SUMMARY

Anti-diabetic activity of the selected plants of family *Asteraceae* (*Blumea lacera, Bidens tripartitus, Achillea millefolium* and *Laggera aurita*) and family *Acanthaceae* (*Ruellia tuberosa* and *Adhatoda vasica*) was evaluated using alloxan-induced diabetic rabbits *(Oryctolagus cuniculus)* and *Swiss albino* rats. Bioassay-guided fractionation of active fractions of selected plants yielded hesperetin-7-rutinoside **(1)** from *B. lacera*; 4-allyl-2-methoxyphenol **(2)**, 4-hydroxy-3-methoxy cinnamic acid **(3)** and 3,4-dihydroxy cinnamic acid **(4)** from *Bidens tripartitus*; 6,10,14-trimethyl-2-pentadecanone **(5)** and 4-hydroxy-3-methoxy benzoic acid **(6)** from *R. tuberosa*; 1,2,3,9-tetrahydropyrollo[2,1-b]quinazoline-3-ol **(7)** from *A. vasica*; 5-(1,2-dihydroxyethyl)-3,4-dihydroxyfuran-2(5*H*)-one **(8)** from *A. millefolium*; Stigmasta-6,22-diene-3-ol **(9)** and 2-(3,4-dihydroxyphnyl)-3,5,7-trihydroxy-4*H*-chromen-4-one **(10)** from *L. aurita*. The structures of purified compounds were elucidated by spectroscopic techniques. Among the purified compounds, nine compounds significantly reduced blood glucose level at different doses. Anti-diabetic activity of bioactive compounds was in the order; 2-(3,4-dihydroxyphnyl)-3,5,7-trihydroxy-4*H*-chromen-4-one **(10)** > hesperetin-7-rutinoside **(1)** > 3,4-dihydroxy cinnamic acid **(4)** > 5-(1,2-dihydroxyethyl)-3,4-dihydroxyfuran-2(5*H*)-one **(8)** > stigmasta-6,22-diene-3-ol **(9)** > 1,2,3,9-tetrahydropyrollo[2,1-b]quinazoline-3-ol **(7)** > 4-hydroxy-3-methoxy benzoic acid **(6)** > 4-hydroxy-3-methoxy cinnamic acid **(3)** > 4-allyl-2-methoxyphenol **(2).** The results were compared with the standard drug tolbutamide (100 mg/kg). The present results show validity of the use of the selected plants and suggested that purified compounds in part are responsible for the anti-diabetic activity in the extracts of plants.