

## DISERTASI

# PENGARUH FRAKSI MINYAK ATSIRI UMBI TEKI (*Cyperus rotundus* L) TERHADAP KADAR PROTEIN INTEGRIN 3, L-SELECTIN, INTERLEUKIN-1 DAN EPIDERMAL GROWTH FACTOR UTERUS MENCIT PADA PERIODE IMPLANTASI



Oleh  
**HENDRI BUSMAN**  
BP. 1131202137

**PEMBIMBING :**

1. Prof. DR. dr. Yanwirasti, PA (K)
2. Prof. DR. sc.agr.Ir. Jamsari, MP
3. DR. Djong Hon Tjong, MSi

**PROGRAM PASCASARJANA  
PROGRAM STUDI S3 ILMU BIOMEDIK  
FAKULTAS KEDOKTERAN  
UNIVERSITAS ANDALAS  
PADANG  
2017**

## ABSTRAK

### **PENGARUH FRAKSI MINYAK ATSIRI UMBI TEKI (*Cyperus rotundus* L) TERHADAP KADAR PROTEIN INTEGRIN 3, L-SELECTIN, INTERLEUKIN-1 DAN EPIDERMAL GROWTH FACTOR UTERUS MENCIT PADA PERIODE IMPLANTASI**

Proses implantasi memerlukan interaksi antara embrio dan reseptivitas endometrium. Ekspresi protein esensial, sitokin dan peptida dapat diketahui pada waktu ini sebagai biomarker yang maksimal bagi reseptivitas endometrium. Sejumlah faktor dapat menyebabkan gangguan pada proses implantasi, kekurangan reseptivitas endometrium akan mempengaruhi kegagalan implantasi. Tujuan penelitian ini adalah untuk membuktikan pengaruh fraksi ekstrak umbi rumput teki terhadap kadar protein integrin 3, L-selectin, interleukin-1 (IL-1) dan epidermal growth factor (EGF) uterus mencit pada periode implantasi.

Penelitian ini menggunakan mencit sebagai hewan percobaan sejumlah 24 ekor mencit betina, kemudian dikawinkan dengan mencit jantan dengan rasio (1 ekor betina : 1 ekor jantan). Setelah diketahui adanya sumbat vagina pada mencit betina kemudian diberikan fraksi minyak atsiri umbi teki secara oral (dicekok) sesuai dosis perlakuan. Masing-masing 6 ekor mencit betina dikelompokkan sebagai kelompok kontrol, dan 3 kelompok perlakuan terdiri atas kontrol (K) = 0,4 ml aquabides, perlakuan 1 (P1) = 4,5 mg/40 g BB, perlakuan 2 (P2) = 45 mg/40 g BB dan perlakuan 3 (P3) = 135 mg/40 gr BB.

Hasil penelitian dengan menggunakan analisa varian satu arah, pemberian fraksi minyak atsiri umbi teki dapat menurunkan kadar integrin 3, L-selectin, IL-1 dan EGF uterus mencit secara signifikan.

Berdasarkan pada hasil penelitian yang telah dilakukan, maka dapat disimpulkan bahwa pemberian fraksi 1, 2, 3 dan 4 minyak atsiri umbi teki pada mencit betina dapat menurunkan kadar integrin 3, L-selectin, IL-1 dan EGF uterus mencit selama periode implantasi embrio.

Kata kunci : *Cyperus rotundus*, fraksi minyak atsiri, implantasi embrio, integrin 3, L-selectin, IL-1, EGF.

## ABSTRACT

### THE EFFECTS OF ATSIRI OIL FRACTION FROM TUBER RHIZOME *Cyperus rotundus* L ON THE CONTENT INTEGRIN $\alpha$ 3, L-SELECTIN, IL-1 AND EPIDERMAL GROWTH FACTOR PROTEIN IN MICE UTERINE IMPLANTATION PERIOD

Implantation process requires the interaction between embryo implantation and endometrial receptivity. Expression of essential proteins, cytokines and peptides can be known at this time as the maximal biomarker for endometrial receptivity. A number of factors could cause interference with the implantation process, the lack of receptivity of the endometrium will affect implantation failure. The purpose of this research was to prove the influence tuber rhizome extract fraction *Cyperus rotundus* on levels integrin  $\alpha$ 3 protein, L-selectin, interleukin-1 (IL-1) and epidermal growth factor (EGF) in the mice uterine implantation period.

This research used mice as experimental animals, 24 female and male mice mated with a ratio of (1 females: 1 male). Having known of the vaginal plug in female mice were then given atsiri fraction tuber rhizome of *C. rotundus* orally as prescribed treatment. Each 6 female mice were classified as the control group and three treatment groups consisted of control (K) = 0.4 ml aquabidest, treatment 1 (P1) = 4.5 mg/40g body weight, treatment 2 (P2) = 45 mg/40g body weight and treatment 3 (P3) = 135 mg/40gr body weight.

The result of research using a one-way analysis of variance atsiri oil fraction tuber rhizome of *C. rotundus* can reduce levels integrin  $\alpha$ 3, L-selectin, IL-1 and EGF mice uterine significantly.

Based on the results of the research that has been done, it can be concluded that the atsiri oil fraction 1, 2, 3 and 4 from tubers rhizome of *C. rotundus* in female mice can reduce levels integrin  $\alpha$ 3, L-selectin, IL-1 and EGF mice uterine during embryo implantation period.

Keywords : *Cyperus rotundus*, atsiri oil fraction, embryo implantation , Integrin  $\alpha$ 3, L-selectin, IL-1 , EGF.