STUDI EFFEKTIVITAS NANOEMULSI PURWOCENG PADA PERBAIKAN FUNGSI REPRODUKSI TIKUS PUTIH JANTAN PASCA INDUKSI SLEEP DEPRIVATION: Study of the Effectiveness of Purwoceng Ethanol Extract Nanoemulsion on Improvement of the Reproductive Function of Male White Rats Post Sleep Deprivation Induction

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Abstract	Paradoxical sleep deprivation (PSD) or sleep disorders can affect sexual function and potentially reduce fertility rates. The active substance of Purwoceng (Pimpinella pruatjan Molk.), namely flavonoid and tannin compounds can improve the quality of function. Drug nanoemulsion is expected to increase the therapeutic effect and reduce toxicity. This study aims to determine the effect of purwoceng nanoemulsion on serum testosterone levels, testicular volume and testicular histopathology of male Wistar rats after stress induction of paradoxical sleep deprivation for 96 hours. This research is an experimental study with a post-test only design with a control group. A total of 24 rats were divided into 6 treatment groups. Group A was given PSD, group B was given PSD and sleep recovery, group C was given PSD and purwoceng extract 25 mg/300 gBW/day, group D was given PSD and purwoceng nanoemulsion 25 mg/300 gBW/day, group E was given PSD and purwoceng nanoemulsion. 50 mg/300 gBW/day, and group F was given PSD and purwoceng nanoemulsion 75 mg/300 gBW/day. Serum testosterone levels were measured by the ELISA method, testicular volume and histopathology determined using Image J software and data were analyzed by One Way ANOVA test and followed by Post Hoc Bonferroni test. Statistical analysis showed that there were significant differences in serum testosterone levels, testicular volume and testicular histopathology ($p<0.005$). Administration of purwoceng nanoemulsion affects serum testosterone levels, testicular volume, and testicular histopathology after PSD induction
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