

4th Symposium of Young Researchers on Pharmacognosy

# BOOK OF ABSTRACTS

(ed. Judit Hohmann)

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**Structure elucidation of diterpenoids isolated from three *Plectranthus sensu lato* species**

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*Plectranthus sensu lato* (Lamiaceae) represents a large and widespread genus which comprises more than 400 semi-succulent to succulent herbs and shrubs with a significant diversity of its use in traditional medicine including mainly the treatment of various diseases of digestive tract, respiratory tract and skin [1, 2]. The genus is well-known as a source of diterpenoids. Until now, more than 350 highly oxygenated diterpenoids from abietane, beyerene, cembrane, clerodane, halimane, icetexane, kaurane, labdane, pimarane, and phyllocladane classes have been reported within the genus *Plectranthus s.l.*, with almost 70% of them belonging to the abietane class [3].

Our phytochemical study aiming to acquire bioactive substances from the methanolic extracts of the aerial parts of *Coleus forsteri* 'Marginatus', *P. ciliatus*, and *C. comosus* led to the isolation of 14 diterpenoids from abietane, *ent*-kaurane and *ent*-clerodane classes. Three compounds were isolated from a natural source for the first time and the structure of one known compound was revised. The structures of isolated diterpenoids were elucidated by extensive analysis of mass spectrometric and nuclear magnetic resonance (NMR) spectroscopic data. The relative configurations were inferred from <sup>1</sup>H - <sup>1</sup>H *J*-values and NOESY correlations. Circular dichroism spectroscopy was used to determine the absolute configuration.

**References**

- [1] Paton, A, et al. *PhytoKeys* **2019**, 129:1–158. doi: 10.3897/phytokeys.129.34988
- [2] Lukhoba, CW, et al. *J Ethnopharmacol* **2006**, 103(1):1–24. doi: 10.1016/j.jep.2005.09.011
- [3] Gáborová, M, et al. *Molecules* **2021**, 27(1):166. doi: 10.3390/molecules27010166

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