

EXPRESSION OF LUTEINIZING HORMONE RECEPTOR (LHR) IN THE LEYDIG CELL CULTURE OF *SPRAGUE DAWLEY RAT* THAT INDUCED BY ADVANCED GLYCATION END-PRODUCT 200µg/ml AND GAMMA MANGOSTEEN 5µM

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Background: Advanced Glycation End Products (AGE) are protein or lipids that to be the result of a series of chemical reactions after an initial glycation reaction. AGE will cause cell destruction, which increasing Oxydative stress and inflamation. Gamma mangostin is a major bioactive compounds in mangosteen extract and one of the major substances that classified in *xanthone* derivates. It is contains antioxidant and can decrease inflammatory response that caused by AGE

Objectives: To look the expression of Luteinizing Hormone receptor (LHR) in the Leydig Cell Cultures of *Sprague Dawley* rat that induced by AGE and given Gamma Mangosteen. Then comparing with Leydig cell culture of *Sprague Dewley* that induced by AGE only.

Methods: Used an experimental laborarory study on expresion of Luteinizing Hormone Receptor (LHR) level data of Leydig cell culture *Sprague Dawley* rat that induced by Advanced glycation End-products and given gamma mangostin compared with leydig cell culture *Sprague Dawley* rat that induced by AGE only. Data processing by using SPSS aplication Statistics 22.0 by one way ANOVA statistical test to know significance of on expresion of Luteinizing Hormone Receptor (LHR) level on every Leydig cell culture group.

Result: No significant difference on expresion of Luteinizing Hormone Receptor (LHR) level of Leydig cell culture that only given AGE (7,79 pg/10⁵/24h) with group that given AGE dan gamma mangosteen (8,06 pg/10⁵/24h) with p value p=0,10.

Conclusion: The Expression of Luteinizing Hormone Receptor (LHR) level is higher on the leydig cell culture which given Advanced Glycation End-products compere with control (no treatment). After giving *gamma-mangostin*, the expresion of Luteinizing Hormone Receptor (LHR) level is higher then leydig cell culture which only given Advanced Glycation End-product. The "mean" of LHR levels in the all group, include in the Expected levels. (3.9 pg/10⁵/24h).



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Universitas Gadjah Mada, 2016 | Diunduh dari <http://etd.repository.ugm.ac.id/>

Keywords: Expresion of Luteinizing Hormone Receptor (LHR) level, Leydig cell culture, Sprague Dawley rat, Advanced glycation end products, gamma mangostin.



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EXPRESI RESEPTOR LUTEINIZING HORMONE (LHR) PADA KULTUR SEL LEYDIG TIKUS SPRAGUE DAWLEY RAT YANG DIINDUKSI ADVANCED GLYCATION END-PRODUCT (AGE) 200µg/ml AND GAMMA MANGOSTEEN 5µM

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INTISARI

Latar Belakang: Advanced Glycation End Products (AGE) adalah protein atau lipid yang menjadi hasil dari serangkaian reaksi kimia setelah awalan reaksi glikasi. AGE akan menyebabkan sesuatu kerusakan pada sel dengan peningkatan stres oksidatif dan inflamasi. *Gamma mangosteen* merupakan senyawa bioaktif utama pada ekstrak manggis dan merupakan salah satu zat utama pada klasifikasi turunan *xanthone*. Gamma mangostin mengandung antioksidan dan dapat menurunkan respon inflamasi yang di sebabkan AGE.

Tujuan Penelitian: Mengamati ekspresi dari reseptor hormon Luteinizing (LHR) pada kultur sel Leydig tikus *Sprague Dawley* yang diinduksi dengan AGE dan diberi Gamma Mangosteen. Lalu dibandingkan dengan kultur sel Leydig tikus *Sprague Dawley* yang hanya diberi AGE saja.

Metode: Analisis *experimental laboratory* data Ekspresi reseptor LH pada kultur sel Leydig tikus *Sprague Dawley* yang diinduksi *Advanced glycation end products* dan diberi *gamma mangosteen* dibandingkan dengan yang tidak diberi *gamma mangosteen*. 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 ekspresi reseptor LH yang hanya diberi AGE saja (7,79 pg/10⁵/24h) dengan kelompok yang diberi AGE dan *gamma mangosteen* (8,06 pg/10⁵/24h), dengan nilai p=0,10.

Kesimpulan: Ekspresi reseptor LH lebih tinggi pada kultur sel Leydig yang diberi AGE saja dibandingkan dengan kelompok kontrol (tidak diberi perlakuan). Setelah pemberian *gamma mangosteen*, kadar ekspresi reseptor LH lebih tinggi dibandingkan dengan kltur sel Leydigyang di beri AGE saja. Rerata kadar ekspresi reseptor Lh pada semua kelompok termasuk dalam rentang kadar yang diharapkan (3.9 pg/10⁵/24h).

Kata kunci: kadar ekspresi reseptor LH, kultur sel Leydig, tikus *Sprague Dawley*, *Advanced glycation end products*, *gamma mangosteen*.