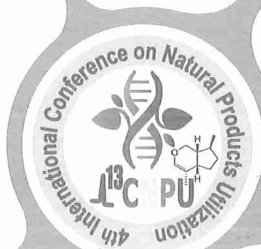


# **4<sup>th</sup>** INTERNATIONAL CONFERENCE ON NATURAL PRODUCTS UTILIZATION: FROM PLANTS TO PHARMACY SHELF

## **BOOK OF ABSTRACTS**

**29 May  
01 June  
2019**



**Albena Resort  
BULGARIA**

## GC-MS BASED METABOLOMICS STUDY OF THE RESURRECTION PLANT *RAMONDA SERBICA*

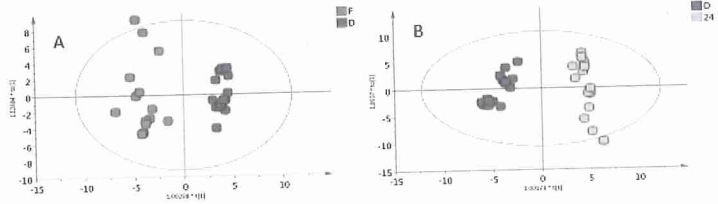
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*Ramonda serbica* represents the remnant of the Tertiary tropical and subtropical flora in Europe and is the rare resurrection plants of Northern Hemisphere temperate zone. The plant remains well-hydrated during spring, late autumn and in winter. In summer and early autumn into operation and they spend it in anabiosis [1]. In this study, metabolic responses to dehydration and rehydration of *R. serbica*, were investigated. For this purpose, GC-MS/FID based metabolomics method was performed. Leaves from the control (well-watered), dehydrated and partially rehydrated plants were sampled. Each leaf was powdered using liquid nitrogen and then freeze-dried. The internal standard (10-undecenoic acid) was added to the dry plant material and then extracted in methanol/water using ultra-sonication. After centrifugation of the mixture, the supernatant was dried and derivatized using two-step procedure involving oximation and silylation. GC-MS/FID analysis of each sample was then performed. The metabolites were identified using EI-MS spectra. The areas from FID chromatograms were used for multivariate data analysis. Two OPLS-DA models were applied to investigate dehydration and rehydration process. According to high VIP scores, sugars, such as fructose, glucose, galactinol, sucrose, together with glyceric acid, xylonic acid  $\delta$ -lactone and aspartic acid were found to be the most influential in the OPLS-DA models.



**Figure 1.** Score plots of the OPLS-DA models of dehydration (A) and rehydration (B) process of *R. serbica*. Each point corresponds to one leaf sample - green F (control plant), blue D (dehydrated plant), and yellow 24 (partially rehydrated plant).

**References:**

[1] Rakić T, et al. (2014) *Frontiers in Plant Science* 4: 550.