

ABSTRACT**THE EFFECT OF BROCCOLY JUICE (*Brasica oleracea L. var italica*) ON BLOOD MDA LEVELS AND ENDHOTEL FUNCTION INTERSTITIAL TESTIC AND SEMINIFERUS TUBULUS TISSUE ON WISTAR MALE RAT PSYCHOLOGICAL STRESS MODEL**

Psychological stress which has an impact on oxidative stress and impaired endothelial function. Oxidative stress and endothelial dysfunction can lead to infertility. Broccoli with SFN as an active ingredient to prevent further damage due to endothelial dysfunction. The purpose of this study was to analyze the effect of broccoli juice (*Brasica oleracea L. var italica*) on blood MDA levels and endothelial function of interstitial testic and seminiferous tubules tissue in male white rats Wistar strain psychological stress model.

The design used in this study is the Randomized Post Test Only Control Group Design. There were 4 groups of mice, 2 groups of control, and 2 groups of treatment. Exposure to psychological stress by changing the watchful sleep pattern, so that the experimental animals experiencing oxidative stress were found, then administering broccoli juice to the treatment group with a single dose of 3.6 g / head.

The results showed significant data changes in decreasing MDA levels, expression of HIF 1 alpha leydig cells, HIF expression of 1 alpha sperm cells and expression of HIF 1 alpha seminiferous tubules with a P value of 0.000; 0.003; 0,000; 0.003. The conclusion of this study is that there is a significant effect between the provision of broccoli juice on MDA levels and the expression of HIF 1 alpha leydig cells, the expression of HIF 1 alpha spermatozoa cells and the expression of HIF 1 alpha seminiferous tubules exposed to psychological stress from sleep disorders.

The conclusion is that when viewed from the results of research data that exposure to psychological stress induced by reverse sleep patterns is proven to cause oxidative stress which causes endothelial dysfunction. And there is an effect between administering broccoli juice at a dose of 3.6 g / head on decreasing MDA levels, HIF 1 alpha expression of leydig cells, HIF 1 alpha expression of spermatozoa cells and expression of HIF 1 alpha seminiferous tubules that have been exposed to psychological stress.

Keywords: SFN, MDA, Leydig Cells, Spermatozoa Cells, Seminiferous Tubules

ABSTRAK**PENGARUH PEMBERIAN JUS BROKOLI (*Brasica oleracea L. var italica*)
TERHADAP KADAR MDA DARAH DAN FUNGSI ENDHOTEL
JARINGAN INTERSTISIAL TESTIS DAN JARINGAN TUBULUS
SEMINIFERUS PADA TIKUS JANTAN WISTAR
MODEL STRESS PSIKOLOGIS**

Stress psikologis yang memiliki dampak terhadap stress oksidatif dan gangguan fungsi endotel. Stress oksidatif dan disfungsi endotel mampu menimbulkan infertilitas. Brokoli dengan kandungan SFN sebagai bahan aktif untuk mencegah terjadinya kerusakan yang berlanjut akibat disfungsi endotel. Tujuan penelitian ini untuk menganalisis pengaruh pemberian jus Brokoli (*Brasica oleracea L. var italica*) terhadap kadar MDA darah dan fungsi endotel jaringan interstisial testis dan jaringan tubulus seminiferus pada tikus putih jantan *strain wistar* model stres psikologis.

Rancang bangun yang digunakan pada penelitian ini adalah *Randomized Post Test Only Control Group Design*. Terdapat 4 kelompok tikus, 2 kelompok kontrol, serta 2 kelompok perlakuan. Paparan stress psikologis dengan merubah pola tidur jaga, sehingga didapatkan kondisi hewan coba yang mengalami stres oksidatif, kemudian dilakukan pemberian jus brokoli pada kelompok perlakuan dengan dosis tunggal 3,6 g / ekor.

Hasil penelitian menunjukkan perubahan data yang signifikan pada penurunan kadar MDA, ekspresi HIF 1 alpha sel leydig, ekspresi HIF 1 alpha sel spermatozoa dan ekspresi HIF 1 alpha tubulus seminiferus dengan *P Value* 0,000; 0,003; 0,000; 0,003. Kesimpulan penelitian ini ialah terdapat pengaruh yang bermakna antara pemberian jus brokoli terhadap kadar MDA dan ekspresi HIF 1 alpha sel leydig, ekspresi HIF 1 alpha sel spermatozoa dan ekspresi HIF 1 alpha tubulus seminiferus yang dipapar stres psikologis gangguan tidur.

Kesimpulannya adalah jika dilihat dari hasil data penelitian bahwa ada paparan stress psikologis yang diinduksi pola tidur jaga terbalik terbukti menyebabkan stress oksidatif yang menyebabkan disfungsi endotel. Dan terdapat pengaruh antar pemberian jus brokoli dengan dosis 3,6 g / ekor terhadap penurunan kadar MDA, ekspresi HIF 1 alpha sel leydig, ekspresi HIF 1 alpha sel spermatozoa dan ekspresi HIF 1 alpha tubulus seminiferus yang telah terpapar stress psikologis.

Kata kunci :SFN, MDA, Sel Leydig, Sel Spermatozoa, Tubulus Seminiferus