

ANTIMYCOBACTERIAL ACTIVITY OF *LASERPITIUM SILER* L. ROOTS

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The widespread re-emergence of tuberculosis and prevalence of multidrug-resistant (MDR) mycobacterial strains requires the development of new effective agents against this dangerous disease. Plants are an excellent source for a variety of new lead compounds. After an antimycobacterial pre-screening using a minimum inhibitory concentration (MIC) assay, the roots from *Laserpitium siler* L. (*Apiaceae*) were chosen for further investigations as the hexane and dichloromethane extracts of the roots exhibited good activities against fast-growing mycobacteria (MIC = 64 µg/ml).

Dereplication for polyacetylenes and unsaturated fatty acids was carried out by GC-MS [1,2]. Bioassay-guided fractionation produced active fractions with two-fold decreased MICs which revealed that more compounds might act synergistically. Continuous fractionation led to the isolation of two compounds. The structure of the main compound (**1**) was determined by 1D and 2D NMR and was identified as isomontanolide, which is a known compound of *L. siler* [3]. It showed reduced bacterial growth at 128 µg/ml. The minor compound (**2**) was active at 64 µg/ml. GC-MS analysis of the most active fraction let us assume that falcarinol and other polyacetylenes might also contribute to the antimycobacterial activity of the underground parts of *L. siler*. The structure elucidation of (**2**) is still in progress.

- [1] Stavri M, Schneider R, O'Donnell G, Lechner D, Bucar F, Gibbons S. The Antimycobacterial components of Hops (*Humulus lupulus*) and their Dereplication. *Phytother. Res.* 2004; 18: 774-6.
- [2] Schinkovitz A. Antimykobakterielle Wirkstoffe verschiedener Arzneipflanzen. Inauguraldissertation, April 2004, Naturwissenschaftliche Fakultät der Karl-Franzens-Universität Graz.
- [3] Holub M, Motl O, Samek Z, Herout V. Terpenes. CCIV. Structure of two sesquiterpenic lactones, isomontanolide and acetylisomontanolide from *Laserpitium siler* L. *Collection Czechoslov. Chem. Commun.* 1972; 37:1186-94.