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Urine and plasma metabolomics study on potential hepatotoxic biomarkers identification in rats induced by *Gynura segetum*

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Abstract

Ethnopharmacological relevance: *Gynura segetum* (*GS*) is an herbal medicine containing Pyrrolizidine Alkaloids (PAs) that causes hepatic sinusoidal obstruction syndrome (HSOS).

Aim of the study: To discover potential biomarkers and metabolic mechanisms involved in the hepatotoxicity induced by *GS*.

Methods: SD rats were randomly divided into 4 groups including Saline, the decoction of *GS* high, medium and low dosage at dosages of 3.75 g • kg⁻¹, 7.5 g • kg⁻¹ and 15 g • kg⁻¹. A metabolomics approach using Ultrapformance Liquid Chromatography -Quadrupole-Time-of-Flight / Mass Spectrometry (UPLC-Q-TOF/MS) was developed to perform the plasma and urinary metabolic profiling analysis, and identified differential metabolites by comparing the saline control group and decoction of *GS* groups.

Results: The herbal was presented dosage-dependent led to ingravescence of hepatotoxicity after the rats were consecutively given with the decoction of *GS* at varied dosages. A total of 18 differential metabolites of decoction of *GS*-induced hepatotoxicity were identified, while

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