

ผลของกวาวเครือแดง(*Butea superba* Roxb.) ต่อระดับฮอร์โมนเพศและอวัยวะสืบพันธุ์ใน  
หนูแรทเพศเมียและเพศผู้โตเต็มวัย

นางสาว อังนุ เกษสุวรรณ

ศูนย์วิทยทรัพยากร

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ลิขสิทธิ์ของจุฬาลงกรณ์มหาวิทยาลัย

EFFECT OF RED KWAO KRUA (*Butea superba* Roxb.) ON SERUM SEX  
HORMONE LEVELS AND REPRODUCTIVE ORGANS IN ADULT  
FEMALE AND MALE RATS

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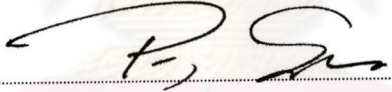
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อรุณ เกษสุวรรณ : ผลของกวางเครือแดงต่อระดับฮอร์โมนเพศและอวัยวะสืบพันธุ์ในหนูแรทเพศเมียและเพศผู้โตเต็มวัย (The effects of Red Kwao Krua (*Butea superba* Roxb.) on serum sex hormone levels and reproductive organs in adult female and male rats) อ. ที่ปรึกษา: รศ.ดร. สุจินดา มาลัยวิจิตรนนท์, อ. ที่ปรึกษาร่วม :รศ.ดร.กิ่งแก้ว วัฒนเสริมกิจ 135 หน้า. ISBN 974-17-4039-5.

การวิจัยครั้งนี้เป็นการศึกษาผลของกวางเครือแดงต่อระดับฮอร์โมนเพศและอวัยวะสืบพันธุ์ในหนูแรทเพศเมียโตเต็มวัยปกติ เพศผู้โตเต็มวัยปกติ เพศเมียที่ตัดรังไข่และเพศผู้ที่ตัดรังไข่ ในการทดลองแบ่งหนูออกเป็น 5 กลุ่ม ดังนี้ คือ กลุ่มที่ 1 หรือกลุ่มควบคุมทางลบ ให้น้ำกลั่นทางปากปริมาณ 0.7 มล./ตัว/วัน กลุ่มที่ 2, 3 และ 4 ให้ผงกวางเครือแดงแขวนลอยในน้ำกลั่น ทางปาก ปริมาตร 0.7 มล. ในปริมาณ 10, 50 และ 250 มก/กก นน.ตัว/วัน ตามลำดับ และกลุ่มที่ 5 หรือกลุ่มควบคุมทางบวก ให้สารเทสโทสเตอโรน โปรปีโอเนต ขนาด 600 ไมโครกรัม/100 กรัม นน.ตัว/วัน นาน 30 วัน ทำการเก็บตัวอย่างเลือดจากหัวใจ ทุกๆ 15 วัน หรือ ทุกๆ 3 รอบวงอีสตรัส เพื่อนำไปหาค่าฮอร์โมน LH, FSH, T และ E<sub>2</sub> จากการทดลองพบว่าระดับ T และน้ำหนักอวัยวะในหนูแรทเพศผู้ปกติที่ได้รับกวางเครือแดงขนาด 250 มก/กก.นน./วัน มีค่าเพิ่มขึ้น แต่ไม่พบการเปลี่ยนแปลงดังกล่าวในหนูแรทเพศผู้ที่ตัดอวัยวะ ไม่พบการเปลี่ยนแปลงทางจุลกายวิภาคของอวัยวะ epididymis และ seminal vesicle ทั้งในหนูแรทเพศผู้ปกติและที่ตัดอวัยวะ ในหนูแรทเพศเมียปกติและที่ตัดรังไข่พบว่าระดับ E<sub>2</sub> และน้ำหนักรังไข่และมดลูกไม่เปลี่ยนแปลงเมื่อได้รับกวางเครือแดงในขนาดต่าง ๆ แต่พบว่าการให้กวางเครือแดงขนาด 250 มก/กก นน.ตัว/วัน ทำให้เกิดการเปลี่ยนแปลงที่ระดับเนื้อเยื่อของมดลูกโดยทำให้ชั้น endometrium หนาตัวขึ้นและจำนวน uterine gland เพิ่มขึ้น จากการทดลองสามารถสรุปได้ว่ากวางเครือแดงในขนาด 250 มก/กก.นน.ตัว/วัน มีผลโดยตรงต่ออวัยวะสืบพันธุ์ทั้งในหนูปกติและหนูที่ถูกทำหมัน ยกเว้นในหนูเพศผู้ที่ตัดอวัยวะออกทั้ง 2 ข้าง

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KEY WORD: *Butea superba* / TESTOSTERONE/ ESTROGEN/ TESTIS/ OVARY

A-NGUN KETSUWAN: THE EFFECTS OF RED KWAO KRUA (*Butea superba* Roxb.) ON SERUM SEX HORMONE LEVELS AND REPRODUCTIVE ORGANS IN ADULT FEMALE AND MALE RATS. THESIS ADVISOR: ASSOC. PROF.: SUCHINDA MALAIVIJITNOND, PH.D, THESIS COADVISOR : ASSOC. PROF. :KINGKAEW WATTANASIRMKIT, PH.D, 135 pp. ISBN 974-17-4039-5.

This study aimed to investigate the effects of powder suspension of *Butea superba* Roxb. (BS) on sex hormone levels and reproductive organs in adult normal female, adult normal male, bilateral ovariectomized (OVX) and bilateral orchidectomized (ODX) rats. Three groups of rats were given the powder of BS at doses of 10, 50 and 250 mg/kg.BW/day for 30 days by gastric gavages. Distilled water (DW) and testosterone propionate (TP) were used as negative and positive control groups, respectively. The blood collections were done every 15 days or 3 estrous cycles for FSH, LH, T and E<sub>2</sub> assays. The results showed that serum T levels and the weights of seminal vesicle were significantly increased after administration of 250 mg/kg.BW/day of BS in normal male rats, but not in ODX rats. There was no change on the histology of testis, epididymis and seminal vesicle in both normal and ODX male rats. The administration of BS in cyclic and OVX female rats showed no difference in E<sub>2</sub> levels, and the uterine and ovarian weights. But the group given 250 mg/kg.BW/day of BS showed the histological change of uterus in both cyclic and OVX female rats; the endometrial thickness and the number of uterine glands were increased. It can conclude that the administration of BS at a dose of 250 mg/kg.BW/day has a direct effect on reproductive organs in both normal and castrated rats, except the ODX male rats.

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**ABBREVIATIONS**

TP	= Testosterone propionate
FSH	= Follicle Stimulating Hormone
g	= Gram
L	= liter
LD <sub>50</sub>	= Lethal dose 50%
LH	= Luteinizing Hormone
μl	= Microliter
ml	= Mililiter
BS	= <i>Butea superba</i>
RIA	= Radioimmunoassay



ศูนย์วิทยทรัพยากร  
จุฬาลงกรณ์มหาวิทยาลัย