



POTENTIAL CYTOTOXIC PLANT EXTRACT OF SISIK NAGA ON T47D BREAST CANCER CELL

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INTRODUCTION

Cancer treatment intensive efforts have been made, but until now has not found a drug that can be satisfactorily overcome cancer. This is due to the low selectivity of anticancer drugs are used or because the pathogenesis of cancer itself is not yet clear.

Empirically leaves and herbaceous Sisik naga are used as a breast cancer drug (Heti, 2008). The results of studies that have been conducted show that the leaf extract Sisik Naga have cytotoxic effects on MCF-7 with IC₅₀ of 83,63µg / mL (Endrini, 2009). Dichloromethane extract are cytotoxic against MCF-7 with IC₅₀ 39, 28 (Wulandari et al, 2012). Cytotoxic activity leaves the possibility Sisik Naga due to the content of flavonoids, saponins, steroids, tannins (Widiyanti 2010) and terpenoids (Heti, 2008; IPTEK, 2012).

The quality of the raw materials need to be considered to standardize the raw materials used so that continuity in terms of safety, quality, and efficacy of raw materials can be guaranteed either. A lot of quality standards are uniform and repeated performed by characterizing the raw materials of traditional medicine. Characterization conducted with the aim to get character of raw materials and to maintain continuity of safety, quality and efficacy of good products quality.

MATERIALS & METHODS



RESULTS AND DISCUSSION

Plant extract Character test Sisik Naga.

No	Type of Testing	Dichloromethane Extract	Methanol Extract
1.	The ash content	0,91%	0,98%
2.	Acid insoluble ash content	0,78%	0,58%
3.	Levels of ethanol soluble	3,86%	5,81%
4.	Levels of water soluble	1,08%	5,27%
5.	Screening of chemical constituents	Flavonoids, phenol, essential oils,steroids	Flavonoids, phenol

Results of the determination of ash and acid insoluble ash content of all extracts meet the requirements, 0,91% (Depkes, 2008). Assay of the water soluble extract to determine the amount of chemical constituents that are dissolved in water in dichloromethane extract to 1,08% and 5,27% methanol extract. Water soluble chemical constituents describe their sugar content, phenolic compounds and water-soluble glycosides. Assay of alcohol soluble extract to determine the amount content of substances soluble in ethanol but may be insoluble in water. Dichloromethane extract amounted to 3,86% and 5,81% methanol extract. Levels of ethanol soluble extract ethanol provides an overview of essential oil, tannins, steroids, fats, polyphenols, and terpenoids are very hard sugar. Manufacture phytochemical screening test using TLC with UV detection of 254-365 nm and chemically with comparative pure compounds tested within this group shows dichloromethane extract and methanol extract containing flavonoids and phenols.

Cytotoxicity test of Sisik Naga

No	Sample	t47D IC ₅₀ (µg/mL)	Vero IC ₅₀ (µg/mL)
1.	Dichloromethane extract	745,93	8.035,63
2.	Methanol extract	8.277,27	8.256,58
3.	Tamoxifen	181,26	-

Description : - = No testing

IC₅₀ ≤ 20 µg/mL strong cytotoxic

IC₅₀ 21-200 µg/mL moderate Cytotoxic

IC₅₀ 201-500 µg/mL weak Cytotoxic

IC₅₀ > 501 µg/mL No cytotoxic (Setiawati, 2013)

Cytotoxicity assay results of plant extracts Sisik Naga against T47D cells dichloromethane extract showed weak cytotoxic effect because the test results to obtain IC50 above 500 µg / mL, while the methanol extract is non-toxic. The test results dichloromethane extract against Vero cell derived non-cytotoxic outcome. This means safe dichloromethane extract was developed as a raw material anticancer cancer. Positive control extracts against 147D cell cytotoxicity testing using tamoxifen. T47D cells express receptors for estrogen and progesterone. Tamoxifen is able to selectively inhibit the estrogen receptor and induce.

CONCLUSION

Dichloromethane and methanol extracts of plant Sisik Naga have character meets the requirements and they have chemical content of flavonoids and phenolic compounds. Dichloromethane extract are cytotoxic weak while the methanol extract non-cytotoxic to cancer cells t47d.

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