FAKULTAS KEDOKTERAN
UNIVERSITAS PEMBANGUNAN NASIONAL "VETERAN" JAKARTA

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ANALISIS GEN *CYTOCHROME OXYDASE* I (COI), MOTILITAS, DAN VIABILITAS SPERMA TIKUS PUTIH (*Rattus norvegicus*) HIPERGLIKEMIA SETELAH PEMBERIAN EKSTRAK DAUN KELOR (*Moringa oleifera*)
RINCIAN HALAMAN (ix + 19 halaman, 27 tabel, 12 gambar, 10 lampiran)

ABSTRAK

Tujuan
Untuk menganalisis gen *Cytochrome Oxydase* I (COI), motilitas, dan viabilitas spermatozoa tikus putih (*Rattus norvegicus*) setelah diberikan ekstrak daun kelor.

Metode
Penelitian yang dilakukan merupakan penelitian eksperimental dengan jenis *true experimental design*. Rancangan eksperimen yang digunakan adalah *post test control group design*, yaitu pengamatan dilakukan sesudah perlakuan. Penelitian menganalisis ekspresi gen COI, motilitas, dan viabilitas sperma tikus hiperglikemia yang telah diberikan perlakuan ekstrak daun kelor (*Moringa oleifera*), kelompok perlakuan kemudian dibandingkan dengan kelompok kontrol. Hasil penelitian dilihat dari tingkat ekspresi gen pada kuantifikasi relatif melalui *comparative threshold cycle* (Ct) dengan menggunakan uji RT-PCR.

Hasil
Motilitas spermatozoa yang motil mencapai 52% terdapat pada kelompok K3. Persentase viabilitas spermatozoa hidup terbesar yaitu 77% yang terdapat pada kelompok K3. Ekspresi gen dibandingkan dengan *fold change* dengan angka 1 yang terdapat pada kelompok perlakuan normal atau K(-), nilai *fold change* yang mendekati angka tersebut terdapat pada kelompok K2

Kesimpulan
Berdasarkan hasil penelitian didapatkan hubungan yang signifikan antara ekspresi gen COI, motilitas, dan viabilitas spermatozoa tikus putih (*Rattus norvegicus*) setelah pemberian ekstrak daun kelor

Daftar Pustaka **:** 33 (2013-2023)
Kata Kunci **:** COI, *Moringa oleifera, Rattus norvegicus*, *comparative threshold cycle*

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ANALYSIS OF CYTOCHROME OXIDASE I (COI) GENE, SPERM MOTILITY, AND VIABILITY IN HYPERGLYCEMIC WHITE RATS (RATTUS NORVEGICUS) AFTER ADMINISTRATION OF MORINGA OLEIFERA LEAF EXTRACT

Details (ix + 77 pages, 19 tables, 12 figures, 10 appendices)

Abstract

Objective

To investigate the effects of moringa leaf extract on white rat (Rattus norvegicus) sperm, the Cytochrome Oxidase I (COI) gene expression, motility, and viability were analyzed.

Methods

This study utilized true experimental design as a type of experimental research. The post-test control group design was employed, where observations were made after the treatment. The research aimed to analyze the COI gene expression, motility, and viability of hyperglycemic rat sperm treated with Moringa oleifera (moringa leaf extract). The treatment group was then compared with the control group. The results of the research were observed through the relative quantification of gene expression using comparative threshold cycle (Ct) through RT-PCR.

Results

In group K3, the motility of motile sperm reached 52% and the largest percentage of live sperm viability, which is 77%, was also found in this group. Moreover, gene expression analysis showed values close to 1 (fold change) in group K2 when compared with the normal or K(-) treatment group.

Conclusion

After administering moringa leaf extract, a significant correlation was found between COI gene expression, motility, and viability of white rat sperm (Rattus norvegicus).

References: 33 (2013-2023)
Keywords: COI, Moringa oleifera, Rattus norvegicus, comparative threshold cycle