

Fadilatur Rahmaniyah, 2015, Efek Fraksi Pericarp Manggis (*Garcinia mangostana* L.) Terhadap Histologi Testis Mencit (*Mus musculus*) yang Terpapar 2-Methoxyethanol. Skripsi ini di bawah bimbingan Dr. Alfiah Hayati dan Dr. Dwi Winarni, M.Si. Departemen Biologi, Fakultas Sains dan Teknologi, Universitas Airlangga, Surabaya.

ABSTRAK

Penelitian ini bertujuan untuk mengetahui pengaruh fraksi pericarp manggis (*Garcinia mangostana* L.) dengan variasi dosis dan kepolaran terhadap histologi testis yang meliputi jumlah sel spermatogenik (spermatogonia, spermatosit dan spermatid oval) dan ukuran (diameter dan tebal epitel) tubulus seminiferus mencit (*Mus musculus*) yang terpapar 2-Methoxyethanol (2-ME). Empat puluh delapan mencit jantan strain BALB/C dengan berat badan 25-30 g dibagi menjadi 8 kelompok yaitu 2 kelompok kontrol (negatif dan positif) dan 6 kelompok dengan variasi kepolaran dan dosis fraksi pericarp manggis (non polar dosis 0.6 dan 3 mg/kg bb; semi polar dosis 4 dan 20 mg/kg bb; polar dosis 0.4 dan 2 mg/kg bb) yang terpapar 2-ME. Perlakuan dilakukan selama 40 hari (2-ME selama 5 hari dan 35 hari dengan pemberian fraksi) secara *subcutan*. Uji statistik dilakukan terhadap data spermatogonia, spermatosit dan diameter tubulus seminiferus menggunakan uji Brown Forsythe, sedangkan data spermatosit oval dan tebal epitel tubulus seminiferus menggunakan uji *One Way Anova* pada $\alpha = 0.05$. Hasil penelitian menunjukkan bahwa jumlah sel spermatogonia, spermatosit, spermatid oval, diameter dan tebal epitel tubulus seminiferus pada kelompok fraksi polar dosis rendah (0,4 mg/kg bb) memiliki kemampuan terbaik untuk memulihkan kondisi testis yang rusak akibat terpapar 2-ME dibandingkan kelompok perlakuan lainnya.

Kata Kunci : *Garcinia mangostana* L., 2-ME, jumlah sel spermatogenik, ukuran tubulus seminiferus

Fadilatur Rahmadiyah, 2015, The Effect of Pericarp Fraction of Mangosteen (*Garcinia mangostana* L.) on Testicles Histological Structure of Mice (*Mus musculus*) Spermatozoa after 2-Methoxyethanol Exposure. This Project is under guidance of Dr. Alfiah Hayati and Dr. Dwi Winarni, M.Si. Departement of Biology, Faculty of Science and Technology, Airlangga University Surabaya.

ABSTRACT

This study was aimed to determine the effect of mangosteen pericarp fraction (*Garcinia mangostana* L.) with the variation of doses and polarities on testicular histological structure, including the number of spermatogenic cells (spermatogonia, spermatocytes and oval spermatids) and the size (diameter and thickness of the epithelium) of seminiferous tubules on mice (*Mus musculus*) which were exposed to 2-Methoxyethanol (2-ME). Forty-eight male mice strain BALB/C weighted 25-30 g were divided into 8 groups: two control groups (negative and positive) and 6 treatment groups with polar and dose variation of mangosteen pericarp fraction (non-polar doses of 0.6 and 3 mg/kg bw; semi-polar doses of 4 and 20 mg/kg bw; polar doses of 0.4 and 2 mg/kg bw) which were previously exposed to 2-ME. The treatment was conducted for 40 days (2-ME for 5 days and 35 days with treatment fraction) and injected subcutanly. Statistical tests conducted on spermatogonia, spermatocytes and diameter of seminiferous tubules data then continued with Brown Forsythe test, while oval spermatid and epithelium thickness of the seminiferous tubules data were analyzed using One Way Anova; each at $\alpha = 0.05$. The results showed that the number of spermatogonia, spermatocytes, oval spermatids cells, diameter and thickness of the epithelium of the seminiferous tubules on polar fraction of low-dose group (0.4 mg/kg bw) have the best ability to restore the condition of the testicles previously damaged by 2-ME exposure compared to other treatment groups.

Keywords : *Garcinia mangostana* L., 2-ME, spermatogenic cells, seminiferous tubules size