Abstract
In India, the decoction of kernels of *Eugenia jambolana* (EJ) and extracts of *Tinospora cordifolia* (TC) are used as a household remedy for diabetes. These also form constituents of many herbal formulations for diabetes that are marketed in this country. The anti-hyperglycemic effect of aqueous and alcoholic extracts as well as lyophilized powder of these two plants was evaluated in diabetic animals using different doses of diabetogenic agents for varying duration (21–120 days) so as to assess their effect in mild (plasma sugar < 180 mg:dl, duration 21 days), moderate (plasma sugar < 280 mg:dl, duration 120 days) and severe (plasma sugar < 400 mg:dl, duration 60 days) diabetes mellitus. In the pilot study (mild diabetes), maximum reduction of 73.51 and 70.37% in glucose levels was seen in animals receiving 200 mg:kg per day of lyophilized powder of EJ and 400 mg:kg per day of aqueous extract of TC after 3 and 15 weeks of treatment, respectively. There percent reduction in glucose decreased significantly in the moderate and severe diabetes; 55.62 and 17.72% for EJ and 48.81 and 0% for TC at the similar time intervals. The alteration in hepatic and skeletal muscle glycogen content and hepatic glucokinase, hexokinase, glucose-6-phosphate and phosphofructokinase levels in diabetic mice were partially restored by EJ but not by TC. The mechanism of action of EJ and TC is discussed.