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Synthesis of novel acetyline derivative of metformine as DPP-4 inhibitors and study of its effects on sera of rabbits with diabetes

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The study aimed to prepare novel derivative of metformin similar to the work of the enzyme inhibitors dpp-4 and so the need for new inhibitors may be a side effect with less addition to linking drugs have a stronger effect on patients with diabetes and to study the impact of this derivative inside the living cell has been prepared derived through interaction metformin with propargyl chloride. It was to make sure the chemical structure by using analytical and spectral methods (FT-IR, ¹HNMR, and ¹³CNMR), and the results confirming the obtained structures, then purified by column chromatography by using silica gel as stationary phase and methanol as a mobile phase. The study is derived on the impact of rabbits where they were taking the 40 rabbits with similar weights and were divided into four groups (10 rabbits per group) were as follows, the first group G1 obtained as a control group, which did not have any things. The second group G2 has injected by aloxane a concentration of 120 mg per kg using syringes medical capacity of 3 ml to inject rabbits in the vein ear and after two hours of injection they were given glucose solution of 10%, the confirmed they injured rabbits diabetes by measuring blood sugar to 10 rabbits have been selected randomly and then it was taken two sets of this group, the third group G3 were given a drug sitagliptin concentration of 10 mg per kg, and the fourth group G4, were given the prepared derivative record a concentration of 8 mg per kg for 3 days and pulled blood samples after the last dose on the third day serum to isolate and carried out the study of biochemical and enzymatic changes were the results of statistical analysis showed a significant decrease in the level of glucose and inhibition for DPP-4 impact of the prepared derivative, and also showed a decrease in the level of cholesterol, triglyceride, LDL and VLDL, while the results showed increase in HDL compared with diabetic group.

Biography

Firas Sh. Al-joboury has completed his Ph.D. at the age of 29 years from Baghdad University, and he has upgrade to assistant professor at the age 34 years, and he is work as a head of physiology branch at veterinary medicine/Dyala University 10 years ago, and as a head of department of chemistry three years ago at college of education for pure science/Tikrit University. He has published 16 papers in different journals. His field synthesis of novel pro-drugs and designing novel drugs by depending drugs stereochemistry and the 3D of the active site of enzymes.

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