The effect of Tithonia diversifolia extract against the level of nitric oxide in streptozotocin-nicotinamide-induced rats model

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Abstract	Background: One indication of microvascular dysfunction in diabetes mellitus (DM) is decreased nitric oxide (NO) levels. Tithonia diversifolia leaves (TDL) extract has been scientifically demonstrated to decrease glucose levels in diabetic rats.Objective: This study aims to examine the effect of TDL extract on NO levels in diabetic rats.Methods: True experimental with pre-post test control group design used 25 Sprague-Dawley rats. Its were divided into 5 groups: healthy control (K.1); diabetic control (K.2); diabetes rats with ethanol extract of TDL at a dose of 25 (K.3); 50 (K.4); and 100 mg/kg BW (K.5) for 28 days. We use a combination of nicotinamide (230 mg/kg BW) and streptozotocin (65 mg/kg BW) to induce diabetes mellitus. The blood serum was taken before and after extract administration. NO level was assessed using spectrophotometry. Paired T-test, Wilcoxon, one-way ANOVA, and post hoc LSD were performed for statistical analysis.Results: There were significant differences in NO levels before and after treatment in all groups unless K.5 (100 mg/kg BW). Furthermore, there was no significant difference in NO levels in the healthy control and the K.5 group but significant differences in other groups.Conclusion: TDL extract can prevent the decrease in NO level in diabetic rats model with the effective dose of 100 mg/kg BW.
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Author	Dr Dr FITRANTO ARJADI, S.Ked, M.Kes