

Poster

Cytotoxic Flavonoids from the Bark of *Lonchocarpus haberi* from Monteverde, Costa Rica

Caitlin Cassidy^a, Bernhard Vogler^a, Jennifer Schmidt Werka^a, William N. Setzer^a

^aDepartment of Chemistry, University of Alabama in Huntsville, Huntsville, AL 35899, USA

Introduction. Higher plants serve as important sources of new drugs. About 80% of the world's population relies predominantly on plants and plant extracts for health care. There are more than 120 important prescription medicines in the United States based on plant-derived drugs (about 25% of the total). Screening for new compounds, however, poses the challenge of repeatedly finding already known compounds with previously described activity. To cope with this challenge hyphenated chromatographic methods like high performance liquid chromatographic-mass spectrometry (HPLC-MS) have been used as dereplication tools. It has also been successfully demonstrated to use high-performance liquid chromatographic-nuclear magnetic resonance spectroscopic (HPLC-NMR) as a dereplication tool [1].

Objectives. To examine the crude bark extract of *Lonchocarpus haberi* using HPLC-NMR methods.

Methods. The crude acetone bark extract of *Lonchocarpus haberi* (Fabaceae, Papilionoideae) showed in-vitro cytotoxic activity against Hep G2, PC-3, and Hs578T human tumor cell lines. To demonstrate the feasibility of HPLC-NMR as a dereplication tool we analyzed the crude extract of *Lonchocarpus haberi* (Fabaceae, Papilionoideae) with HPLC-NMR methods.

Results. Analysis of the HPLC-NMR spectra revealed a set of prenylated aromatic compounds. Subsequent bioassay guided isolation and characterization using 2D-NMR methods confirmed the proposed structures and indicated the crude extract to be composed largely of flavonoids.

Conclusion. Using information rich HPLC-NMR methods can significantly reduce the time to correlate biological activity with chemical structure. Furthermore it reduces the amount of sample necessary for the study manifold.

Keywords: *Lonchocarpus haberi*, Costa Rica, cytotoxicity, dereplication, HPLC-NMR

Selected References

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Presenting Author: Caitlin Cassidy, Caitlin@knology.net