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RESEARCH AREA

Natural products play an important role in drug discovery because of their unmatched structural diversity, amazing, and often complex structures. The aim of our group is to perform purposeful research by rational selection of plant extracts and compounds to be isolated, in order to obtain efficiently new secondary plant metabolites, which are perspective for drug discovery. Literature data, ethnomedicinal knowledge, results of screen investigations and metabolomic approaches are considered for selection of plant species. Compounds are isolated from the very complex multi-component extracts exhibiting efficacy in the used tests, with the aid of different chromatographic methods by guidance of bioassay. The structures of the purified compounds are determined by means of spectroscopic methods (NMR and MS). The biological activity is usually investigated in collaborations.

TECHNIQUES AVAILABLE IN THE LAB

Solid-solid and solid-liquid extraction techniques, evaporators; chromatographic techniques (OCC, GC, VLC, CPC, Flash, SE, SFC, MPLC, HPLC) coupled with UV-Vis, PDA, light scattering and MS detectors; ESIMS, HRMS, 1D and 2D NMR for structure elucidation; microplate reader, bioassays for antimicrobial, antitumor, ion channel activity in collaboration.

SELECTED PUBLICATIONS

Ványolós, A., Dékány, M., Kovács, B.t, Krámos, B., Bérdi, P., Zupkó, I., **Hohmann, J.**, Béni Z. (2016) Gymnopeptides A and B, cyclic octadecapeptides from the mushroom Gymnopus fusipes. **Org Lett 18:** 2688-2691.

Vasas, A., Forgo, P., Orvos, P., Tálosi, L., Csorba, A., Pinke, G., **Hohmann, J**. (2016) Myrsinane, premyrsinane, and cyclomyrsinane diterpenes from Euphorbia falcata as potassium ion channel inhibitors with selective G protein-activated inwardly rectifying ion channel (GIRK) blocking effects. **J Nat Prod 79:** 1990-2004.

Hajdu, Z., Nicolussi, S., Rau, M., Lorantfy, L., Forgo, P., **Hohmann, J.**, Csupor, D., Gertsch, J. (2014) Identification of endocannabinoid system-modulating N-alkylamides from Heliopsis helianthoides var. scabra and Lepidium meyenii. **J Nat Prod 77:** 1663-1669.

Vasas, A., Rédei, D., Csupor, D., Molnar, J., **Hohmann, J.** (2012) Diterpenes from European Euphorbia species serving as prototypes for natural-product-based drug discovery. **Eur J Org Chem 2012:** 5115-5130.

Hohmann, J., Molnár, J., Rédei, D., Evanics, F., Forgo, P., Kálmán, A., Argay, G., Szabó, P. (2002) Discovery and biological evaluation of a new family of potent modulators of multidrug resistance: reversal of multidrug resistance of mouse lymphoma cells by new natural jatrophane diterpenoids isolated from Euphorbia species. **J Med Chem 45:** 2425-2431.