IJARSCT
International Journal of Advanced Research in Science, Communication and Technology
International Open-Access, Double-Blind, Peer-Reviewed, Refereed, Multidisciplinary Online Journal
ISSN: 2581-9429
Volume 5, Issue 6, May 2025
Impact Factor: 7.67

Bioevaluation of Anti-Diabetic Potential of *Jatropha Integremma in* Streptozotocin Induced Diabetic Rats

Dr. Nitin I. Kochar, Miss Aarti N.Dambhe, Dr.Deepak S. Mohale,
Dr. Abhijit V.Shrirao, Dr. Anil V. Chandewar
Department of Pharmacology
Pataldhamal Wadhwani College Of Pharmacy, Yavatmal, India

Abstract: *The global prevalence of diabetes mellitus necessitates the exploration of novel therapeutic agents, particularly from natural sources. This study investigated the anti-diabetic potential of the methanolic leaf extract of Jatropha integerrima in streptozotocin (STZ)-induced diabetic Sprague Dawley rats. Diabetes was induced by a single intravenous injection of STZ (60 mg/kg). Diabetic rats were treated orally with the methanolic extract at doses of 100 mg/kg and 200 mg/kg, and metformin (100 mg/kg) as a standard drug, for 21 days. Blood glucose levels and body weight were monitored at regular intervals. Preliminary phytochemical screening of the extract revealed the presence of alkaloids, flavonoids, carbohydrates, steroids, and tannins. STZ-induced diabetic rats exhibited significant hyperglycemia and weight loss compared to the normal control group ($p<0.01$). Treatment with both doses of Jatropha integerrima extract significantly reduced blood glucose levels ($p<0.05$ for 100 mg/kg and $p<0.01$ for 200 mg/kg) and attenuated weight loss compared to the untreated diabetic control group. The high dose of the extract showed a more pronounced effect, comparable to that of metformin. These findings suggest that the methanolic leaf extract of Jatropha integerrima possesses significant hypoglycemic potential, likely attributed to its phytochemical constituents, particularly flavonoids. Further studies are warranted to isolate and identify the active compounds and elucidate their precise mechanisms of action.*

Keywords: Jatropha integerrima, anti-diabetic, streptozotocin, diabetic rats, flavonoids, blood glucose, body weight

DOI: 10.48175/IJARSCT-26711