rounded in shape, enlarged in the base; grow upright and many, close together, form a rare clump, come out of the rhizome that spreads underground. The rhizome is thick, creamy, reddish when young. Kecombrang

(*Etlingera alba* (Blume) A.D Poulsen.) Or in the designation of the Halmahera Golobe community is one type of plant originating from the Zingiberaceae family that has the potential as a natural termiticide. Zingiberaceae is a family of herbaceous and flavorful herbs found in tropical Asia and consists of 50 genera including 1,300 plant species. The biggest antioxidant is found in fruits of the Zingiberaceae family. Kecombrang is a type of spice that has long been known and used by humans as medicines related to its properties, namely as a deodorizer and bad breath. The need for new antioxidant (anticancer) bioactive compounds is needed to overcome resistant microorganisms and cancer. A new bioactive compound can be obtained by biotransformation, Making semisynthetic bioactive compounds or looking for new bioactive compounds from microbes in nature. A number of more than 2200 indigenous actinomycetes have been isolated from various soil and litter samples from various places in Indonesia in previous studies. have antioxidants. The production of these compounds was carried out on liquid production medium.

Identification of Gc-Ms compound, Golobe fruit extract Marbles showed that the extract contained 3.76% cyclotetracosane compounds. The cyclotetracosane compound functions as an antioxidant.

CONCLUSION

Based on the results of the study it can be concluded that the Golobe Fruit extract contains Cyclotetracosane (3.76%) which has the potential as an antioxidant.

Suggestion

1. Based on the results of the research, it is necessary to conduct further research on the methanol extract of Golobe marbles to determine its biological activity.
2. So that the community can manage the Golobe Fruit Marbles into herbal medicines.
3. The results of this study can be a reference for pharmaceutical students to increase knowledge about medicinal plants.

REFERENCES

1. Suparmi, & Wulandari, A. Herbal Nusantara 1001 Original Indonesian Traditional Herbs. Yogyakarta: Andi Offset. 2012
2. Mapanawang Arend. Research in the field of

- health. Medika Mandiri Halmahera. 2016
3. Jenie UA. Natural Material Development and Intellectual Property Rights for Drugs, Cosmetics and Nutrition. National Seminar on Natural Material Potential (POBA), Bandung, August 21, 2014.
 4. Astirin OP. The Role of Cell Structure and Function in Supporting the Development of Natural Materials into Herbal Medicines. Ridwan et.al. (Eds.) Producing National Seminar on Biodiversity. 2014; 3 (1): 5-13
 5. Elim H.I and Mapanawang Arend. Electronics Physical System of Large Antioxidant Structure in Herbal Medicine based Zingiberaceae Fruit: Understanding and Application. Int J Nano Res Appl. 2018; 1 (1): 1-4.
 6. Ismail, Mapanawang A, Nurwahida A, Budiadji A. Identification of Heptacosane Contained In Golobe Extract (*Hornstedtia Alliacea*). International Journal of Health Medicine and Current Research. 2016; 1 (02): 191.
 7. Indonesian Ministry of Health. Ministry of Health strategic plan for 2015-2019. Jakarta: Secretariat General of the Ministry of Health; 2015.
 8. Saifudin A, Secondary Natural Metabolite Compounds Theory, Concepts, and Purification Techniques. Ed. 1, YogyakartaCet. 1, Deepublish. 2014.
 9. Mukhriani, aksi Extraction, Separation of Compounds and Identification of Active Compounds 'Journal of Health. UIN Alauddin Makassar. 2014; 7 (2): 362-363.
 10. Kumar S., and A.K. Pandey. Chemistry and Biological Activities of Flavonoids: An Overview 'The Scientific World Journal, 2013; Vol 2 (4): 400-407.
 11. Wikanda S P, Kitab Herbal Nusantara. Yogyakarta, Kata Hati: 2015.
 12. Sineke et al. Determination of Phenolic Content and Sun Protection Factor (Spf) from Ethanol Extracts from Several Corn Cob (*Zea Mays L.*). PHARMACON Pharmaceutical Scientific Journal --UNSRAT. 2016; 5 (1).
 13. Effendi, S. Food Processing and Preservation Technology. Alfabeta.Bandung 2012.
 14. Mapanawang Arend, Ripka Parang, Ismail, Ama Tualeka, Averous F. Budiadji, Nasir Muh, Bernard T. Fambrene, Fahri Syahputra, Alfian Daud Identification of Trans Caryophyllene Included In Golobe Extract (*Hornstedtia Zingiberaceae*) DOI: 10.22301 / IJHMCR. 2528-3189.75, September, 2016 Vol. 1, Issue 01, pp.75-78.
 15. Tukiran, Suyatno, and Nurul Hidayati, Phytochemical Screening on several extracts from bougainvillea (*bougainvillea glabra*), hibiscus (*hibiscus rosa- sinensis l.*), And purple leaves (*graptophyllum pictum griff*). Proceedings of the National Chemistry Seminar. September 20. Surabaya State University: 235-244. 2014. Accessed 1 Mey 2018.
 16. Bahti H H, Gas Chromatography Theory and Its Application, Bandung First Mold. Alfabeta, 2013; P. 74-80.
 17. Thomas Royal Botanic Tp, Thomas Ds, Ananda R Gc-Ms Analyze Of Phytochemici Compounds Of Nerves Aragoana Gaund aragoana. Salty Journal Of Pharmaceutical And Clinical Researca. 2013; 6, Sumpul 3: 68- 72.
 18. Mukhriani, aksi Extraction, Separation of Compounds and Identification of Active Compounds 'Journal of Health. UIN Alauddin Makassar, 2014; 7 (2): 362-363.
