

## Antihyperlipidemic effect of Esculetin on lipid metabolism in experimental diabetic rats

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Diabetes mellitus is a significant risk factor for cardiovascular complications. This study was undertaken to investigate the effect of esculetin on plasma glucose, lipid profile and enzymes involved in lipid metabolism in streptozotocin-induced diabetic rats. Diabetes was induced in adult male albino rats of the Wistar strain, weighing 200–220g by administration of streptozotocin (40 mg/kg of body weight) intraperitoneally. Diabetic rats exhibited increased blood glucose with significant decrease in plasma insulin levels. Elevation in the levels of total cholesterol, triglycerides, free fatty acids, phospholipids were increased in plasma and tissues (liver and kidney) and low density lipoprotein-cholesterol and very low density lipoprotein-cholesterol, and decreased high density lipoprotein-cholesterol were found in diabetic rats. In addition, the activity of 3-hydroxy 3-methylglutaryl coenzyme A (HMG-CoA) reductase increased significantly in the liver and kidney whereas the activities of lipoprotein lipase and lecithin cholesterol acyl transferase were decreased significantly in the plasma of diabetic rats. Treatment with esculetin at a dose of (40 mg/kg body weight) for 45 days altered the above changes and improved towards normal. These findings suggest that esculetin treatment has a therapeutic property by showing antihyperglycemic and antihyperlipidemic effect on STZ-diabetic rats.

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