

Acute Toxicity And Antipyretic Test Of Faloak (*Sterculia quadrifida*, R.Br) Leaves As Traditional Medicine

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ABSTRACT

- Objective: The aim of the study was to provide information about the efficacy and safety of Faloak leaves in the development of new traditional medicines.
- Methods: Identification and characterization of the extract was carried out at the beginning. In the acute toxicity test, a single oral dose of 2000 mg/KgBw of extract was given to five mice at 24 h intervals. Animals were observed individually for any clinical signs of toxicity or mortality for 14 days. DPT-Hb was used as a fever inducer in the antipyretic test of infusion and ethanol extract of faloak leaves.
- Results: For acute treatment, the extract did not reveal any signs of toxicity or mortality in any animal, during the 14 days observation period. The LD50 of extract was estimated to be greater than 2000 mg/KgBw. A dose of 2000 mg/KgBw in mice for 14 days showed significant side effects on the liver and spleen which were marked by organ weights that were significantly different from the control group. Paracetamol as positive control, IDF 100% and EEDF 400 mg/KgBw showed a significant difference ($p < 0.05$) with the negative control group.
- Conclusion: The results showed that faloak leaf has potential as an antipyretic, but liver function must be monitored, even though the LD50 value is above 2000mg/KgBw.

Keywords: Faloak, Extract, Acut toxicity, Antipyretic

INTRODUCTION

Data from the Central Statistics Agency in NTT shows that 80.17% of people in East Nusa Tenggara use traditional plants as medicine.

Faloak (*Sterculia quadrifida*, R.Br) is a plant that is popular with its bark used by the people of NTT to treat several diseases. Bioavailability should also be considered in the development of a traditional medicine. The phenomenon found shows that taking bark that exceeds the carrying capacity of the tree can cause tree death,

Faloak leaves are interesting to study even though the leaves are not used as medicine, but some evidence of phytochemical screening shows that faloak leaves have the potential to be developed as medicine. One of the requirements for a plant to be developed as a medicinal plant is that it must be proven safe and have efficacy. The results of this study are expected to provide information on the efficacy and safety of Faloak leaves for the development of traditional medicines for fever.

MATERIALS AND METHODS

Identification and characterization of the extract was carried out at the beginning.

In the acute toxicity test, a single oral dose of 2000 mg/KgBw of extract was given to five mice at 24 h intervals. Animals were observed individually for any clinical signs of toxicity or mortality for 14 days.

DPT-Hb was used as a fever inducer in the antipyretic test of infusion and ethanol extract of faloak leaves.

RESULTS AND DISCUSSIONS

Identification and Characterization

Identification	IDF		EEDF	
	Tube test	TLC	Tube test	TLC
Alkaloid	+	+	+	+
Flavonoid	+	+	+	+
Tannin	+	+	+	+
Saponin	-	-	+	+
Steroid	+	+	+	+

Specific Parameter	Result
Extract name	Ethanol extract of Faloak
Latin name	<i>Sterculia quadrifida</i> R.Br
Plant parts	leaf
Indonesian Name	Faloak
Organoleptic	Form: dry extract Color: dark green Odor: Not rancid, not specific Taste: Chelate, a bit bitter.
water soluble compounds	4.6 %
Ethanol soluble compounds	11.26%
Non specific Parameter	
Water content	0.42%
Total ash content	3.1%
acid soluble ash content	0.5%

Acute Toxicity

Table 4: Organ index of test animals on day 14

Organ index (%)	CMC Group	EEDF 2000 mg/kg Bw
Brain	1.1 ± 0.09	1.2 ± 0.06
Heart	0.6 ± 0.10	0.6 ± 0.01
Lungs	1.2 ± 0.17	1.1 ± 0.26
Liver*	6.0 ± 0.78	9.5 ± 2.30
Spleen*	0.8 ± 0.09	1.8 ± 0.63
Stomach	1.9 ± 0.42	1.4 ± 0.37
Kidney	1.6 ± 0.16	1.7 ± 0.14

*significantly different from negative control (P < 0.05)

Antipyretic Test

DPT Hb began to show a pyrexia effect at 60 minutes with an average temperature increase of above 0.6 °C. the antipyretic activity of the test preparation was shown at 30 minutes after administration, except for the lowest concentrations of CMC and IDF groups. It is known that the content of active substances in the infusion is directly proportional to the concentration of the infusion.

IDF concentration of 100% showed a significant difference ($p < 0.05$) with the negative control group, the same thing also happened in the paracetamol group.

Table 6: Antipyretic effect of EEDF

Groups	ΔT (°C)
CMC	5.6 ± 0.74
PCT*	10.7 ± 0.81
EEDF 100	6.2 ± 0.62
EEDF 200	6.4 ± 0.51
EEDF 400*	9.3 ± 0.85

*significantly different from negative control (P < 0.05)

The highest value of ΔT was in the paracetamol group, this data is in accordance with the mechanism of action of inhibition of prostaglandin synthesis in the central nervous system. All test preparations showed a greater antipyretic effect than CMC. The test results showed that only positive control and a dose of 400mg/KgBw showed a significant antipyretic effect ($P < 0.05$).

CONCLUSION :

The results showed that faloak leaf has potential as an antipyretic, but liver function must be monitored, even though the LD50 value is above 2000mg/KgBw

ACKNOWLEDGMENT

The author gratefully acknowledged the Laboratory Departement of the Pharmacy Health Polytechnic Kupang that has facilities for this research.

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