Proceeding Book

The 1st ITB International Conference on Pharmaceutical Sciences and Pharmacy

icpsp

7-8 October 2020

" Challenges on Development Towards Pharma 4.0 "

Organized by:

School of Pharmacy

ITB Press

PROCEEDING BOOK OF
THE 1st INTERNATIONAL CONFERENCE ON
PHARMACEUTICAL SCIENCES AND PHARMACY
"Challenges on Development Towards Pharma 4.0"

STEERING COMMITTEE

Prof. Dr. apt. I Ketut Adnyana (Dean of School of Pharmacy ITB Indonesia)
Prof. Dr. apt.Slamet Ibrahim (Chairman of Senat of School of Pharmacy ITB Indonesia)
Prof. Dr. apt. Daryono Hadi Tjahjono, M.Sc. (Chairman of Pharmacochemistry Research Group, School of Pharmacy ITB Indonesia)
Prof. Dr. apt. Debbie Sofie Retnoningrum (Chairman of Pharmaceutics Research Group, School of Pharmacy ITB Indonesia)
Prof. Dr. apt. Irda Fidrianny (Chairman of Pharmaceutical Biology Research Group School of Pharmacy ITB, Indonesia)
Dr. apt. Kusnandar Anggadiredja (Chairman of Pharmacology and Clinical Pharmacy Research Group School of Pharmacy ITB, Indonesia)
Prof. Dr. apt. Andreanus A Soemardji (School of Pharmacy ITB, Indonesia)
Prof. Dr. apt. Elin Yulinah S (School of Pharmacy ITB, Indonesia)
Prof. Dr. apt. Sukmadjaja Asyarie (School of Pharmacy ITB, Indonesia)
Prof. Dr. apt. Yeyet Cahyati S (School of Pharmacy ITB, Indonesia)
Prof. Dr. apt. Sundani Nurono Soewandhi (School of Pharmacy ITB, Indonesia)
Prof. Dr. apt. Jessie Sofia Pamudji (School of Pharmacy ITB, Indonesia)
Prof. Dr. apt. Komar Ruslan Wirasutisna (School of Pharmacy ITB, Indonesia)
Prof. Dr. apt. Asep Gana Suganda (School of Pharmacy ITB, Indonesia)
Prof. Dr. apt. Sukrasno (School of Pharmacy ITB, Indonesia)
Dr. apt. Lucy Dewi Nurhajati Sasongko (School of Pharmacy ITB, Indonesia)
Dr. apt. Rahmana Emran Kartasasmita (School of Pharmacy ITB, Indonesia)
Prof. Dr. apt. Heni Rachmawati (School of Pharmacy ITB, Indonesia)
Prof. Federico Gago (University of Alcala, Spain)
Prof. Wim. J. Quax (University of Groningen, Netherlands)
Prof. Hideyoshi Harashima (Hokkaido University, Japan)
Prof. Maria José Alonso (University of Santiago de Compostela, Spain)
dr. Matjis van Meurs (University of Groningen, Netherlands)
Dr. Sci. Hidehiro Uekusa (Tokyo Institute of Technology, Japan)

ORGANIZING COMMITTEE

Chairman : Dr. apt. Rachmat Mauludin (School of Pharmacy ITB, Indonesia)
Secretary : Dr. apt. Ratna Annisa Utami (School of Pharmacy ITB, Indonesia)
apt. Eskarani Tri Pratiwi, M.S.Farm. (School of Pharmacy ITB, Indonesia)
Treasurer : Dr. apt. Ilma Nugrahani (School of Pharmacy ITB, Indonesia)
Dr. apt. Catur Riani (School of Pharmacy ITB, Indonesia)
Dr. apt. Amirah Adlia (School of Pharmacy ITB, Indonesia)

Conference : Dr. apt. Aluicia Anita Artarini (School of Pharmacy ITB, Indonesia)
Anis Susieyeni, M.Ds. (School of Pharmacy ITB, Indonesia)
apt. Bhekti Pratiwi, M.Si. (School of Pharmacy ITB, Indonesia)
Dr. apt. Afrillia Nuryanti G (School of Pharmacy ITB, Indonesia)
apt. Nur Azizah Fitria, M.Sc. (School of Pharmacy ITB, Indonesia)
Dr. apt. Benny Permana (School of Pharmacy ITB, Indonesia)
Dr. apt. Yuda Prasetya Nugraha (School of Pharmacy ITB, Indonesia)
Dr. apt. Pratiwi Wikaningtyas (School of Pharmacy ITB, Indonesia)
Dr. apt. Fransiska Kurniawan (School of Pharmacy ITB, Indonesia)
Agung Dwi Juniarsyah, M.Or (School of Pharmacy ITB, Indonesia)
Iwa Ikhwan Hidayat, M.Or (School of Pharmacy ITB, Indonesia)
Sri Indah Ihsani, M.Or (School of Pharmacy ITB, Indonesia)
Dr. apt. Muhamad Insanu (School of Pharmacy ITB, Indonesia)
apt. Dhyan Kusuma A., M.Si. (School of Pharmacy ITB, Indonesia)
apt. Muhamad Azhari, M.Si (School of Pharmacy ITB, Indonesia)
Dr. apt. Hubbi Nashrullah (School of Pharmacy ITB, Indonesia)
apt. Atina Rizki C, M.Si (School of Pharmacy ITB, Indonesia)
Muhamad Fahmi Hasan, M.Or (School of Pharmacy ITB, Indonesia)

Reviewer Dr. apt. Rachmat Mauludin (School of Pharmacy ITB, Indonesia)
Dr. apt. Muhammad Insanu (School of Pharmacy ITB, Indonesia)
Dr. apt. Neng Fisheri Kurniati (School of Pharmacy ITB, Indonesia)
Dr. apt. Benny Permana (School of Pharmacy ITB, Indonesia)

Editor apt. Eskarani Tri Pratiwi, M.S.Farm. (School of Pharmacy ITB, Indonesia)
Designer Spoudy Lucianus
Ripky
1st Print 2021
ISBN 978-623-297-099-1

Published and Printed by:

ITB Press

Gedung Perpustakaan Pusat ITB
Lantai Basement, Jl. Ganesa No. 10
Bandung 40132, Jawa Barat
Telp. 022 2504257/022 2534155
e-mail: office@itbpress.itb.ac.id
web: www.itbpress.itb.ac.id
Anggota Ikapi No. 034/JBA/92
APPTI No. 005.062.1.10.2018

ANTI-FATIGUE EFFECT OF FALOAK BARK INFUSION (*STERCULIA QUADRIFIDA R.BR.)* USING THE WEIGHT-LOADED FORCED SWIMMING TEST (WFST) METHOD

Stefany S.A Fernandez[1]*, Marce Inggritha Taku Bessi[2]
[1]Department of Pharmacology, Health Polytechnic of ministry of health Kupang
(Jl. Adisucipto Kupang)
[2]Department of Pharmachemistry, Health Polytechnic of ministry of health Kupang
(Jl. Adisucipto Kupang)
*Corresponding author: fzeztephanie@gmail.com

ABSTRACT

Fatigue is a condition of weakness or reduced ability to do a job. When there is a lack of energy, people have their way of dealing with it. One of the plants of the Family Sterculiaceae empirically used by the people of East Nusa Tenggara as a stamina enhancer in heavy workers, pre and postpartum mothers to increase energy during and after birth is Faloak (Sterculia quadrifida R.Br.). the results of acute toxicity tests on test animals indicate that Faloak infusion is safe. Phytochemical screening results show the content of flavonoids, anthraquinone, saponins, cardenolides, and tannins. The method used in this test is a Weight-loaded Forced Swimming Test (WFST), the mice are forced to swim with a load of ± 10% of body weight before and after the preparation of Faloak infusion with a concentration of 50%, 75%, and 100% for 8 days. Measurements of swimming length and body weight were carried out using the One Way ANOVA and Paired T-Test, the data showed that there was no effect of weight gain in mice ($p > 0.05$) on the length of time for animal swimming. The test results using the paired T Test showed an anti-fatigue effect of 50%, 75%, and 100% concentrations of faloak stem bark infusion ($P < 0.05$) and significantly different from the control group ($^* p < 0.05$) based on the One way ANOVA test. From these results it can be seen that infusion of faloak stem bark concentrations of 50%, 75% and 100% has an anti-fatigue effect.

Keywords: Anti fatique, Faloak, Sterculia quadrifida R.Br., WFST, mice

EFEK ANTI LELAH INFUS KULIT BATANG FALOAK (*STERCULIA QUADRIFIDA, R.BR)* DENGAN METODE WEIGHT LOADED FORCED SWIMMING TEST (WFST)

ABSTRAK

Kelelahan merupakan kondisi lemah atau berkurangnya kemampuan dalam melakukan suatu pekerjaan. Ketika tubuh kekurangan energi, setiap orang memiliki cara tersendiri untuk mengatasinya. Salah satu tumbuhan Famili Sterculiaceae yang secara empiris dimanfaatkan oleh masyarakat Nusa Tenggara Timur sebagai penambah stamina pada pekerja berat dan ibu hamil dengan maksud menambah tenaga sebelum dan sesudah melahirkan adalah Faloak (Sterculia quadrifida R.Br.). Hasil uji toksisitas akut pada hewan uji menunjukkan infus faloak aman untuk digunakan. Hasil skrining fitokimia menunjukkan kandungan flavonoid, antrakuinon, saponin, cardenolides, dan tanin. Metode yang digunakan dalam pengujian ini adalah Weight-loaded Forced Swimming Test (WFST), mencit dipaksa berenang dengan beban ± 10% dari berat badan sebelum dan sesudah pemberian infus faloak dengan konsentrasi 50%, 75 %, dan 100% selama 8 hari. Pengukuran lama waktu berenang dan bobot badan dilakukan dengan uji One Way ANOVA dan Paired T-Test, data menunjukkan tidak ada pengaruh pertambahan bobot badan mencit ($p > 0,05$) terhadap lama waktu berenang hewan. Hasil uji menggunakan paired T Test menunjukan efek anti lelah konsentrasi 50%, 75%, dan 100% dari infuse kulit batang faloak ($P<0.05$) dan berbeda nyata dengan kelompok kontrol ($^*p<0.05$) berdasarkan uji ANOVA One way. Dari hasil tersebut dapat diketahui bahwa infus kulit batang faloak konsentrasi 50%, 75% dan 100% mempunyai efek anti lelah.

Kata Kunci: Anti lelah, Faloak, Sterculia quadrifida R.Br., WFST, mencit

1. INTRODUCTION

Traditional medicine is a national cultural heritage that comes from plants, animals, minerals, galenic or a mixture of these ingredients which is used from generation to generation based on experience (Kemenkes RI 2007). Indonesia is a country with great biodiversity. There are approximately 30,000 species of plants in tropical forests of Indonesia and 9600 species are used as medicine (Ristoja 2017). Scientific evidence regarding the efficacy and safety of traditional medicines is still lacking, so its use is limited. There are 1,874 species and 807 kinds of medicinal herbs in NTT (Ristoja 2017). One of the plants originating from NTT that comes from the Sterculiaceae family is Faloak (Sterculia quadrifida R.Br.).

Fatigue affects more than 20% of people worldwide, which is usually associated with physical and/or psychological weakness (Tanaka et al 2008). Fatigue is a condition in which muscle cells are unable to contract due to a lack of ATP, neuromuscular juction is unable to continue stimulation, and accumulation of lactic acid. Fatigue can cause pain due to muscle tissue ischemia and lead to decreased muscle activity (Herwana 2005). Muscles will show a decrease in performance if continuously used, but can recover after going through a period of rest (Allen 2008). In a study conducted by Slobounov (2008), it was found that a relationship between injuries experienced by an athlete and the fatigue he feels, in other words, fatigue can also affect concentration and cognitive function.