- JAVA GINSENG
- MEDICINAL PLANTS

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KOMPARASI PENGARUH LAMA WAKTU PEMBERIAN EKSTRAK AKAR GINSENG JAWA dan GINSENG KOREA TERHADAP KADAR TESTOSTERON MENCIT

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Nurul Sunarsih, 2007, Komparasi Pengaruh Lama Waktu Pemberian Ekstrak Akar Ginseng Jawa dan Ginseng Korea Terhadap Kadar Testosteron Mencit, Skripsi ini di bawah bimbingan Dra. Dwi Winarni, M.Si dan Sugiharto, S.Si., M.Si., Jurusan Biologi, Fakultas Matematika dan Ilmu Pengetahuan Alam, Universitas Airlangga, Surabaya

ABSTRAK

Ginseng Jawa secara taksonomi berbeda dengan ginseng Korea, namun mempunyai morfologi akar dan beberapa kandungan kimia yang hampir sama yaitu steroid dan terpenoid. Fitosterol tumbuhan dapat diubah menjadi pregnenolon dan akhirnya dikonversi menjadi testosteron. Sekresi testosteron di bawah kontrol *luteinizing hormone* (LH), hambatan sekresi LH oleh estrogen mengakibatkan penurunan biosintesis testosteron pada sel Leydig. Penelitian ini dirancang untuk mengetahui pengaruh pemberian dan lama waktu pemberian ekstrak akar ginseng Jawa maupun ginseng Korea terhadap kadar testosteron mencit jantan yang diberi estrogen. Empat puluh empat ekor mencit (*Mus musculus*) strain BALB-C jantan umur 9-10 minggu dengan berat badan 25-35 g dibagi menjadi 4 kelompok perlakuan dan 2 kelompok tambahan. Kelompok I sebagai kontrol positif, kelompok II sebagai kontrol negatif diberi estrogen (2,8 μg *ethinylestradiol*/100g BB/hari), kelompok III diberi ekstrak akar ginseng Jawa (setara dengan 9,8 mg akar kering/100g BB/hari) bersamaan dengan estrogen, dan kelompok IV diberi ekstrak akar ginseng Korea (setara dengan 9,8 mg akar kering/100g BB/hari) bersamaan dengan estrogen. Setiap kelompok dibagi menjadi 3 subkelompok : subkelompok 1 diberi perlakuan selama 9 hari, subkelompok 2 diberi perlakuan selama 18 hari, dan subkelompok 3 diberi perlakuan selama 27 hari. Kelompok tambahan E0 tidak diberi masa pra perlakuan, sedangkan kelompok tambahan E1 diberi masa pra perlakuan. Masa pra perlakuan diberi estrogen (7 μg *ethinylestradiol*/100g BB/hari) selama 9 hari. Pada akhir perlakuan serum darah diambil dan kadar testosteron diukur melalui *radioimmunoassay* (RIA). Data yang diperoleh dianalisis dengan menggunakan uji Kruskall-Wallis dan uji Mann-Whitney pada $\alpha = 0,05$. Hasil penelitian ini menunjukkan bahwa pemberian ekstrak akar ginseng Jawa maupun ginseng korea mampu menekan efek estrogen dan mempercepat proses pemulihan sehingga kadar testosteron meningkat hingga kisaran normal. Pemberian ekstrak akar ginseng Jawa maupun ginseng Korea dengan lama waktu pemberian berbeda menunjukkan khasiat yang hampir sama terhadap kadar testosteron mencit jantan. Kesimpulan penelitian ini adalah bahwa akar ginseng Jawa mempunyai potensi yang hampir sama dengan akar ginseng Korea terhadap pemulihan kadar testosteron ke kadar testosteron normal.

Kata Kunci : *Ginseng Jawa, Ginseng Korea, Testosteron, Lama Waktu, Estrogen*

Nurul Sunarsih, 2007, Long-Term Effect Comparison of Administration Java Ginseng and Korean Ginseng Root Extract on Mice's Testosterone Level, This script is guidanced by Dra. Dwi Winarni, M.Si and Sugiharto, S.Si., M.Si., Department of Biology, Mathematic and Natural Sciences Faculty, Airlangga University, Surabaya

ABSTRACT

Taxonomicaly, Java ginseng is different from Korean ginseng, but they have similar in root's morphology and chemical constituents, which are steroids and terpenoids. Plant's phytosterol can be degraded to pregnenolone and finally, can be converted to testosterone. Testosterone secretion is controlled by luteinizing hormone (LH), the LH inhibition by estrogen will decrease testosterone biosynthesis in Leydig cells. These research were designed to evaluate the effect administration and long-term administration of Java ginseng and Korean ginseng root extract on testosterone level in estrogen-administered male mice. Fourty four male mice (*Mus musculus*) strain BALB-C aged 9-10 weeks, weighed 25-35 g were divided into 4 groups and 2 additional groups. The first group was as positive control, the second group was as negative control was given with estrogen (2,8 μg ethinylestradiol/100g bw/day), the third group was given Java ginseng (equal with 9,8 mg dried root/100g bw/day) together with estrogen, and the fourth group was given Korean ginseng (equal with 9,8 mg dried root/100g bw/day) together with estrogen. Each groups were divided into three subgroup : subgroup 1 was treatment for 9 days, subgroup 2 was treatment for 18 days, and subgroup 3 was treatment for 27 days. Additional group E0 wasn't given pre-treatment, whereas E1 was given estrogen (7 μg ethinylestradiol/100g bw/day) along 9 days. At the end of treatment, blood serum were collected and testosterone level was measured by radioimmunoassay (RIA). Data was analyzed by Kruskall-Wallis test and Mann-Whitney test at $\alpha = 0,05$. The result suggested that Java ginseng and Korean ginseng root extract could decrease estrogen's effect and accelerate recovery process, so testosterone level could increase into normal range. Administration of Java ginseng and Korean ginseng root extract with differ long-term suggested that both of them have similar effect on testosterone level. The conclusion is Java ginseng root extract have potency as well as Korean ginseng on the increasing of testosterone level into normal range.

Keyword : *Java Ginseng, Korean Ginseng, Testosterone, Long-Term, Estrogen*