Euphorbia neriifolia Linn. (Euphorbiaceae) is traditionally used to treat diabetes mellitus. The extract of Euphorbia neriifolia Linn. are having potential in the development of drug for diabetes due to their antidiabetic activity. Purpose of the study was to evaluate the antidiabetic antihyperlipidemic activity of ethanolic extracts of leaves of Euphorbia neriifolia Linn. (Euphorbiaceae). The present study was undertaken to evaluate the antidiabetic and antihyperlipidemic effect in streptozotocin-nicotinamide and high fat diet-streptozotocin (HFD-STZ) induced type-2 diabetic rats. Albino rats weighing 150-200 gm and Sprague Dawley rats weighing 200-250 gm. Experimental diabetes in streptozotocin-nicotinamide was induced by a single intraperitoneal injection of streptozotocin (60 mg/kg), 15 minutes after the i.p. administration of 120mg/kg nicotinamide and in HFD-STZ, two weeks of HFD rats were given with intraperitonal injection of streptozotocin (STZ) (35mg/kg body weight). The purpose of this study was to examine the effect of repeated oral administration of the ethanolic extract of Euphorbia neriifolia Linn at a dose of (200 and 400 mg/kg) on body weight, fasting blood glucose levels, lipid metabolism, insulin, liver glycogen and glycated hemoglobin in type-2 diabetic rats. After 15 days in STZ-nicotinamide and 21 days in HFD-STZ, repeated oral administration of 400mg and 200mg/kg of Euphorbia neriifolia ethanolic extract (ENEE) produced a significant decrease on body weight, fasting blood glucose, triglyceride, total cholesterol, LDL, VLDL and glycated hemoglobin in HFD-STZ and STZ-nicotinamide type-2 diabetic rats, on the other hand there was significant increase in HDL levels and liver glycogen. Serum insulin was decreased and increased in STZ-nicotinamide and HFD-STZ diabetic rats and was improved by treatment of ENEE. Glibenclamide 2.5mg/kg,p.o was used as standard drug. In oral glucose tolerance test, reduction of fasting blood glucose levels took place from 60 min of extract administration in above both models. We concluded that the ethanolic extract of Euphorbia neriifolia ethanolic extract exhibits dose dependent anti diabetic potential along with potent lipid lowering effect after repeated oral administration.

Key Words: Euphorbia neriifolia, high fat diet-streptozotocin, nicotinamide, glibenclamide.