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PHYTOCHEMICAL COMPOUND OF STEM BARK SOURSOP PLANT *(ANNONA MURICATA LINN)*

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ABSTRACT.

In Indonesia *Annona muricata* known as " sirsak" is one of species of Annona genus including Annonaceae mily that has long been used for treatment, *A. Muricata* leaves can be efficacious for the treatment of cancer, the eatment of diarrhea, anti-convulsive, anti-fungal and itchy. The purpose of this study was to isolate and rification of secondary metabolites from the stem bark of the *A. muricata* cloroform fraction. Through screening d isolation methods with coloumn chromatography techniques. Based on kualitative test result, white crystal tair ed was identified as an alkaloid.

ywo d: soursop, Annona muricata Linn , alkaloid

. Introduction

Indonesia known as country that s variety of plants, so that Indonesian ciety have known about plant that can ed as medicinal. Medicinal plant has been urce of human health since ancient time, hereas about 60 – 75% of world pulations require plant for carring health larvey, 2000). Of the thousands of species higher plants is still very little known emical content, whereas more than 25% prescription drugs that are used today ntain bioactive ingredients derived from gher plants (Tukiran, 1997). Development medicines of natural materials is very vantageous because tropical plants lieved to have the ability to manipulate a de variety of chemical compounds that ve a variety of interesting bioactivity. The lity of one of them caused by a self-defense mechanism against the environment, because in general these plants live under harsh environmental conditions both climatic factors and disorders of herbivores, insects and pests. Tropical plant can produce a natural chemical compounds that have the potential as pesticides, insecticides, antifungal and cytotoxic effect.

One family of plants that have the potential as a source of bioactive chemicals and a relatively large number is Annonaceae which consists of 20 genus with more than 40 species and genus of the family's primary is Annona. Besides this family showed insecticidal activity, anti-tumor and antifungal based on research of some species of the genus Annona, Polyalthia, Uvaria and Xylopia (Mahmiah, 2006). Luna *et.al.*(2006) reported that *A. muricata* leaves extract with polar solvent showed the toxicity to larvae

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of the brine shrimp Artemia salina with LC_{50} 0,49 μgmL^{-1}.

Ethanol extract of stembark from *A. muricata* has ability to inhibit the cytopathic effect of HSV-1 (Herves Simplex Virus- 1) on vero cells as indicative of anti anti-HVS-1 potential, also aqueous extract of *A. muricata* has potential as antidiabetic because the extract protected and preserved pancreatic β- cell integrity (Padma *et al.* 1998; Adewole *et al.* 2006). Two compound, murihexocin A and B were isolated from *A. muricata* leaves showed significant inhibitory effects for tumor cell with selectivities to the prostate (PC-3) and pancreatic (PACA- 2) cells (Zeng *et al.* 1995).

Based on the description above, the problems that can be formulated are secondary metabolites are contained in the bark of *Annona muricata* from chloroform extracts.

B. Methods

Plant material used in this study is the bark of the soursop (*A. muricata* Linn) were collected in March 2015 obtained from Pinrang South Sulawesi. Solvent for extraction and chromatography used p.a quality and technical distilled beforehand, i.e : n-hexane, chloroform, ethyl acetate, acetone and methanol. Vacuum column chromatography performed using a Si gel 60 Merck 7730, flash column chromatography on silica gel gel Merck 60 7734 (0.063 – 0.200 mm), silica gel Merck 60 7733 (0.2 – 0.5 mm) for impregnation, and thin layer chromatography analysis conducted by Si gel-coated plates Merck Kieselgel 60 F_{254} (0.2 – 0.5 mm). Cerium sulfate solution 1.5% in 2N sulfuric acid is used to reveal the stain.

The tools used in this study are: a set of distillation equipment, Buchner funnel, TLC chamber, a capillary tube, a tool for fractionation include vacuum column chromatography, press column chromatography and gravity column chromatography. Then some equipment such as: analytical balance, evaporator and means of determining the melting point is determined by the "melting point Kruss ".

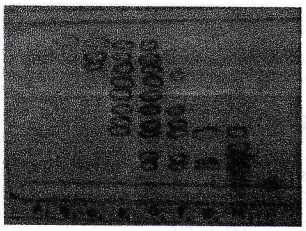
A total of 5 kg of dry weight of the bark of the soursop pulverized and then macerated with methanol for three times in 24 hours (until approx extract of secondary metabolites were all out). The brown maserate filtered using a Buchner funnel with Whatman paper and then evaporated using a rotary evaporator to obtain a methanol extract is then determined by weight. Furthermore, the methanol extract

as partitioned by means of liquid-liquid xtraction with n-hexane and cloroform. loroform fraction obtained were then actionated again with column hromatography with an appropriate eluent y TLC analysis, the same Rf value ombined then evaporated to dryness. urthermore isolates obtained is then urified by means of crystallization / ecrystallization to get a single stain on TLC st with a variety of eluent and measuring e melting point.

. Results and Discussion

xtraction and Isolation.

A total of 5 kg of dry weight of the bark of the soursop mashed then macerated with methanol for 3x24 hours. Maserat obtained was concentrated by using a rotary evaporator and the obtained methanol extracts as much as 453 grams. Extract total partitioned with Cloroform and the fraction obtained as much as 11,3 grams. Continuous cloroform fraction fractionated by vacuum column chromatography and obtained fractions identified by TLC, fraction that have same chromatogram combined and obtained nine major factions.



Picture 1. Chromatogram Fraction Results of VCC
Eluent Ethyl Acetate: n-hexane (2: 8)

The seventh fraction from the acuum column chromatography (VCC) 172,7 mg) further separated by flash olumn chromatography (FCC) with the ame eluent as above VCC process isolates btained white. Furthermore, the rystallization with acetone to obtain a white rystal weighing 5,4 mg with a melting point f 114°C. Based on the TLC test with ariations of three different eluent still earned a single spot thus concluded the compound is pure.

Qualitative analysis.

White crystal was obtained have qualitative analysis with meyer and wagner reagents. Based on the analysis with meyer reagent, shown there was white precipitate and analysis with wagner reagent obtained brown precipitate. The result of analysis indicated the compound was alkaloid.

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D. Conclusion.

Based on the results of the study obtained white crystals compound with a melting point of 114°C and base on qualitative analysis, the compound included in the alkaloid.

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