

**PENGARUH PEMBERIAN BUBUK EKSTRAK KUNIR PUTIH
(*Curcuma mangga* Val.) TERHADAP KADAR ANTIOKSIDAN DALAM
DARAH TIKUS DIABETES**

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Intisari

Kunir putih mengandung antioksidan berupa kurkuminoid dan polifenol. Antioksidan adalah senyawa yang dapat melawan dan menetralkan radikal bebas sehingga dapat memperbaiki kerusakan oksidatif pada molekul biologis. Penelitian ini bertujuan untuk mengevaluasi kadar gula darah, kadar antioksidan, aktivitas inflamasi dan profil lipid darah pada tikus wistar.

Penelitian ini dilakukan dengan cara *in vivo* yaitu memberikan kunir putih pada tikus wistar. Tikus dilakukan pengambilan darah pada hari ke-1, hari ke-14 dan hari ke-28. Darah yang diambil kemudian dilakukan pengujian antioksidan (SOD dan MDA), anti-diabetes (gula darah, insulin, anti-inflamasi (IL-6, IL-8, TNF- α) dan profil lipid (L-cholesterol, H-cholesterol dan Trigliserida). Data yang diperoleh dihitung secara statistik dengan analisis *univariate* dan apabila terdapat perbedaan yang nyata antar perlakuan dilanjutkan dengan uji *Duncan's Multiple Range Test* (DMRT).

Hasil penelitian menunjukkan bahwa pemberian kunir putih pada tikus wistar selama 1 hari, 14 hari dan 28 hari berpengaruh terhadap kadar gula darah, kadar antioksidan, anti-inflamasi, dan profil lipid pada tikus. Hasil penelitian menunjukkan bahwa kunir putih mampu menurunkan kadar gula darah. Kunir putih juga berfungsi sebagai antioksidan, anti-inflamasi dan mampu menurunkan lipid darah tikus. Kelompok tikus yang diberi kunir putih menunjukkan adanya perubahan yang signifikan kadar antioksidan dan profil lipid dibanding tikus diabet yang diberi aquades. Tikus yang diberi kunir putih pada hari ke-28 didapatkan kadar glukosa 135,87 mg/dl, kadar MDA sebesar 5,49 nmol/ml, SOD sebesar 66,99%, kadar insulin 465,70 pg/ml, TNF- α sebesar 11,12 pg/ml, IL-6 sebesar 140,94 pg/ml sedangkan IL-8 sebesar 168,7 pg/ml, kadar kolesterol sebesar 142,77 mg/dl, kadar trigliserida sebesar 111,99 mg/dl, kadar HDL sebesar 45,37

mg/dl, Kadar LDL sebesar 27,53 mg/dl, kadar SGPT sebesar 27,51 U/L, kadar SGOT sebesar 63,60 U/L.

Kata kunci: kunir putih, *in vivo*, diabetes mellitus, antioksidan, antiinflamasi

**THE INFLUENCE OF EXTRACT POWDER WHITE SAFFRON
(*Curcuma mangga* Val.) TOWARDS THE RATE OF ANTIOXIDANT IN
THE BLOOD OF DIABETIC MICE**

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ABSTRACT

White Saffron (*Curcuma mangga* Val.) contains antioxidant of curcuminoid and polifenol. Antioxidant is a compound that can resist and neutralize free radicals, so it repairs the oxidative damage in biological molecules. The objective of the research is to evaluate the blood glucose, antioxidant, inflammatory activities and lipid profile in the blood's of wistar mice.

The research is conducted through *in vivo* by giving the white Saffron (*Curcuma mangga* Val.) to the wistar mice. The blood of wistar mice is taken on the 1st day, the 14th day, and the 28th day. Then, the taken blood is tested through the antioxidant analysis of SOD and MDA, anti-diabetic (blood glucose, insulin, anti-inflammation (IL-6, IL-8, TNF- α) and lipid profile (L-cholesterol, H-cholesterol, and Triglycerides). The taken data are calculated statistically through the univariate analysis and if there are real significant differences among the treatments, so it will be continued by the Duncan's Multiple Range Test (DMRT) analysis.

The result shows that giving the white Saffron (*Curcuma mangga* Val.) treatment to the wistar mice during the 1st day, the 14th day, and the 28th day affects the blood glucose level, the antioxidant level, anti-inflammation, and lipid profile of the wistar mice. The result of the research shows that the white Saffron (*Curcuma mangga* Val.) can reduce the blood glucose level. The white Saffron (*Curcuma mangga* Val.) can also function as the antioxidant, anti-inflammation and it is also able to reduce lipid on the blood mice. The group of wistar mice which is given the white Saffron (*Curcuma mangga* Val.) treatment shows the significant difference on the level of antioxidant and lipid profile compared to the diabetic mice which are given aquades treatment. The wistar mice which are given the white Saffron (*Curcuma mangga* Val.) treatment *on the 28th day* have

diabetic glucose 135,87 mg/dl , MDA level 5,49 nmol/ml , SOD 66,99%, insulin level 465,70 pg/ml, TNF- α 11,12 pg/ml, IL-6 140,94 pg/ml and IL-8 168,7 pg/ml, cholesterol level 142,77 mg/dl, triglycerides level 111,99 mg/dl, HDL 45,37 mg/dl, LDL 27,53 mg/dl, SGPT 27,51 U/L, and SGOT 63,60 U/L.

Keywords: white saffron, in vivo, diabetes mellitus, antioxidant, anti-inflammation