



Phytochemistry Vol. 91

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Professor Meinhart H. Zenk: Keeping the Legacy Alive

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Nikolaus Amrhein

Homage to Professor Meinhart H. Zenk: Crowd accelerated research and innovation

pp 20–28

Nanna Heinz, Birger Lindberg Møller*



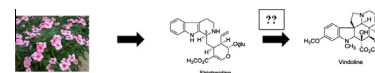
Throughout his career, Professor Meinhart H. Zenk has made seminal contributions to plant science. His way of thinking and skills as a great mentor made him a highly influential scientist who imprinted the importance of good scientific practice in numerous plant scientists around the globe.

REVIEWS

Fifty years of alkaloid biosynthesis in *Phytochemistry*

pp 29–51

Geoffrey A. Cordell*



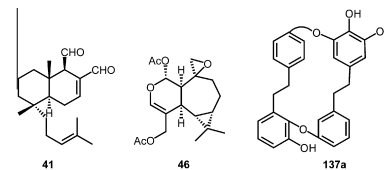
An overview of the studies related to the biosynthesis of alkaloids published in *Phytochemistry* in the past 50 years is presented.

Phytochemical and biological studies of bryophytes

pp 52–80

Yoshinori Asakawa*, Agnieszka Ludwiczuk, Fumihiro Nagashima

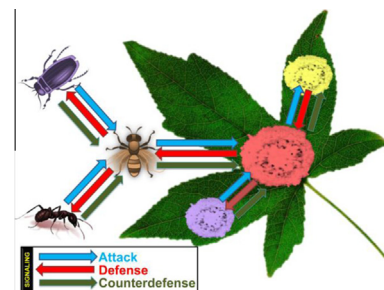
Bio- and chemical diversity of bryophytes and biologically active terpenoids, aromatic compounds and acetogenins found in the Marchantiophyta (liverworts) and Bryophyta (mosses) are reviewed.

**Untapped mutualistic paradigms linking host plant and endophytic fungal production of similar bioactive secondary metabolites**

pp 81–87

Souvik Kusari, Shree P. Pandey, Michael Spiteller*

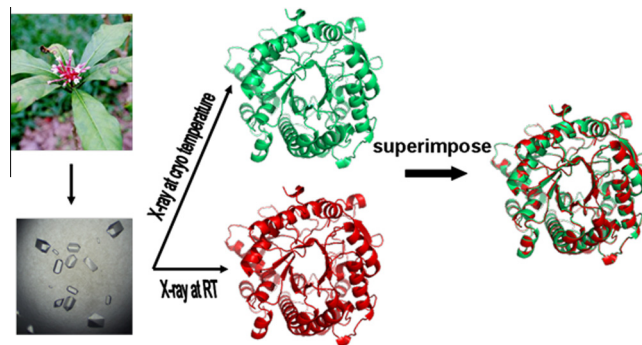
Highlighted are poorly investigated interactions that endophytes have with host plants, insect herbivores and with each other, and the diverse molecular mechanisms that might trigger similar chemical responses in both plants and endophytes. Elucidating such networks can enhance discovery of desirable endophytes and further sustain production of host plant compounds using the isolated endophytes.

**PROTEIN BIOCHEMISTRY AND PROTEOMICS****High speed X-ray analysis of plant enzymes at room temperature**

pp 88–92

Liqun Xia, Chitra Rajendran*, Martin Ruppert, Santosh Panjikar, Meitian Wang, Joachim Stoeckigt*

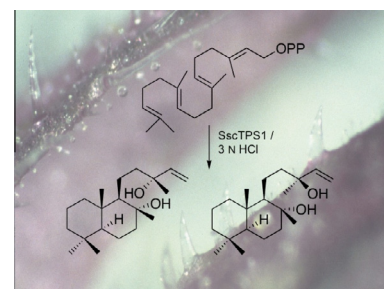
X-ray measurements of plant enzyme raucassicine-O- β -D-glucosidase and several ligand complexes of the enzyme at room temperature (295 K) and typical cryo-conditions (100 K) are highly comparable.

**MOLECULAR GENETICS AND GENOMICS****A diterpene synthase from the clary sage *Salvia sclarea* catalyzes the cyclization of geranylgeranyl diphosphate to (8*R*)-hydroxy-copalyl diphosphate**

pp 93–99

Nils Günnewich, Yasuhiro Higashi, Xiaohong Feng, Kum-Boo Choi, Jürgen Schmidt, Toni M. Kutchan*

The diterpene synthase SscTPS1 from glandular trichomes of Clary sage catalyzes cyclization of geranylgeranyl diphosphate by a mechanism that introduces oxygen to form (8*R*)-hydroxy-copalyl diphosphate, which can then be converted to sclareol and 13-*epi*-sclareol by acid hydrolysis.



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