Oct. 2011, Volume 8, No. 10 (Serial No. 83), pp. 617-625
Journal of US-China Medical Science, ISSN 1548-6648, USA

Development of Standardized Ethanol Extract of *Fraxinus Griffithii* as CNS Depressant

Kartini[1], Sutarjadi[2], Aguslina Kirtishanti[1], Dini Kesuma[1], Soediatmoko Soediman[1] and Kusuma Hendrajaya[1]

1. Faculty of Pharmacy, University of Surabaya, Indonesia

2. Center for Information and Development of Traditional Medicine, University of Surabaya, Indonesia

Abstract: Background: *Fraxinus griffithii* has been widely used as CNS depressant. Its activity based on both empirical and preclinical data. However, standardization on raw material and process of extraction have not been conducted. **Methods:** Extraction of *Fraxinus griffithii* was conducted on different part of plants, as well as different solvents and extraction methods. Each extract was standardized both on specific and nonspecific parameters. Additionally, phenobarbital induced sleeping time test was performed on each extract. **Results:** Leaves of *F. griffithii* extracted with 70% ethanol by kinetic maceration yielded the highest extract. CNS depressant activity of 70% ethanol extract obtained from *F. griffithii* leaves by kinetic maceration was the highest compared to the others. **Conclusion:** All of the extracts have CNS depressant activity, but extract from the leaves, produced by 70% ethanol and kinetic maceration had the optimal activity and quality.

Key words: *Fraxinus griffithii*, standardized, phenobarbital induced sleeping time test, CNS depressant.

1. Introduction

CNS (central nervous system) depressant is a class of drugs used to decrease the brain activity [1]. Based on the pharmacological effect, CNS depressant is divided into five, namely: systemic anesthetics, sedatives and hypnotics, central relaxants, antipsychotics and anti-seizure [2]. In the clinical treatment, CNS depressant is used to treat anxiety, muscle tension, pain, insomnia, acute stress reaction and seizure. Side effects of CNS depressant ranging from confusion, dizziness, memory damage, impaired motor coordination, cognitive function as well as physical and mental dependence. These are problems faced by most groups of CNS depressant [3]. CNS depressants commonly used in the treatment are group of barbiturates and benzodiazepines [4]. Based on these problems, it is necessary to search for other drugs with less side effects. This can be conducted through two approaches: modification of the chemical structure of existing drugs (1) or development of plant-based CNS depressant (2). The latter alternative is an approach that is likely to be carried out in Indonesia, considering that this country is rich in medicinal plants, has the herbal medicine industry with high growth and there is promising national and international market interest on herbal medicine [5].

Through various policies, the Indonesian government has encouraged the utilization and development of Indonesian medicinal plants. In order for the herbal medicines to be used in formal health services, the government directed the development of herbal medicine from “jamu” to become Standardized Herbal Medicine (SHM) and Phytopharmaca. Jamu is group of herbal medicine that its safety and efficacy are based on empirical data, both of its raw material and product have not been standardized. SHM and phytopharmaca have to fulfill requirement on preclinical and clinical trials, respectively, also both raw material and product have been standardized. It is expected that these two classes of traditional drug can

Corresponding author: Kartini, S.Si., M.Si., Apt., research fields: phytochemistry; standardization of herbal medicine. E-mail: kartini240777@gmail.com.