

THE EFFECTS OF *Labisia pumila* var. *alata* ROOT
EXTRACTS ON NON-PREGNANT AND PREGNANT
SPRAGUE-DAWLEY RATS (*Rattus norvegicus*)

SITI NURTAHIRAH BT. JAAFAR

MASTER OF SCIENCE
UNIVERSITI MALAYSIA TERENGGANU
MALAYSIA

2009

Abstract of the thesis presented to the Senate of Universiti Malaysia
Terengganu in fulfillment of the requirement for the degree of Master of
Science

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PREGNANT AND PREGNANT SPRAGUE DAWLEY RATS (*Rattus
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Chairman : Professor Mohd Effendy B. Abd. Wahid, Ph.D
Member : Professor Mohd Zamri B. Saad, Ph.D
Habsah Bt. Mohamad, Ph.D
Mohd Hussin B. Hj. Zain
Faculty : Science and Technology

Labisia pumila var. *alata* (Kacip Fatimah) is a medicinal herb used by Malay women and aborigines of Malaysia for the purpose of inducing and in the facilitation of labour. Other than that, it is also believed that *Labisia pumila* var. *alata* is used by pregnant women between one and two month prior to childbirth to induce and expedite labour. This study was conducted to determine the effects of chloroform extract of *Labisia pumila* var. *alata* (LPC) and aqueous extract of the *Labisia pumila* var. *alata* (LPW) roots on non-pregnant and pregnant Sprague Dawley rats. Phytochemical screening of terpenoids, saponin and alkaloid were conducted on LPC and LPW. Results showed that both LPC and LPW crude contains terpenoids and saponin. None of LPC and LPW contains alkaloids. The animal models were treated by oral gavage with diluted dosage of 3 mg/kg and 5 mg/kg LPC and LPW

respectively. Histological changes in the uterus and the related hormones were studied for both non-pregnant and pregnant rats. High significant changes ($p < 0.05$) were noted in the perimeter and number of the endometrial glands and the thickness of endometrium wall from lumen to perimetrium in all treated groups in day 7, 14 and 21. The level of progesterone and estrogens hormones in all groups were not significant ($p > 0.05$). There were no correlation between the numbers of the endometrial glands and the hormones levels noted. Besides the positives effects of the LPC and LPW on the uterine involution, it is concerned that the side effects to the other organ also contribute curiosity to the consumer. Liver and kidney injury and damage occurred after ingestion of the herbs is highly worrying about the safety of the product. LPC and LPW extracts (3 mg/kg and 5 mg/kg body weight) showed cellular changes after the treatment time. Microscopic examination of liver was done to study the manifestation of injury and lesions caused by LPC and LPW. It was noted that the LPC and LPW caused hepatotoxicity and cell injury to the liver starting from day 7 after treatment, followed by day 14 and day 21 prior to the treatment. The crude's generated cell necrosis, endothelial cell damage, congestion and dilation of the sinusoids, thrombosis and hemorrhage to the liver. Kidney's also showed scattered necrosis of epithelium of tubules and Hydropic degenerative changes. Congested glomeruli also occurred and more extensive necrosis of the tubular epithelial for animal treated by LPC and LPW crude.

Abstrak tesis yang dikemukakan kepada Senat Universiti Malaysia Terengganu sebagai memenuhi keperluan untuk ijazah Master Sains.

KESAN EKSTRAK *Labisia pumila* var. *alata* TERHADAP TIKUS JENIS SPRAGUE DAWLEY SEBELUM DAN SELEPAS BERANAK

SITI NURTAHIRAH BT JAAFAR

2009

Pengerusi : Prof. Mohd Effendy B. Abd Wahid, Ph.D

**Ahli : Prof. Mohd Zamri B. Saad, Ph.D
Habsah Bt. Mohamad, Ph.D
Mohd Hussin B. Hj. Zain**

Fakulti : Sains dan Teknologi

Labisia pumila var. *alata* (Kacip Fatimah) adalah tumbuhan herba yang digunakan oleh wanita Melayu dan orang asli Malaysia sebagai ubatan bertujuan untuk membantu mempermudah proses melahirkan bayi. Selain daripada itu, *Labisia pumila* var. *alata* dipercayai digunakan oleh wanita hamil antara satu dan dua bulan sebelum kelahiran untuk memudahkan proses bersalin. Tujuan kajian ini dijalankan adalah untuk mengkaji kesan ekstrak kloroform *Labisia pumila* var. *alata* (LPC) dan ekstrak air rebusan *Labisia pumila* var. *alata* (LPW) kepada tikus makmal Sprague Dawley sebelum kelahiran dan selepas kelahiran. Fitokimia seperti terpenoid, saponin dan alkaloid dikaji kandungannya di dalam ekstrak tersebut. Didapati LPC dan LPW ekstrak mengandungi terpenoids dan saponin, manakala alkaloid tiada di dalam ekstrak tersebut. Tikus makmal

diuji dengan 3 mg/kg dan 5 mg/kg ekstrak LPC dan LPW yang diberi secara oral. Perubahan histologi kepada uterus dan hormon yang berkaitan dikaji pada tikus sebelum kelahiran dan selepas kelahiran. Hasil kajian menunjukkan terdapat perbezaan yang nyata ($p < 0.05$) didapati pada ukuran lilit kelenjar uterus, bilangan kelenjar uterus dan ketebalan dinding uterus dari lumen ke perimetrium pada semua kumpulan rawatan pada hari ke 7, 14 dan 21. Paras hormon estrogen dan progesteron dalam semua kumpulan tidak mempunyai perbezaan yang nyata ($p > 0.05$) dan tiada kolerasi di antara bilangan kelenjar dan paras hormon kesan daripada ekstrak LPC dan LPW. Selain daripada kesan yang memberangsangkan daripada LPC dan LPW ekstrak, kesan sampingan ke organ lain turut menimbulkan tanda tanya kepada pengguna. Kerosakan tisu pada hati dan ginjal selepas pengambilan herba membimbangkan pengguna terhadap keselamatan menggunakan produk herba tersebut. Ekstrak LPC dan LPW memberi kesan toksik kepada sel hati dan kerosakan tisu pada ginjal bermula daripada hari ke 7 selepas rawatan dan diikuti pada hari ke 14 dan ke 21. Ekstrak tersebut memberi kesan kematian sel pada hati, kerosakan pada endothelial sel, thrombosis dan pendarahan pada hati. Ginjal turut mengalami kesan yang sama. Ginjal menunjukkan kematian sel epithelium yang bertaburan dan kesan sampingan lain selepas diuji dengan ekstrak LPC dan LPW.