

TESIS

**EFEK 2-METHOXYETHANOL TERHADAP KADAR
TESTOSTERON DAN HISTOLOGIS TESTIS
MENCIT (*MUS MUSCULUS L*)**



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ABSTRACT

EFFECT OF 2-MEHOXYETHANOL ON MICE (*MUS MUSCULUS L*) TESTOSTERONE CONCENTRATION AND TESTICULAR HISTOLOGY

2-Methoxyethanol (2-ME) is one of chemical agents that is derived from the metabolite of dimethoxyethylphthalate (DMEP) from the group phthalic acid ester (PAEs) used as plastizier in producing plastics. The compound 2-ME given to experimental animals were found to produce toxicity in reproductive system and the testis as the primary target organs, and may lead to the damage of spermatogenic cells (spermatogenesis) and the steroidogenetic process as well. The objective of this study was to test testosterone concentration and the histology of the testis (the number of spermatogonia, primary spermatocyte, and oval spermatid) that was given with 2-ME through subcutaneous injection in a varied dose. This study used complete randomized design. The experimental unit in this study comprised adult male Balb/c strain mice (*Mus musculus*), aged 6-8 weeks with body weight of 28-30 g. The animals were classified into 3 groups, each group comprising 10 mice. Two groups served as treatment groups, receiving 2-ME of 50 and 100 mg/kg BW, and one group served as control receiving subcutaneous 0.9% NaCl for 12 days.

Results showed significant reduction in testosterone concentration with $p = 0.002$, and, regarding testicular histology, the number of spermatogonia and primary spermatocyte showed significant reduction ($p = 0.008$ and $p = 0.050$), while spermatid count increased with $p = 0.86$, with a conclusion that 2-ME reduces testosterone concentration as well as the number of spermatogonia and primary spermatocyte.

Keywords: 2-methoxyethanol, testosterone, spermatogonia,
primary spermatocyte, oval spermatid