doi.org/10.36721/PJPS.0000.00.0.REG.000-000.1

Evaluation of the combination of black rice bran ethanol extract and glimepiride in reducing blood sugar and protecting kidney, liver and pancreatic cells

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Abstract: Long-lasting hyperglycemia can potentially cause damage to organs such as the kidneys, liver and pancreas. Glimepiride (GLIM), as a drug of choice in the treatment of diabetes mellitus (DM), has the risk of decreasing the functioning of organs such as the kidneys, liver and pancreas. Black rice bran ethanol extract (EEBRB) with antioxidant content has been shown to protect the kidney, liver and pancreas organs. The aim of this study was to establish the effect of EEBRB on lowering fasting blood glucose (FBG) and protecting several organs after GLIM administration in alloxan (ALX)-induced hyperglycemic rats. A total of 20 rats were divided into 4 groups and treated for 21 days treatments using following preparations: normal control (NC), diabetic group (DC), GLIM 1 mg/ kgBW and combination of glimepiride 1mg/kgBW and EEBRB 50 mg/KgBW (GLBR). The results showed that the GLBR was able to lower blood glucose levels back to normal (<126 mg/dL) and protect kidney, liver and pancreas cells by increasing the amount in normal cells.

Keywords: Diabetes Mellitus, Black Rice Bran, Glimepiride, Alloxan, Antioxidant.

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