

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

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**INTISARI**

**Latar Belakang:** *Advanced glycation end-product* (AGE) merupakan senyawa berbahaya hasil glikasi lanjutan protein dan lemak yang berperan dalam patofisiologi terjadinya atherosclerosis dan proses penuaan sel melalui proses inflamasi. Ekstrak kulit manggis mengandung senyawa gamma mangostin yang memiliki efek menurunkan respon inflamasi melalui inhibisi prostaglandin E2 (PGE2) dan menghambat lipopolisakarida.

**Tujuan Penelitian:** mengamati efek *Advanced glycation end-product* dan Gamma mangostin sebagai agen antioksidan pada kultur sel Leydig *Sprague Dawley* dalam ekspresi Reseptor *advanced glycation end-product* (RAGE)

**Metode:** Analisis *experimental laboratory* data kadar Ekspresi Reseptor AGE dengan menggunakan ELISA pada kultur sel Leydig tikus *Sprague Dawley* yang diinduksi *Advanced glycation end-product* (AGE) dan diberi gamma mangostin. Data diolah dengan menggunakan software SPSS Statistics 22.0 dengan uji statistik Kruskal-Wallis dan dilanjutkan uji *post hoc* Mann Whitney U.

**Hasil:** Dari analisis uji kruskal wallis didapatkan hasil yang signifikan diantara ketiga kelompok ( $p < 0.027$ ). Perbedaan bermakna didapatkan antara kelompok 1 dan 2, dan kelompok 1 dan 3 berdasarkan uji *post hoc* man whitney. Kadar RAGE pada kelompok 2 (11,38643 ng/10<sup>5</sup> sel/24 jam) mengalami penurunan dibanding kelompok 1 (14,4704 ng/10<sup>5</sup> sel/ 24 jam). Dan kelompok 3 memiliki nilai paling rendah (8,293333 ng/10<sup>5</sup> sel/24 jam)

**Kesimpulan:** RAGE pada kultur sel Leydig yang diinduksi *Advanced glycation end-product* (AGE) mengalami penurunan dibanding yang tidak diberi dan pemberian gamma mangostin menurunkan kadar ekspresi RAGE pada kultur sel Leydig yang diinduksi AGE

**Kata kunci:** *Receptor Advanced Glycation End Product (RAGE)*, *kultursel Leydig*, *tikus Sprague Dawley*, *Advanced glycation end-product (AGE)*, *gamma mangostin*.

**EXPRESSION RECEPTOR ADVANCED GLYCATION END-PRODUCT  
LEYDIG CELL CULTURE OF SPRAGUE DAWLEY RAT INDUCED BY  
ADVANCED GLYCATION END-PRODUCT 200 $\mu$ g/mL AND GIVEN GAMMA  
MANGOSTIN 5 $\mu$ M**

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**ABSTRACT**

**Background:** *Advanced glycation end-product (AGE)* is a toxic substance product of advanced glycation protein and lipid that have role in pathophysiology atherosclerosis and aging cell by means of inflammation. Extract mangosteen consist of gamma mangostin that have effect reduce inflammation by means of inhibit prostaglandin E2 (PGE2) and inhibit lipopolisakarida

**Objectives:** To observe effect of Advanced glycation end-product and Gamma mangostin as antioxidant agent on Leydig cell culture of Sprague Dawley rat

**Methods:** Experimental laboratory analysis on Expression Receptor AGE level data of leydig cell culture sprague dawley induced by Advanced glycation end-product and given gamma mangostin with ELISA. Data processing by using SPSS Statistics 22.0 software by Kruskal-Wallis statistical test and post hoc Mann Whitney U test

**Result:** Kruskal wallis test inform there is a significant different between 3 group ( $p < 0.027$ ). The different between group 1 and 2, and group 1 and 3 after post hoc man whitney test. Level RAGE group 2 (11,38643 ng/10<sup>5</sup> cell/ 24 hour) decrease if compare group 1 (14,4704 ng/10<sup>5</sup> cell/ 24 hour). And group 3 has the lowest level (8,293333 ng/10<sup>5</sup> cell/ 24 hour).

**Conclusion:** RAGE level of culture leydig cell induced by AGE lower than control and given gamma mangostin reduce level RAGE of culture leydig cell

**Keyword:** *Receptor Advanced Glycation End Product (RAGE), Leydig cell culture, Sprague Dawley rat, Advanced glycation end-product (AGE), gamma mangostin.*