

Saponins from the Fruits of *Solanum anguivi* Reverse Hyperglycemia, Hyperlipidemia and Increase Antioxidant Status in Streptozotocin Induced Diabetic Rats

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Abstract : This work investigated the antihyperglycemic, antioxidant and antihyperlipidemic effects of saponins from the fruit of *Solanum anguivi*, a plant generally used in folk medicine to treat diabetes and hypertension and to compare its effect with metformin in streptozotocin (STZ)-induced diabetic rats. Diabetes was induced in albino rats by administration of STZ (65 mg/kg) intraperitoneally. Saponin (40 and 100 mg/kg) was administered by oral gavage once daily for 21 days. Metformin (200 mg/kg b.w.) was administered as the positive control. The effect of saponin on blood glucose, serum lipids and enzymatic antioxidants defense systems, like superoxide dismutase (SOD), catalase (CAT), as well as MDA levels in serum, liver and pancreas were studied. Saponins from *S. anguivi* fruits reduced the blood glucose, total cholesterol (TC), triglycerides (TG) and low-density lipoprotein (LDL) levels in STZ-diabetic rats. They also significantly abolished the increase in MDA level in serum, liver and pancreas of diabetic rats. The activities of SOD and CAT in serum, liver and pancreas were significantly increased as well as concentration of HDL in the serum. Metformin had the same effect as saponin but saponins seems to be more potent in reducing serum TC, TG, LDL, and MDA, and increasing SOD and CAT. Conclusions: These results suggest that saponins from *S. anguivi* fruits have anti-diabetic and antihypercholesterolemic, antihypertriglyceridemic antiperoxidative activities mediated through their antioxidant properties. Also, saponins appeared to have more hypolipidemic, antiperoxidative and antioxidant activity than metformin.

Keywords : saponin, diabetes, metformin, streptozotocin, *Solanum anguivi*

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