Protein expression of the rat plasma treated with Metformin and Glimepiride

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Among patients diagnosed with diabetes, 90% of them have type 2 disease, which is particularly is becoming increasingly prevalent. Because of the insidious nature of the disease and the slow progression of symptoms, diabetes often goes undiagnosed for years. Complications such as retinopathy, neuropathy, nephropathy often already present at the time of diagnose. Therefore, tight glycemic control is very important to reduce diabetes-related complications. To achieve glycemic control, many treatment approach has been used, treatment of oral antidiabetic agent such as Metformin and Glimperide is one of the most effective method in the medical management of type 2 diabetes. In this study, protein profile of diabete-induced rat plasma treated Metformin and Glimepiride was compared. Three SD rat groups is utilized for four weeks within treatment of oral agent: one group is treated-Metformin(250㎎/㎏), second group is with treated-Glimepiride(50㎎/㎏), and third group is treated-Metformin(250㎎/㎏) and Glimepiride(50㎎/㎏). To resolve the protein profile of rat which was treated oral agent, two-dimensional electrophoresis(2-DE) was used. Upon collection, plasma were desalted using Centricon of 3-KDa. Then the samples were consecutively undergone IEF, SDS-PAGE and Silver staining. The protein spots were analyzed using the image analysis software.

Reference

1. Stephen N. Davis, The role of glimepiride in the effective management of Type 2 diabetes(2004), Journal of Diabetes and its complications, Vol(18) 367-376.
2. Kaoruko Tada lida, Effective of thiazolidinediones and aortic endothelium

relaxation in diabetic GK rats(2003), AJP-Endocrinology and Metabolism, Vol(284)E1125-E1130.

3. Mark E. Cleasby, Metformin prevents the development of acute lipid-induced insulin resistance in the rat through altered hepatic signaling mechanism(2004), Diabetes, Vol(53)3258-3266.