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Hypoglycemic Activity of Nano Particles from Temuru Leaves and Temuru(*Murraya Koenigii* (L.) Spreng) Leaf Extract on Alloxan Induced rats and Antioxidant Activity

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Abstract : The purpose of this study was to examine the hypoglycemic activity of nanoparticles and ethanol extract oftemuru leaves(*Murraya koenigii* (L.) Spreng) and measure the antioxidant activity of nano-particles and ethanol extract of temuru leaves. Nano particles oftemuru leaves were obtained by using the milling method.The characteristics of nano particles were analyzed using SEM (Scanning Electron Microscope) and PSA (Particle Size Analyzer), while the ethanol extract of temuru leaves obtained by maceration. The hypoglycemic test utilized mice that induced by alloxan 150 mg/kg intraperitoneally. The measurement of blood glucose levels (BGL) of mice was using the glucotesttools and determination of total blood cholesterol levels of mice was using enzymatic colorimetric method. Determination of antioxidant activity was using DPPH (2,2-diphenyl-1-picrylhidrazyl). Paired samples statistic analysis have shown that the mean of reduction of fasting bloodgluoselevel ingroups of mice that were given nano-particles and ethanol extract of temuru leaves significantly different from the diabetic control groups successively with significant value 0.003; 0.002, P <5%. Analysis of the antioxidant activity of ethanol extract of leaves temuru showed the $IC_{50}$of 34.16 ppm and $IC5_0$of nano particles of 328.42 ppm. The results showed that the nano particles and ethanol extract of the leaves can reduce the blood glucose level of mice. Antioxidant activity of ethanol extract stronger than nano particles of temuru leaves.

Keywords : *Murraya koenigii,*hypoglycemic, nano particles, blood glucose level, antioxidant.

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