extracts obtained from MSL flower buds, previously collected at the UMCS Botanical Garden (Lublin, Poland), was performed using coupled chromatographic (RP-LC), spectroscopic (PDA) and mass spectrometric (QTOF/MS-MS) techniques. At the same time, the total phenolic content (TPC) and antiradical capacity of MSL extracts were evaluated using Folin-Ciocalteu and DPPH assays, respectively. To ensure the highest recovery of phenolic compounds from MSL flower buds, ultrasound-assisted extraction (UAE) was used with optimised extraction parameters (temperature, extraction time, composition of aqueous-ethanol extractants and solvent-to-solid ratio), controlled by a response surface methodology (RSM) protocol. As a result, the highest polyphenolic content of MSL extracts were determined for preparations obtained using an extraction solvent (ethanol) in the concentration range of 63 – 82 % (optimum 66.82 %, v/v), solvent/herbal substance ratio > 45 mL/g (optimum 46.82 mL/g), and UAE time of
55.2 min. Detailed phytochemical LC-MS studies revealed the presence of significant amounts of polyphenols (with different types of molecular structure) in MSL flower buds, namely hydroxybenzoic (protocatechuic, vanillic, p-hydroxybenzoic) and hydroxycinnamic (chlorogenic) acids, phenylethanoids (acteoside, echinacoside, yulanoside B), flavonoids (rutoside, quercitrin, isoquercitrin, nicotiflorin, isorhamnetin 3-O-glucoside) and lignans (magnolin and fargesin derivatives). Simultaneous phytochemical and biological profiling confirmed that MSL flower buds could serve as a potential source of bioactive polyphenolic antioxidants with promising therapeutic effects.

Conflict of Interest The authors declare no conflict of interest.

P-078 Evaluation of Phenolic compounds in Perilla (*Perilla frutescens*) Germplasm from Korea

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DOI 10.1055/s-0043-1773962

Perilla (*Perilla frutescens)* is an annual herb plant and oil seed crop belonging to the Lamiaceae and is native to regions of Asia. The leaves of perilla (*P. frutescens* var. *frutescens*) are used as vegetables and pickles in Korea, whereas those of shiso (*P. frutescens* var. *crispa*) are more often used in China and Japan for medicine and food flavouring. The leaf of Perilla is a rich source of phenolic compounds, including rosmarinic acid and scutellarin, but there is still a lack of quantitative information concerning the contents of phenolic compounds. Rosmarinic acid is the most abundant phenolic compound, and scutellarin is the second most abundant in perilla. We investigated individual phenolic compounds using Ultra-High Performance Liquid Chromatography (UPLC) and evaluated major phenolic compounds in 115 perilla germplasm accessions collected from Korea. Wide variations in scutellarein-7-O-glucuronide (636.24 to 1933.62 mg/100 g), luteolin-7-O-glucuronide (73.88 to 664.23 mg/100g), apigenin-7-O-glucuronide (60.49 to 588.07mg/100 g), caffeic acid (2.94 to 19.41 mg/100 g) and rosmarinic acid (1274.08 to 5189.86 mg/100 g) in perilla and scutellarein-7-O-glucuronide (356.07 to 1949.91 mg/100 g), luteolin-7-O-glucuronide (67.63 to 563.84 mg/100g), apigenin-7-O-glucuronide (46.32 to 404.23 mg/100g), caffeic acid (3.73 to 72.25 mg/100g) and rosmarinic acid (1609.47 to 5535.59 mg/100g) in shiso were observed but there needs to be another step in the analysis of the minor contents of these similar compounds. The data on higher concentrations of phenolic compounds can provide baseline information for evaluating the phytochemicals of perilla and improving varieties.

P-079 Unravelling the ecotype influence on metabolomics and toxicity of *Corema album* L.

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DOI 10.1055/s-0043-1773963

Previous work showed relevant radical scavenging activities of ethanol and acetone extracts of *Corema album*[1]. This work expended upon that work by evaluating the ecotype influence on metabolomics and toxicity of methanol leaf extracts of *Corema album*. Leaves were collected from adult plants from populations located in two distinct areas: east (CAE) and west (CAW) coast of Southern Portugal. Extracts were evaluated for metabolomics by LC-ESI-HRMS/MS and toxicity towards murine RAW 264.7 macrophages, murine bone marrow stromal [S17], human embryonic kidney [HEK 293] and human hepatocellular carcinoma [HepG2] cells. Untargeted metabolomics revealed significant differences in the composition of the extracts; however pinocembrin was the major compound in both. Both extracts were toxic against tested cells. Our results suggest that *C. album* contains bioactive polyphenolic compounds with antioxidant and cytotoxic properties that could be further explored in the pharmaceutical area.

Funding This work received Portuguese national funds from FCT – Foundation for Science and Technology through projects UIDB/04326/2020, UIDP/04326/2020, and LA/P/0101/2020, the PhD grant (UI/BD/151301/2121: EF), FCT program contract (UIDP/04326/2020: MJR) and FCT Scientific Employment Stimulus (CEECIND/00425/2017: LC).

Conflict of Interest The authors declare no conflict of interest.

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P-080 Medicinal Centauri Honey: a promising ingredient?

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DOI 10.1055/s-0043-1773964

Honey is a natural product with antioxidant and antimicrobial properties, has been used as a medicinal substance for centuries. Thisnatural product is mainly composed of a supersaturated solution of sugars, containing low water content and trace amounts of bioactive compounds. The flower source, climate, geographical origin, harvesting process and storage conditions are factors that influence the composition of the nectar, leading to significant changes in the chemical composition, physical properties, and bioactivity of honey[1]. Centauri Honey is harvested from bee colonies located in the wild Alps of Turkey´s mountainous region, approximately 2,500 meters above the Black Sea. The

bees live in caves far from human settlements and other bees, and they have access to medicinal endemic blooms throughout the year.
The aim of this work was to investigate the quality, physicochemical, nutritional parameters, and bioactivity of honey. The quality and physiochemical parameters was analysed by colour, moisture content, conductivity, pH and acidity, 5-HMF (5-Hydroxymethylfurfural), diastase index and proline. The nutritional values were determined assessing ash, protein content, sugars, carbohydrates and energy. The biological activity was evaluated through the antioxidant, antimicrobial activity (broth microdilution method) and cytotoxicity in cell lines (AGS, CaCo-2, MCF-7, NCI-H460, PLP2, HFF-2, and HaCat), and anti-inflammatory activity (using RAW 264.7 macrophages).
Further studies are ongoing to scientifically validate the medicinal properties of Centauri Honey due to its exceptional chemical composition and thus to become an innovative Ingredient.
Conflict of Interest The authors declare no conflict of interest.

P-081 A study on the triterpenoid constituents in *Erica Erigena*

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DOI 10.1055/s-0043-1773965
E. erigena (Ericaceae), formerly known as 'Mediterranean heath' and as 'Irish heath', is an interesting plant with a limited geographical distribution [1]. As this plant is somewhat underexplored phytochemically, the present study focused on determination of the triterpene constituents in the ethyl acetate extract of *E. erigena* by GC–MS and NMR. The principal triterpenoids identified in free form were α-amyrin, β-amyrin, lupeol, oleanolic acid, micromeric acid and ursolic acid. The minor constituents present included α- amyrenone, β-amyrenone, lupenone, erythrodiol, uvaol, betulin, ursolic aldehyde, stigmasterol and β- sitosterol. Interestingly of those conjugated to fatty acids, determined after hydrolysis, β-amyrin was particularly dominant together with lupeol and α-amyrin. The same correlation was noted for the triterpenes conjugated to coumaric acid where these conjugates existed as a rapidly equilibrating mixture of cis/trans isomers. Quantification of the triterpenoids present in *E. erigena*, leaves and flowers, was conducted using reference standards, where available, and using lithocholic acid as internal standard. Coumaroyl triterpenes and micromeric acid have not been reported previously from plants in the Ericaceae family where in general, micromeric acid has shown a very limited distribution in the plant kingdom.
Conflict of Interest The authors declare no conflict of interest.
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P-082 Reinvestigation of Phenolic Glycosides of *Solanum Glaucophyllum* Desf.

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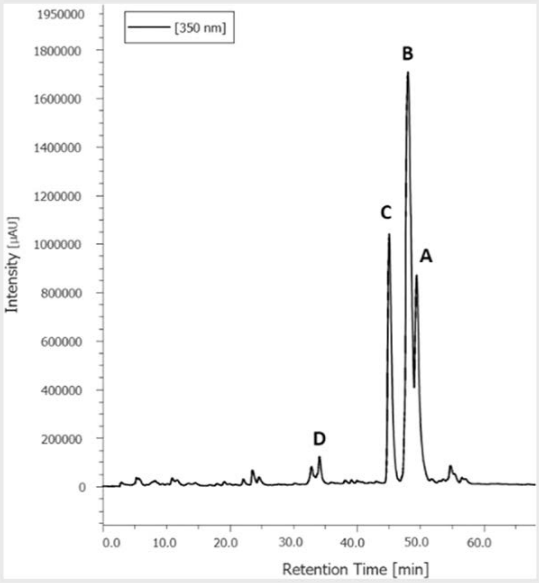
DOI 10.1055/s-0043-1773966
The current study is primarily aimed at reinvestigating the flavonoid glycoside composition of *Solanum glaucophyllum* Desf. (SG). Only a few substances were described in the literature. The analysis of glycosidic compounds of SG is a focus of interest to improve the understanding of glycosylation patterns. Probably these results will help in isolation and determination of 1,25-dihydroxycholecalciferol (1,25(OH)2D3) derivatives. Up to now, only two glycosides of 1,25(OH)2D3 were discussed in the literature while a much more complex situation is expected. We have discovered in SG via size-exclusion chromatography, up to more than 10 sugar units could be bound.
Acidic hydrolyses of a crude leaf extract (acetone/water) and subsequent analyses by HPLC-DAD revealed that almost solely quercetin derivatives were present in SG (> 95 %). Preparative reverse phase chromatography using water/methanol as mobile phase allowed isolation of 3 pure flavonoid-glycosides that were unequivocally identified as isoquercitrin (A), rutin (B) and quercetin-3-O-apiosylrutinoside (C) via HRMS and 1D-/2D-NMR. All structures were known from the literature and occurred in a ratio of 0.4/1.0/0.4 (A/B/C). Moreover, small amounts (< 5 % of total flavonoids at 350 nm) of more polar quercetin derivatives were observed. One of them is supposed to be quercetin-3-O-rutinoside-7-O-glucoside (D) which is described for the first time in SG (▶ **Fig. 1**).



▶ **Fig. 1** HPLC-DAD chromatogram of *Solanum glaucophyllum* extract at 350 nm.

In summary, glycosylation of quercetin in SG is solely based on glucose, rhamnose and apiose. This finding will help in the determination of the more complex glycosidic pattern of 1,25(OH)2D3.
Conflict of Interest SA is an employee of Herbonis.
Funding This project was funded by Herbonis.

P-083 Flavonoids and a chromone from the twigs of *Cynometra cauliflora* Linn.

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DOI 10.1055/s-0043-1773967
Cynometra cauliflora Linn., a member of the bean family Fabaceae, with the vernacular name Nam-nam, was believed to be native to Malaysia and cultivated in Indonesia and India [1]. *C. cauliflora* is a small, much- branched perennial

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