

Putu Oky Ari Tania, 2011. Potensi Fraksi Biji Kara Benguk (*Mucuna pruriens*) Untuk Memulihkan Jumlah Sel Spermatogenik dan Profil Protein Membran Spermatozoa Mencit (*Mus musculus*) Setelah Pemberian 2-Methoxyethanol. Tesis ini dibimbing oleh Dr. Alfiah Hayati, M. Kes., dan Prof. Win Darmanto, Ph.D., Departemen Biologi, Fakultas Sains dan Teknologi, Universitas Airlangga, Surabaya.

INTISARI

Penelitian ini bertujuan untuk mengetahui pengaruh pemberian fraksi biji kara benguk terhadap jumlah sel spermatogenik dan profil protein membran spermatozoa setelah pemaparan 2-Methoxyethanol (2-ME). Tiga puluh ekor mencit jantan dibagi 5 kelompok, meliputi 2 kelompok kontrol yang diberi pelarut CMC 0,5 % (kontrol negatif) dan 2-ME (kontrol positif), dan 3 kelompok perlakuan yang diberi fraksi biji kara benguk berbagai dosis. Dua belas hari pertama, semua kelompok diinjeksi subkutan dengan 100 mg/kg 2-ME, kecuali kelompok kontrol negatif yang diinjeksi subkutan dengan akuabides. Hari ke 13 sampai hari ke 63, mencit diberi fraksi biji kara benguk secara oral dengan dosis berbeda berturut-turut 14, 28 dan 56 mg/kg, sedangkan pada kedua kelompok kontrol diberi pelarut CMC 0,5 %. Pada akhir perlakuan, mencit dikorbankan. Jumlah sel spermatogenik diamati dari preparat histologi testis dengan pewarnaan *Hematoxylin-Eosin*. Profil protein membran spermatozoa diidentifikasi dengan teknik elektroforesis SDS-PAGE. Penghitungan jumlah sel spermatogenik dilakukan pada tubulus seminiferus bundar tahap 7 siklus epitelium. Profil protein membran spermatozoa yang diamati meliputi jumlah pita dan berat molekul protein yang dianalisis secara deskriptif. Jumlah sel spermatogenik dianalisis menggunakan Anova satu arah ($\alpha = 0,05$), dan dilanjutkan dengan uji LSD. Dari Hasil penelitian menunjukkan pemberian fraksi biji kara benguk meningkatkan jumlah spermatosit I dan spermatid bundar, tapi tidak untuk spermatogonium. Fraksi biji kara benguk dosis 14 mg/kg bb memiliki pengaruh yang paling baik jika dibandingkan dosis lainnya. Pita protein yang tampak pada semua kelompok adalah 13 pita. Pita protein dengan berat molekul 41,6 kDa terekspresi pada semua kelompok, kecuali pada kontrol positif, sedangkan protein 24,5 kDa muncul hanya pada kontrol positif.

Kata kunci : *Mucuna pruriens*, 2-Methoxyethanol, sel spermatogenik, Profil protein membran spermatozoa, elektroforesis SDS-PAGE.

Putu Oky Ari Tania, 2011. Potency of *Mucuna pruriens* Seed Fraction to Recover The Number of Mice's Spermatogenic Cells and Profile of Spermatozoa's Membrane Proteins in Mice (*Mus musculus*) after The Administration of 2-Methoxyethanol (2-ME). This script is guided by Dr. Alfiah Hayati, M.Kes., and Prof. Win Darmanto, Ph.D., Department of Biology, Faculty of Science and Technology, Airlangga University, Surabaya.

ABSTRACT

The research was designed to know the effect of *Mucuna pruriens* seed fraction to the number of spermatogenic cells, and profile of spermatozoa's membrane proteins after the administration of 2-methoxyethanol (2-ME). Thirty male mice divided in 5 groups, two control groups were administered by 0.5 % CMC (negative control) and 2-ME (positive control), and 3 treated groups were administered by *Mucuna pruriens* seed fraction varied doses. Twelve days before treated, all groups were injected subcutaneously by 2-ME dose 100 mg/kg, except negative control group were injected by aquabides. Days thirteenth until sixty third, mice were administered by variation doses of *Mucuna pruriens*'s seed fraction 14, 28 and 56 mg/kg orally, while both control groups were administered by 0.5 % CMC orally. At the end of treatment, mice were sacrificed. Number of spermatogenic cells were observed histologically with *Hematoxylin-Eosin* staining. profile of spermatozoa's membrane proteins were identified by electrophoresis SDS-PAGE. Observation and calculation was conducted on round seminiferous tubules at stages VII of the epithelium cycle. Profile of spermatozoa's membrane proteins which observed are the number of bands and molecule weight of protein that analyzed by descriptive method. The number of spermatogenic's cells were analyzed by oneway anova ($\alpha = 0.05$) and continued by LSD test. From these observation showed that administration of *Mucuna pruriens* seed fraction caused increasing number of spermatocyte I and round spermatid, but not in spermatogonia. *Mucuna pruriens* seed fraction dose 14 mg/kg weight had the best effects compared by other doses. There were 13 bands which appeared in all groups. Protein with the molecule weight 41.6 kDa expressed in all groups except in positive control, while protein 24.5 kDa only expresses in positive control.

Keyword : *Mucuna pruriens*, 2-Methoxyethanol, Profile of spermatozoa's membrane proteins, electrophoresis SDS-PAGE.