



Phytochemistry Vol. 106

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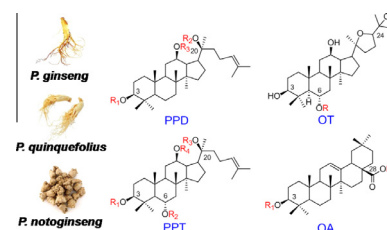
REVIEW

Saponins in the genus *Panax* L. (Araliaceae): A systematic review of their chemical diversity

pp 7–24

Wen-zhi Yang, Ying Hu, Wan-ying Wu, Min Ye*, De-an Guo*

At least 289 saponins have been isolated from the *Panax* genus to the end of 2012. *P. ginseng*, *P. quinquefolius*, and *P. notoginseng* were mostly studied, and protopanaxadiol (PPD), protopanaxatriol (PPT), octillol (OT), and oleanolic acid (OA) type saponins are the four most common subtypes.



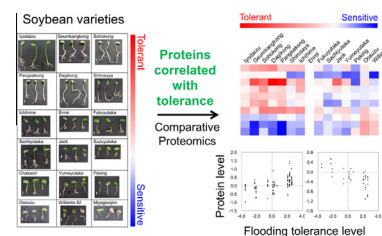
PROTEIN BIOCHEMISTRY AND PROTEOMICS

Analyses of flooding tolerance of soybean varieties at emergence and varietal differences in their proteomes

pp 25–36

Yohei Nanjo*, Hee-Young Jang, Hong-Sig Kim, Susumu Hiraga, Sun-Hee Woo, Setsuko Komatsu*

Flooding tolerance levels of 128 soybean varieties at emergence were examined. Proteins correlated quantitatively with the differences in tolerance level between varieties were identified by proteomics.

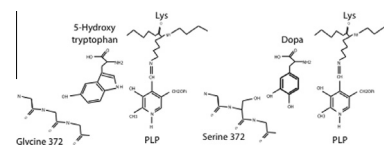


MOLECULAR GENETICS AND GENOMICS

Investigation of a substrate-specifying residue within *Papaver somniferum* and *Catharanthus roseus* aromatic amino acid decarboxylases

pp 37–43

Michael P. Torrens-Spence, Michael Lazear, Renee von Guggenberg, Haizhen Ding, Jianyong Li*



Identification of an active site residue with plant aromatic amino acid decarboxylases involved in differentiation of indolic and phenolic substrate specificities.

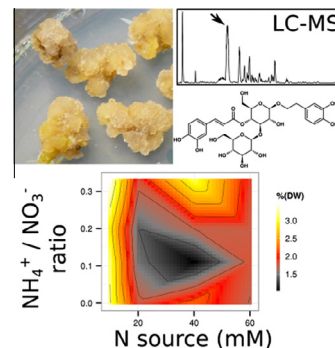
METABOLISM

Effects of N source concentration and $\text{NH}_4^+/\text{NO}_3^-$ ratio on phenylethanoid glycoside pattern in tissue cultures of *Plantago lanceolata* L.: A metabolomics driven full-factorial experiment with LC-ESI-MS³

pp 44–54

Sándor Gonda*, Attila Kiss-Szikszai, Zsolt Szűcs, Csaba Máthé, Gábor Vasas

Tissue cultures of *Plantago lanceolata* L. were grown on media with different N source compositions. Phenylethanoid glycosides were quantified by LC-MS, non-linear responses for yields were observed. The full-factorial experimental design and the applied metabolomic approach was shown to be superior to simpler designs with respect to optimization of yields.



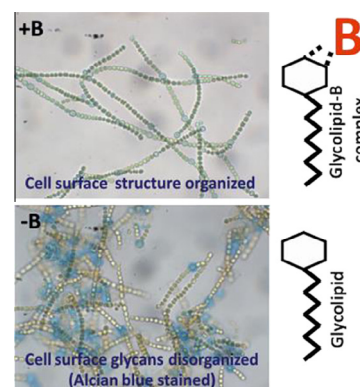
ECOLOGICAL BIOCHEMISTRY

The interaction of boron with glycolipids is required to increase tolerance to stresses in *Anabaena* PCC 7120

pp 55–60

Isidro Abreu, Isabel Orús, Luis Bolaños*, Ildefonso Bonilla

The formation of glycolipid–boron (B) complexes in the cell surface of *Anabaena* PCC 7120 is essential for both the stability of the heterocyst envelope and the response to stress environmental conditions.

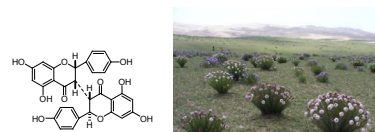


Phytotoxic flavonoids from roots of *Stellera chamaejasme* L. (Thymelaeaceae)

pp 61–68

Zhiqiang Yan, Hongru Guo, Jiayue Yang, Quan Liu, Hui Jin, Rui Xu, Haiyan Cui, Bo Qin*

Isolation and structural identification of eight flavonoids from roots of *S. chamaejasme* and their phytotoxic activities and influences of auxin on *Arabidopsis thaliana* seedlings are described. Some flavonoids may act as allelochemicals because they were found in the surrounding soils of *S. chamaejasme*.

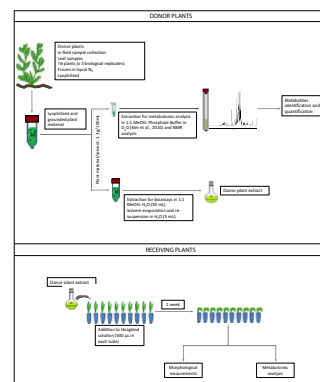


Chemical interactions between plants in Mediterranean vegetation: The influence of selected plant extracts on *Aegilops geniculata* metabolome

pp 69–85

Monica Scognamiglio*, Vittorio Fiumano, Brigida D'Abrosca, Assunta Esposito, Young Hae Choi, Robert Verpoorte, Antonio Fiorentino

Metabolomics highlighted the allelopathic potential of selected Mediterranean plants, allowing the identification of putative active compounds, as well as the study of the observed responses and the fate of allelochemicals.



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