ETHANOL EXTRACT OF TIKEN LEAVES (*Fraxinus griffithii* Clarke) AS ANTICONVULSANT IN MICE

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ABSTRACT

Tiken plants (*Fraxinus griffithii* Clarke) has been used as traditional medicine in Indonesia or other countries. Research has demonstrated that tiken bark extract may prolong barbiturate sleeping time and also have anticonvulsant effects in mice. This research was carried out using ethanol extract of tiken leaves to study its anticonvulsant effect in mice. The study used five groups of experimental animals. The groups consisted of one control group, three treatment groups, and one standard group. The control group was given CMC Na suspension, treatment groups were given ethanol extract of tiken leaves at doses of 4000, 5000 and 6000 mg/kg body weight, respectively, the standard group was given Phenobarbital sodium solution at dose of 26 mg/kg body weight. Sixty minutes after treatment, all mice were induced using electroshock induced seizures. Anticonvulsant effect was determined by reduction in seizure duration. There were statistically significant differences in seizure duration between treatment, standard, and control groups. It can be concluded that the ethanol extract of tiken-leaves have anticonvulsant effect in mice.

Key words: tiken, *Fraxinus griffithii* Clarke, anticonvulsant, electroshock.

INTRODUCTION

Seizures (convulsions) occur because of abnormal change of a group of cortical neurons that are not synchronized. Anything that disrupts the normal homeostasis and stability of the neuron will trigger hyperexcitability and seizures (Dipiro, 2008). Although the standard therapy can control seizures in 80% of the patients, millions of people in the United States are still suffering from uncontrolled epilepsy (Katzung, 2007).

Epilepsy is a common term for a group of disorders or diseases of central nervous system that arises spontaneously and recurrently with short episodes (called recurrent seizure) with the main symptom of declining until loss of consciousness. The attack/epileptic attack is usually accompanied by seizures (convulsions), autonomic hyperactivity, sensory or mental impairment, and always accompanied by a picture of abnormal and excessive EEG bursts (Syarif dkk., 2008).

Generally, there are two mechanisms (of action) of antiepileptic agents, which are potentiating inhibition (GABA-ergic mediated system) and decreasing excitation which then modifies the ion conduction of Na⁺, Ca²⁺, K⁺ and Cl⁻ or neurotransmitter activity (Syarif dkk., 2008). Therapy of epilepsy