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Secoisolariciresinol, a Potent Hypoglycemic Agent from the Wood of *Taxus yunnanensis*

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[Introduction] Diabetes mellitus is a metabolic disorder affecting the metabolism of carbohydrate, fat and protein. It comes as a leading cause for human death and has been reported to affect 10% population of the world. There is still lack of reliable drugs for the treatment of diabetes patients except for insulin or some hypoglycemic agents with various side effects. There are several medicinal plants reported to be used traditionally for the treatment of diabetes patients in different ethnic societies of Asia, Africa and the South America. *Taxus yunnanensis* Cheng et L. K. Fu (Taxaceae), an evergreen tree commonly known as "Hongdoushan" and mainly distributed in Yunnan Province of People's Republic of China, is one of such plants. The wood of *T. yunnanensis* has been used as a traditional Chinese medicine in several ethnic society of Yunnan Province for the treatment of various diseases. In the present study we investigated the hypoglycemic activity of the wood of *T. yunnanensis*.

[Result and Discussion] The wood of *T. yunnanensis* was successfully extracted with water, water/MeOH (1:1) and MeOH to give respective extracts. Hypoglycemic activities of the MeOH and water extracts on intraperitoneal administration were examined on streptozotocin (STZ)-induced diabetic rats. The water extract possessed significant hypoglycemic activity at a 100 mg/kg dose to lower the blood glucose level by 33.7% compared to that of the diabetic rats before administration of the extract. Further purification of the water extract led us to the isolation of secoisolariciresinol (0.65% in dry material) as a major component of the wood. The hypoglycemic effect of secoisolariciresinol was further investigated on the same animal model. The hypoglycemic effect of secoisolariciresinol at a 100 mg/kg dose in STZ-rats was 33.4%, being similar to those of the mixture of 200 mg/kg of tolbutamide and 1 mg/kg of buformin (24.0% compared to the initial level) used as a positive control.