ABSTRACT

THE EFFECT OF ETHANOL EXTRACT MANGOSTEEN PEEL (Garcinia mangostana L.) ON Sprague dawley STRAIN WHITE RATS (Rattus norvegicus) TESTICLE EXPOSED BY HANDPHONE ELECTROMAGNETIC WAVES

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Increasing mobile phone users have a negative impact on the reproductive system, which one of them is testicle. Mobile phone electromagnetic waves will induce elevated reactive oxygen species (ROS) that may cause testicle histopathological changes. Resolving its condition, the antioxidants contained in mangosteen peel are needed. This study aims to determine the effects of ethanol extract from mangosteen peel (Garcinia mangostana L.) in order to repair testicle histopathological changes specifically spermatozoa and spermatogenic cells on Sprague dawley strain white male rats (Rattus norvegicus) given handphone electromagnetic waves exposure. This study uses 25 Sprague dawley strain white male rats with 200-300 gram body weight then the samples are divided into 5 groups which consist of Control Group 1 (K1) with no treatments are given in rats, Control 2 (K2) is given Nacl 0.9 % and mobile phone electromagnetic waves exposures. The Treatment group (P1), (P2), and (P3) are given ethanol extract from mangosteen peel with multilevel dosage of 50, 100, 200 mg / kgBW and exposure to mobile phone electromagnetic wave for 3 hours per day along for 28 days. The result of this study shows mean of sperm cells on K1 = 173.75 ± SD 16.978, K2 = 101.75 ± 7.455 SD, P1 = 148.50 ± SD 10.149, 10.247 P2 = 162.50 ± SD, P3 = 180.75 ± SD 10.149 10.247 P3 = 180.75 ± SD exposure to mobile phone electromagnetic wave for 3 hours per day along for 28 days. The result of this study shows mean of spermatogenic cells on K1 = 306.75 ± SD 11.955, K2 = 157.00 ± 7.303 SD, P1 = 243.50 ± SD 21.672 10.340 P2 = 266.75 ± SD P3 = 294.75 ± 13.150 SD. In One Way Anova test (p <0.005), sperm cells and spermatogenic cells show significant results with p=0.000. The conclusion of this study is ethanol extract of mangosteen peel (Garcinia mangostana L.) can repair testicle histopathological changes by inducing total testicular sperm cells and spermatogenic cells of Sprague dawley strain white male rats (Rattus norvegicus) exposed by mobile phone electromagnetic waves.

Keywords: Handphone, Electromagnetic wave, Testicle, Mangosteen peel, Antioxidants