

**KADAR TESTOSTERON PADA KULTUR SEL LEYDIG TIKUS SPRAGUE
DAWLEY YANG DIINDUKSI OLEH ADVANCED GLYCATION END
PRODUCTS 200µg/mL DAN DIBERI GAMMA-MANGOSTIN 5µM**

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INTISARI

Latar Belakang: *Advanced glycation end products* (AGE) merupakan senyawa toksik bagi tubuh yang dapat menyebabkan kerusakan dan memicu respon inflamasi. Salah satu sel yang terkena dampak adalah sel Leydig, yaitu sel yang menghasilkan testosteron, yang terletak di interstisial testis. Ekstrak kulit *Garcinia mangostana* mengandung senyawa antioksidan *gamma-mangostin* yang mampu menurunkan respon inflamasi dan efek toksik AGE.

Tujuan Penelitian: mengamati efek pemberian *Gamma mangostin* sebagai agen antioksidan pada kultur sel Leydig tikus *Sprague Dawley*.

Metode: Analisis *experimental laboratory* data kadar testosteron pada kultur sel Leydig tikus *Sprague Dawley* yang diinduksi *Advanced glycation end products* dan diberi *gamma-mangostin* dibandingkan dengan yang tidak diberi *gamma-mangostin*. Pengolahan data dilakukan dengan menggunakan software SPSS Statistics 22.0 dengan uji statistik *one way ANOVA* untuk mengetahui kebermaknaan kadar testosteron pada tiap kelompok kultur sel Leydig

Hasil: Tidak terdapat perbedaan bermakna pada kadar testosteron kultur sel Leydig yang hanya diberi AGE (1,33 ng/10⁵ sel/24 jam) dengan yang diberi AGE dan *gamma-mangostin* (1,30 ng/10⁵ sel/24 jam) dengan nilai $p=0,535$.

Kesimpulan: Kadar testosteron pada kultur sel Leydig yang diinduksi AGE lebih rendah dibanding yang tidak diberi. Kadar testosteron kelompok kultur sel Leydig tikus *Sprague Dawley* yang diinduksi AGE dan diberi *gamma-mangostin* tidak memiliki perbedaan yang bermakna dibandingkan yang tidak diberi ($p>0,05$). Rerata kadar testosteron pada semua kelompok masuk dalam rentang kadar yang diharapkan (0,025-15 ng/10⁵ sel/24 jam).

Kata kunci: *kadar testosteron, kultur sel Leydig, tikus Sprague Dawley, Advanced glycation end products, gamma-mangostin.*

TESTOSTERONE LEVEL ON LEYDIG CELL CULTURE OF *SPRAGUE DAWLEY* RAT INDUCED BY *ADVANCED GLYCATION END PRODUCTS* 200µg/mL AND GIVEN *GAMMA-MANGOSTIN* 5µM

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ABSTRACT

Background: Advanced glycation end products (AGE) is a toxic compound on human body that can deteriorate and induce inflammatory response. One of the cells affected are Leydig cells, cells that produce testosterone and located in testis interstitial. Hull extract of *Garcinia mangostana* contains antioxidant compound *gamma-mangostin* that can decrease inflammatory response and toxic effect of AGE.

Objectives: to observe effect of *Gamma-mangostin* as antioxidant agent on Leydig cell culture of *Sprague Dawley* rat.

Methods: An experimental laborarory study on testosterone level data of Leydig cell culture *Sprague Dawley* rat induced by Advanced glycation end products and given *gamma-mangostin* compared to cell culture that are not given *gamma-mangostin*. Data processing by using SPSS Statistics 22.0 software by one way ANOVA statistical test to know significance of testosterone level on every Leydig cell culture group.

Result: No significant difference on testosterone level of Leydig cell culture that given AGE only (1,33 ng/10⁵ cells/24 hours) with group that given AGE dan *gamma-mangostin* (1,30 ng/10⁵ cells/24 hours) with p value p=0,535.

Conclusion: Testosterone level on Leydig cell culture induced by AGE is below than group that are not given. Testosterone level of *Sprague Dawley* Leydig cell culture groups that induced by AGE and given *gamma-mangostin* have no significant difference compared to group that are not given (p>0,05). Mean of testosterone level on all groups are inside expected value (0,025-15 ng/10⁵ cells/24 hours).

Keywords: *testosterone level, Leydig cell culture, Sprague Dawley rat, Advanced glycation end products, gamma-mangostin.*