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## IDENTIFICATION OF THE COMPOSED COMPONENTS EXTRACT METHANOL LEAF KUGETE (*MERREMIA PELTATA*) SCIENTIFIC PAPERS IN THE TUNUO VILLAGE OF NORTH KAO NORTH HALMAHERA

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### ABSTRACT

Leaves Kugete (*Merremia peltata*) is a type of plants that exist in Indonesian are used as herbal ingredients. People take advantage of plants Kugete (*merremia peltata*) as an anti-cancer drugs, especially breast cancer by drinking boiled water. This study was conducted to identify the compounds contained in kugete leaf. This research is a pure experimental research conducted in laboratory of Pharmacy STIKES halmahera by using maseration method as a separator with methanol solvent as a liquid of the dancers and Gass Cromothography Mass Spectrometry method is used to identification the compound contained in kugete leaf methanol extract (*Merremia peltata*). The results showed that kugete (*merremia peltata*) contained compounds (9E, 12E) - 9,12-octadecadieonic acid 10,84%.

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### INTRODUCTION

The utilization of plants as medicine materials had been done since long time ago by the societies in Indonesia. By variety of ethnics, so the utilization of plants as medicine was also varied. <sup>1</sup> The utilization of medicine plants as the basic material of medicine was based on the knowledge that commonly descended gradually and only mastered by certain people. Traditional treatment or herbal treatment was more believed because it save for our body and

minimized the side effects occurred. Furthermore, from the economy side, its much cheaper than general medicines that marketed, moreover if it was found by planting or found it at around the yard of forest. Traditional medicine plants in Indonesia had important role mainly for the societies at the villages which its health facilities were limited.<sup>2</sup>

Knowledge of medicine plants that practiced by the local societies was still needed mainly related with effort to solve some diseases in the world. The using of herbal medicine to solve the disease was also increasing. According to WHO, there was about 65% of developed countries and 80% of developing countries had used herbal medicine. Likewise the using of traditional medicine in Asia, it was increasing although there were many chemical medicines was available or circulated. Any world convention such as CBD (Convention on Biological Diversity), recognized traditional knowledge owned by local societies. Therefore, it needed to document and protect the knowledge owned by the societies immediately. The societies of Tobelo was traditional society which was depended on the forest in fulfilling their daily needs, included for the treatment purpose and it wasn't much known yet.<sup>3</sup> It could be concluded that it was very important for a group to do something of experiment.<sup>4</sup>

Traditionally, merremia peltata leave (L.) Merr., had been used by the society of North Maluku as anti cancer especially breast cancer by drinking its decoction. This leave was also used for threatening the injure and gummy, mainly at the nodus limafatis by sticking the smooth leave at the surface of injured. Beside, the gum of this plant also could be used to treat breathless and asthma indication.<sup>5</sup> Meremia was climber plants from pacific area. *M.peltata* was commonly dominated open area and degradation forest ecosystem.<sup>6</sup>

Based on the research result that conducted by identifying compound of *merremia peltata (L.) merr* plant, it found that kutege leave *merremia peltata (L.) merr* contained Alkaloid, steroid, flafonoid, and tannin compounds.<sup>7</sup>

## METHODS

### Type Of Research

The research would be conducted at Integrated Laboratory of Pharmacy Study Program of Health Science High School (STIKES) Halmahera. Experiment research was research that gave widely freedom of research to do modification/intervention toward certain variable at the controlled condition.<sup>1</sup>

### Time Of Research

The research was conducted in 1 month started in June until July 2017.

### Sample Of Research

The sample of this research was fresh Kugete Plant (*Merremia peltata (L.) merr*) taken from North Halmahera Regency, North Kao Sub district, Tunuo Village.

### EQUIPMENTS:

- Oven
- Spatula
- Chemical glass
- Bunsen
- Erlenmeyer
- Rotavapor
- GC-MS tool
- Measurement glass
- Aluminum foil.

### MATERIALS:

- Kugete leave (*Merremia peltata (L.) Merr*)
- Methanol
- Sprit

### WORK PROCESS

#### Making of kugete leave (*Merremia peltata (L.) merr*) extract

Kugete leave (*Merremia peltata (L.) merr*) taken from Tanuo village of North Kao Sub District of North Halmahera regency for about 2 kg. Kugeta leave (*Merremia peltata (L.) merr*) taken was the fresh one and taken from the top to the 6<sup>th</sup> leaves. Then the samples were washed at the flow water, weighed then dried under the sun directly at 7-10 a.m. every day until the samples were really dry. After that, kugeta (*Merremia peltata (L.) mer*) was weighed and powdered by using blender, then the powdered got was riddled by using riddle mess, after that it was weighed again then put into the package and labeled.

The sample of 300 gram was extracted by using maserasi method, where the smooth kugete (*Merremia peltata*) was put into maserasi container then mixed the methanol, covered it and let it during 5 days at the place that kept from the sun directly while stirred it every day, after 5 days, it was done filtering by separating the residue filtrate and was being maserasi again for 2 days while stirred it every day. After 2 days, it was done filtering again and the residue was wasted. Then the

filtrate was kept and evaporated with rotary evaporator until getting the thick extract.

**Ways of Working to Identify Nonadecade Compound by Using GC-MS tool.**

- a. Kugete leave (*Merremia peltata (L.) merr*) taken from Tanuo village of North Kao Sub District of North Halmahera regency for about 2 kg. Kugeta leave (*Merremia peltata (L.) merr*) taken was the fresh one and taken from the top to the 6<sup>th</sup> leaves. Then the samples were washed at the flow water, weighed then dried under the sun directly at 7-10 a.m. every day until the samples were really dry. After that, kugeta (*Merremia peltata (L.) mer*) was weighed and powdered by using blender, then the powdered got was riddled by using riddle mess, after that it was weighed again then put into the package and labeled.
- b. The sample of 300 gram was extracted by using maserasi method, where the smooth kugete (*Merremia peltata*) was put into maserasi container then mixed the methanol, covered it and let it during 5 days at the place that kept from the sun directly while stirred it every day, after 5 days, it was done filtering by separating the residue filtrate and was being maserasi again for 2 days while stirred it every day. After 2

days, it was done filtering again and the residue was wasted. Then the filtrate was kept and evaporated with rotary evaporator until getting the thick extract.

**RESULTS**

This research done in the village of tunuo kao sub-district north Counties North Halmahera in June - July 2017 kugete leaf (*Merremia peltata (L) merr*) in take on the morning of the day of the leaf is easy that is still fresh and then washed in water flow and then weighed and dried in the sun on the hour 7-10 morning every day until the sample is completely dry. After dry samples weighed back then made into powder using a blender pollen obtained sieving with the sieve mess weighed after that dimaserasi with liquid methanol time used for 5 days.

Then the sample dimaserasi or soaked with liquid Methanol is filtered and taken to extract methanol leaves kugete (*merremia peltata (L) merr*) with berwarana brownish as steep losses on was done steaming process. The evaporation lasted for 3 hours from the results of the evaporation then acquired kan extracting thick.

**Table 1.** The Test Results Table Leaf Gc-Ms Kugete (*Merremia peltata (L) merr*).

Samples	Compound	The womb %
The leaf KUGETE	Neophytadiene	9.82
	5 The Icosene	2.53
	Isophytol	1.60
	The Hexadecaneic acid-ethyl Esther	1.59
	Hexadecaneic acid	5,24
	Oleyl alcohol	2,48
	L-Heptadecene	5,64
	Phytol	7,99
	Ethyl-(9Z,12Z)-9,12 Octadecadeonic	1.35
	The Octadecatrieonic 9,12,15 acid ethyl Esther	1.93
	(9E,12E)-9,12-Octadecadieonic acid	10.84
	9 Of Tricosene	1.04
	All-trans-sqalene	2.23
	Heneicosane	2.02

Samples	Compound	The womb %
The leaf KUGETE	The Octyl Heptadecane, 9	9.82
	Vitamin E	2.08
	The decyl Henecicosane, 11	1.26
	Octacosane	1.63
	Beta-Dihydrofusosterol	5.59
	Olean-12-En--OL	2.20 hkd
	Alpha-amyrin	2.60 hkd
	Friedelin	3,78
	4,4A,6B,8A,B,11,11,1214A-	2.33
	L-Eicosahydro-Picen	
Octhametyl-3One		

## DISCUSSION

The Leaf Kugete (*Merremia Peltata (L) merr*) is a kind of plant vines that grow in the open area and also has a tendency to grow on the edge of the river or in the place that many of the water content that is usually used by the community as a herbal medicine. The Leaf Kugete (*Merremia Peltata (L) merr*) contains compounds (9E,12E)-9,12-Octadecadieonic acid. The compound is a combination of some of the elements that is shaped through chemical reaction compounds have different properties- varies with the elements - elements of nurse. For example 2 atoms hydrogen with 1 oxygen atom can be joined to form the water molecules (H<sub>2</sub>O). Compound (9E,12E)-9,12-Octadecadieonic acid is the fatty acid unsaturated fats in the plant. And that is done in the fatty acid biosynthesis of prostaglandins and cell membrane. Based on the classification of boredom namely fatty acid saturated not many ties the phrase (PUFA, polyunsaturated fatty acids) fatty acid unsaturated fats is ketidakjenuhan pattern is the nature of the natural fatty acid. PUFA grouped in some rounded up or Linoleic the family Then the chemical nature of the likeness of the coffee beans oil chemical nature of the land of fatty acid total on the coffee oils identified by gas Kromotografi namely compound 9.12-Octadecadieonic acid and have Linoleic fatty acid.

## CONCLUSION

Based on the results of research by using methods gc-Ms (Gass Cromotografifi Mass Spectrometri) so it can be concluded that the leaf Kugete (*Merremia peltata (L) merr*) contains compounds (9E,12E)-9,12-Octadecadieoni acid (10.84%).

## Suggestions

Based on the conclusion above, researchers suggested as follows:

1. For Educational Institutions

The results of this research can be an additional reference for students of Pharmacy to increase the knowledge about the plants as herbal medicine plants.

2. For Research Location

So that the results of this research can be input for the community to know the plants and capable herbal medicine as treatment of disease.

3. For the next researcher

The results of this research in order to become the material inputs as a reference in developing the research about the importance of knowing herbal medicine plants and be able to take advantage of as the treatment of disease.

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## REFERENCES

1. Aisyah H. Utilization of special useful medicine plants by the societies around the conservation of simpang mountain, west java. PROS SEM NAS MASY BIODIV INDON.2015, Vol: 1 (6)1425-1432, Doi 10.13057.
2. Diah I., Dwi A, dan J. Kinho. Diversity of special useful medicine plants at the forest of pantai cagar alamtangkokko. *Journal WAISAN*. 2015, Vol: 2 (1): 1-8.

3. Siti Susriati., M. Rahayu, dan M. F. Royyani. Knowledge and utilization of medical plants by Tobelo societies in north Maluku. *Media litbangkes*. 2015, Vol: 25 (4) 211-218.
4. Siti S.,A. L. Mapanawang, A. F. Budiadji, S. Badoa, dan R. Cabu. Effect of gedy leaf decoction to decrease uric acid level in patients with gout arthritis. *International jurnal of health medicine and curren research (IJHMCR)*, 2016, Vol: 1 (2): 194-200, Doi 10.22301.
5. Yohanes A.,Rustini, dan R. Honesty. Activities of Anti Bacteria of Aktifitas Aka Lambung Leave Fraction. *Jurnal Farmasi indonesia*. 2012, Vol: 6 (2) 115-121.
6. Yansen., Wiryono, Deselina, Muhamad F, Hidayat, DKK. The Ekspansion Of *Merremia peltata (L)*. Merril In Fragmented Forest Of Bukit Barisan Selatan National Park Enhanced By Its Ecophysiological Attributes . *BIOTROPIA*. 20154, Vol: 22 (1): 25-32, Doi 10.11598.
7. Lis N., S. Tabbu dan H. S. Mokodompit. Local wisdom in utilizing medicine plants by societies around national park of aketajawe lolobata, North Maluku Province. *Journal of Research of Forest Social and Economy*. 2015, Vol: 12 (3) 163-175.
8. Yuke M. Karakter Fisiologi *merremia peltata (L.) merr* Origin of national park of bukit barisan selatan lampung. KTI Sekolah Pascasarjana Institusi Pertanian Bogor. 2014.
9. Ruslin., Sahidin I. Identification and determination of traditional medicine plants of south Sulawesi Societies at arboretum prof. Mahmud Hamundu Universitas Haluoleo. *Majalah farmasi indonesia*. 2008, Vol: 19 (2): 101-107.
10. Yohanes A., Suharti dan R. Selawati. Effect Test of anti cancer of “Aka Lambung” leave (*Merremia peltata (L.) merr*) at mencit putih jantan by the method of *micronucleus assay*. *Journal of science and technology Pharmacy*. 2009, Vol: 14 (1) 1410-0177.
11. Tukiran., Suyanto, dan Hidayati. Fitokimia screening at some extracts from bugenvil (*bugainvillea glabra*), sepatu flower (*Hibicus rosa-sinensis L*), and ungu leave (*Graptophyllum pictum Griff.*) Jurusan Kimia FMIPA Universitas Negri Surabaya. 2014, 235-244.
12. Kaerasa G. E. Identification of Octadecanoic acid compound contained in Gedu extract (*Abelmoschus Manihot*), KTI Sekolah Tinggi Ilmu Kesehatan Halmahera. Tobelo 2016, 14-18.
13. Bahti H.H., chromatography Gas Theory and its application. First Edition. ALFABETA. Bandung 2013, 74-80.
14. Mapanawang A. L. *Research at Health Field*. Yayasan Medika Mandiri. Tobelo. 2016.

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