Antidiabetic phytoconstituents and cytotoxicity of *Gymnema inodorum* (Lour.) Decne leaf extract

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**Abstract:** Gymnemic acid (GA) is known as the antidiabetic phytoconstituent in *Gymnema* species, and is used for standardization and quality control. Recently, a number of nutraceutical products of *G. inodorum* (Lour.) Decne. (GI) are available in Thailand. However, the standardized GA content and the safety usage guidelines for GI have yet to be published on. The aims of this study were to investigate the amount of GA constituent and to characterize the *in vitro* cytotoxicity of GI extract. The total GA was extracted from dried GI leaves (Jomthong District, Chiang Mai Province, Thailand) by ethanol and subcritical water (SCW) methods, and analyzed by liquid chromatography/electrospray ionization mass spectroscopy method. The calculation of total GA was based on aglycone gymnemagenin. The cytotoxicity assay of the GI extracts at 0-500 μg/mL was carried out on Caco2 cells by MTT assay. The results showed that the GI extracts obtained from both extraction methods contained total GA less than 0.01% wt. The Caco2 cells showed 100% survival in the ethanolic and SCW extracts at a concentration up to 62.5 μg/mL and 500 μg/mL, respectively. Our results imply that the active component of the GI extract is not gymnemic acid. Therefore, the active constituent and antidiabetic efficacy of *G. inodorum* will have to be studied further.

**Keywords:** *Gymnema inodorum*; Gymnemic acid; *In vitro* cytotoxicity; Mass spectroscopy