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ORIGINAL ARTICLE

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**IDENTIFICATION OF TRANS CARYOPHYLLENE INCLUDED
IN GOLOBE EXTRACT (*Hornstedtia Zingiberaceae*)**

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ABSTRACT

The disease in a human body is caused by some factors, one of them is free radical. Free radical is a radical based on oxygen or nitrogen with single electron which generally produced in the human body when the metabolism process is going on.

Some early researches had been proving some plans such as the bark of kecap stem (*Sandorichum koejape*), are containing *Trans caryophyllines* as anti-fungi. The aim of this research was to identify the content of *Trans caryophyllines* in Golobe fruit which has function as anti fungi

The research was done to find out *Trans caryophyllines* which contained in Golobe extract (*Hornstedtia alliacea*). The research was experiment research which was done in the integrated Laboratory of Pharmacy Department of STIKES Halmahera.

The identification of *Trans caryophylline* by using chromatography combination method, that is Gas Chromatography Mass Spectrofotometri (GCMS). From the identification of golobe fruit (*Hornstedtia alliacea*), it was obtained that Golobe contains anti oxidant with concentration of 6,54 mg/ml. Then, it was done activity test toward the *Trans caryophyllene* by using Gas Chromatography-Mass Specromry (GCMS). The research result showed that metanol extract of golobe contains *Trans caryophyllene*.

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INTRODUCTION

The jump of syntetic medicine price and it's side effect for health increased the using of traditional medicine by benefitting the natural resources around them. As the early step, which helped to find out that a plant has special benefit as medicine, was from the traditional people from generation to generation temurun (Dharma, 2001).

Natural anti oxydant such as fenolic or syntetic could impede pipit oxidation, prevent the damage of organic component change in foodstuff so that could longer the saving age. (Rohdiana,2001).

Indonesia has more than 30.000 kinds plants which 960 species of them had been registered as plants with special benefit, and 283 kinds of them werw important plants for industry of traditional medicine (Kusuma dan Zaky 2005).

The disease in a human body is caused by some factors, one of them is free radical. Free radical is a radical based on oxygen or nitrogen with single electron which generally produced in the human body when the metabolism process is going on. Over loaded Free radical could cause degenerative disease, diabetes, coroner hearth, and cancer (Winarisi,2011). Free radical could be found at the environment, some metals such as iron, copper, smoke, medicine, wrapped food, educative material, etc.

The biological variety in Indonesia were very great and could be benefitted maximally, especially in developing the potential of natural resources. Biological resources such as plant in the form of extract, generally was used in the medicine and industry. One of the plant extract which was most used in medicine and industry was *temu kunci* plant (*Boesenbergia pandurata*).

Traditional medicine, especially herbal medicine, was effective enough to treat many diseases. Traditional treatment was generally valued safer than modern medicine. This was caused traditional medicine had side effect which was relative lower than modern medicine (Mangan,2013).

Based on research result done by L.Mapanawang, et al (2016), by identification of

anti oxidant in Golobe fruit (*Hornstedtia alliacea*), it was obtained that Golobe contains antioxidant with the concentration of 6,56 mg/ml.

Trans caryophyllene compound was not only contained in golobe fruit, but there was also contained in other plants such as the bark of *kecapi's* stem (*Sandoricum koejape*).

Based on the research result done by Ni Lu Putu Putri Setianingsi, et al (2013), with the experiment of atsiri oil, tengulun leaf (*Protium javanicum burn f*) contained *Trans caryophyllene* (30,02%) which potentially as anticancer. This was supported by the research done by lequalt j (2007).

Based on the research result done by Warisna. Dkk (2011), by identification of anti fungi from the bark of *kecapi's* stem (*Sandoricum koejape*), it was obtained that the bark of *kecapi's* stem (*Sandoricum koejape*) contained *Trans caryophyllene* (15,10%) which potentially as anti fungi.

From the background of the study, the writer was interested to do identification of *Trans caryophyllene* in buah Golobe (*Hornstedtia alliacea*).

RESEARCH METHOD

Sample of this research was fresh Golobe Fruit (*Hornstedtia alliacea*) which picked from Gayok Village Malifut Subdistrict.

TOOLS AND MATERIALS

A. TOOLS

1. Oven
2. Stirring spoon
3. Chemical glass
4. Bunsen
5. Erlenmeyer
6. Rotavapor
7. GC-MS tools
8. Measuring glass
9. Three ports
10. Aluminium foil

B. MATERIALS:

1. Golobe Extract (*Hornstedtia alliacea*)
2. Metanol
3. Spirtus

WORK PROSEDURE

Making the Golobe Ectract (*Horsntedtia alliacea*)

The fresh Golobe (*Hornstedtia alliacea*) were taken, picked directly by using the hands. The Golobe (*Hornstedtia alliacea*) which have been collected from Gayok Village were sorted or washed by using flow water, then dried. The dried fruits were dry sorted and powdered. The gedi powder was extracted by the *maserasi* method and infundation. Firstly, 1000 gr golobe powder was proceed by *maserasi* with Metanol for about 3 X 24 hours in the glasses/stoples which had difference around 1 – 3 cm on the powder. Filtrat was gathered and then evaporated by rotavapor until produced the thick extract of Metanol.

The Procedure of Identification Trans Caryophyllene Hexadecanoic Acid by using GC-MS Tool

The thick extract of Metanol was fractionated in the Chemical Glass, continued with using GC tool which has the function to examine the purity of certain material, or separate any components for the mixture and could help in identifying the complex compound. Then, it was continued by using the MS tool which has the function to change the sample compound into positive and negative ions produced from the herbs.

RESULT AND DISCUSSION

The research was done in Gayok Village Malifut Subdistrict, North Halmahera Regency. Golobe was picked directly by using the hands. Then it was washed by using flow water, then dried for about three days under the sun. The dried Golobe was grinded by using mortar and blender until become the refined powder then it was filtered in order to get 1000 grams of Golobe powder.

In this research, the Golobe (*Hornstedtia alliacea*) was the best used in treatment/medicine because it contained more of compounds. GCMS Result (1.57%) in Figure 1, 2, and 3.

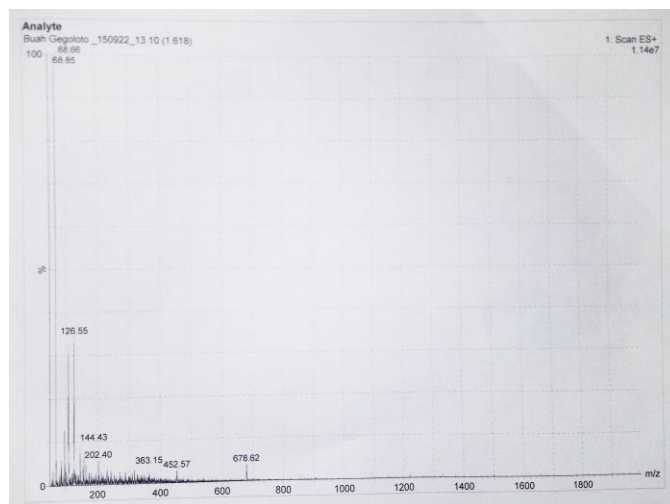


Figure 1. GCMS Grafik of Trans Caryophyllen

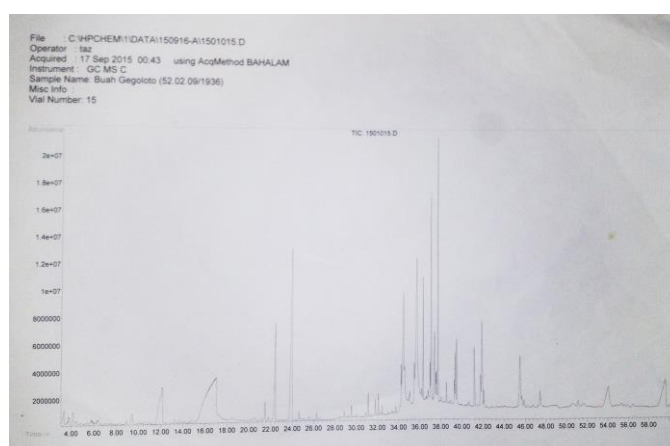


Figure 2. GCMS Grafik of Trans Caryophyllen in Golobe

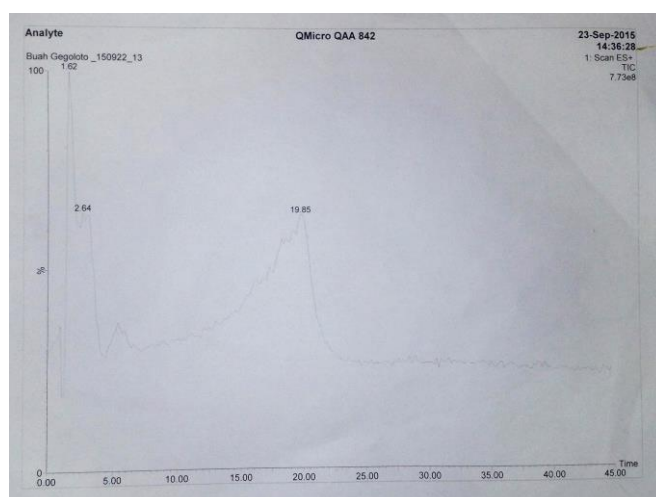


Figure 3. GCMS Grafik of Trans Caryophyllen in Golobe

DISCUSSION

1. Submerged with metanol

The golobe powder was proceed by maserasi with metanol for about 3x24 hours in the different glasses, for 1-3 cm up the powder. After being submerged, golobe (*Hornstedtia allacea*) was yellow on the first day, orange on the second day, and brown on the third day until the filtering process.

2. Do Evaporation

Metanol extract was obtained after the process of evaporation the thick extract, metanol extract was filtered in chemical glass then the liquid extract obtained. Then, the liquid extract was evaporated until the thick extract obtained. During the evaporation process of metanol extract, the color of Golobe was brown until boiling it was changed into dark brown. Then, thick extract was enetered into GCMS tool until it produced *Trans Caryophyllene* compound.

CONCLUSION

Based on the research result, it could be concluded that the extract of Golobe Halmahera had *Trans caryophyllene* compound. Golobe was kind of fruit which the best used as medicine baccuse it contained more of compounds. Metanol extract which was evaporated, produced liquid extract. The liquid extract was evaporated until produced thick extract.

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