EFEKTIVITAS FRAKSI N-BUTANOL BUAH LERAK (*Sapindus rarak* DC)TERHADAP KUALITAS SPERMATOZOA MANUSIA IN VITRO

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Intisari

Penelitian ini bertujuan untuk mengetahui efektivitas fraksi n-butanol buah lerak (*Sapindus rarak* DC) terhadap kualitas spermatozoa manusia. Kualitas spermatozoa ditentukan berdasarkan motilitas, viabilitas, integritas membran, dan kadar *malondialdehyde* (MDA) spermatozoa in vitro. Dua belas semen ejakulat manusia dibagi menjadi 2 kelompok. Enam semen ejakulat digunakan untuk pengamatan motilitas, viabilitas, dan integritas membran spermatozoa. Enam semen ejakulat digunakan untuk pengamatan kadar MDA spermatozoa. Kelompok kontrol diberi NaCl 0,9% dan kelompok perlakuan diberi fraksi n-butanol buah lerak dengan konsentrasi 200, 400, dan 600 µg/ml. Masing-masing pengamatan dilakukan 1 menit setelah pemberian perlakuan. Motilitas spermatozoa diamati menggunakan mikroskop cahaya perbesaran 400x. Viabilitas spermatozoa diamati dari hasil ulasan spermatozoa dengan pewarnaan eosin 1% dan nigrosin 10%. Integritas membran spermatozoa diamati dengan uji *hypo osmotic swelling* (HOS). Kadar MDA spermatozoa diuji dengan reaksi menggunakan *thiobarbituric acid* (TBA) dan dibaca pada λ=535 nm. Data yang diperoleh kemudian dianalisis dengan Brown-Forsythe, α=0,05 dan dilanjutkan dengan uji Games-Howell. Dari hasil penelitian fraksi n-butanol buah lerak menurunkan motilitas, viabilitas, integritas membran spermatozoa, dan meningkatkan kadar MDA spermatozoa. Konsentrasi fraksi n-butanol buah lerak yang paling optimum menurunkan kualitas spermatozoa adalah 600µg/ml.

Kata kunci: *Sapindus rarak* DC, spermatozoa manusia, motilias, viabilitas, integritas membran, kadar *malondialdehyde* (MDA)

Abstract

This research is aimed to detemine the effect of n-butanol fraction from lerak fruit (*Sapindus rarak* DC) to human sperm quality including sperm motility, viability, membrane integrity, and *malondialdehyde* (MDA) level in vitro. 12 human ejaculate was divided into 2 groups. 6 ejaculate was used to sperm motility, viability, and membrane integrity observation. 6 ejaculate was used to sperm MDA level observation. Control group was treated by NaCl 0,9%, and treatment group was treated by n-butanol fraction from lerak fruit in concentration 200, 400 and 600 µg/ml. Each observation was done a minute after treatment. Sperm motility was observed using light microscopy at 400x magnification. Sperm viability was observed staining with 1% eosin and 10% nigrosin.

Sperm membrane integrity was observed with hypo osmotic swelling (HOS) test. Sperm MDA level was detected by reaction with thiobarbituric acid and read at λ=535 nm. The data were analyzed by Brown-Forsythe test, α=0,05 and followed by Games-Howell test. The result show that n-butanol fraction from lerak fruit decrease sperm motility, viability, membrane integrity, and increase MDA level. The most optimum concentration of n-butanol fraction from lerak fruit which decrease human sperm quality is 600 µg/ml.

Key words: *Sapindus rarak* DC, human sperm, motility, viability, membrane integrity, and *malondialdehyde* (MDA) level.