

ABSTRACT

The number of diabetic patients in the world are increasing as well as in Indonesia. More than 90% of the patients suffer from non-insulin dependent diabetes mellitus or type 2 diabetes mellitus. Difficulties in finding anti-diabetics which are effective, tolerable by the patients, safe, and cost-effective cause people to try to find other alternative, such as taking traditional medicine like "mengkudu" (*Morinda citrifolia* L.). Previous studies only focus on how mengkudu decreases blood glucose level and how to normalize the function of cell membrane in the type 2 diabetes mellitus patients. However, there is still uncertainty of mengkudu's effect in increasing GLUT4 in the cells.

This study use male white rats Wistar strain. Total number of white rats involved in this study were 30 rats which treated : 10 rats as negative control group (no treatment, receive aquademineralisata only), 10 rats as positive control group and they are treated with long acting human insulin 0,35 U per body weight three times daily for 10 days. The last 10 rats acting as trial group and they are treated with long acting human insulin and "mengkudu" juice 13,5 g per body weight twice daily which were administered starting from the seventh to tenth day of long acting human insulin administration. After ten days of administration, blood glucose level of all rats was measured and all rats were killed afterwards. The next step is skeletal muscle tissue processing to be painted immunohistochemistry to GLUT4.

Conclusion of the result is "mengkudu" juice could increase the number of GLUT4 at male white rats Wistar strain hyperglycaemic (analog type 2 diabetes mellitus)..