Phytochemistry 94 (2013) 1–9

Contents lists available at ScienceDirect

Phytochemistry

journal homepage: www.elsevier.com/locate/phytochem

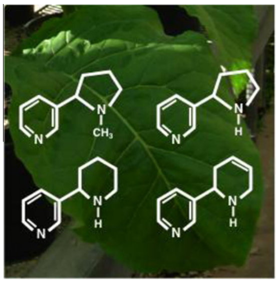
Phytochemistry Vol. 94

Contents

REVIEW

Molecular genetics of alkaloid biosynthesis in *Nicotiana tabacum* **pp 10–27**

Ralph E. Dewey*, Jiahua Xie



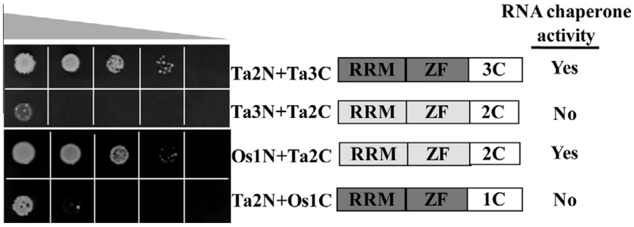
Recent advances in the molecular genetics of pyridine alkaloid production and regulation in *Nicotiana tabacum* are reviewed.

PROTEIN BIOCHEMISTRY AND PROTEOMICS

Structural features important for the RNA chaperone activity of zinc finger-containing glycine-rich RNA-binding proteins from wheat (*Triticum avestivum*) and rice (*Oryza sativa*) **pp 28–35**

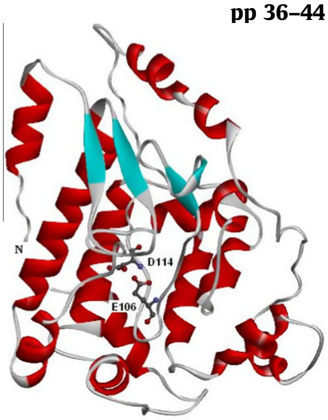
Tao Xu, Ji Hoon Han, Hunseung Kang*

Domain-swapping and deletion analysis established that the overall folding of RZs governed by the N-terminal RRM domain and the C-terminal glycine-rich region, as well as the size of the disordered C-terminal glycine-rich region, are crucial for RNA chaperone activity of RZs.



Sequence analysis and structure prediction of enoyl-CoA hydratase from *Avicennia marina*: Implication of various amino acid residues on substrate–enzyme interactions **pp 36–44**

Uzma Jabeen, Asmat Salim*

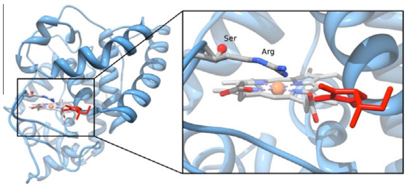


Homology model of *Avicennia marina* enoyl-CoA hydratase mainly comprises α-helical regions. Glu106 is the conserved catalytic residue while Glu86 is replaced by Gly. Asp114 is proposed as the second catalytic residue. There were structural variations in mobile loop and formation and loss of interactions between active site and substrate.

Abolishing activity against ascorbate in a cytosolic ascorbate peroxidase from switchgrass

pp 45–52

Frank A. Kovacs*, Gautam Sarath, Kyle Woodworth, Paul Twigg, Christian M. Tobias

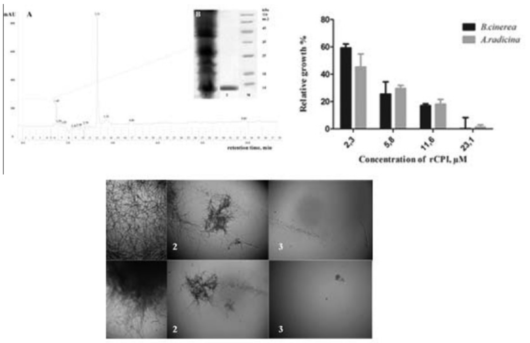


Cytosolic ascorbate peroxidase from switchgrass was cloned and expressed to obtain purified active monomeric protein. R172S mutation removed ascorbate activity but maintained aromatic substrate reactivity.

Biochemical and immunological characterization of a recombinantly-produced antifungal cysteine proteinase inhibitor from green kiwifruit (*Actinidia deliciosa*)

pp 53–59

Milica Popovic, Uros Andjelkovic, Lidija Burazer, Buko Lindner, Arnd Petersen, Marija Gavrovic-Jankulovic*



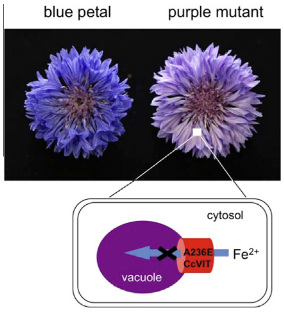
Heterologously produced cysteine proteinase inhibitor (rCPI) from green kiwifruit possesses antifungal properties against *Alternaria radicina* and *Botrytis cinerea* confirmed by measuring fungal growth and microscopical observation.

MOLECULAR GENETICS AND GENOMICS

The identification of a vacuolar iron transporter involved in the blue coloration of cornflower petals

pp 60–67

Kumi Yoshida*, Takashi Negishi

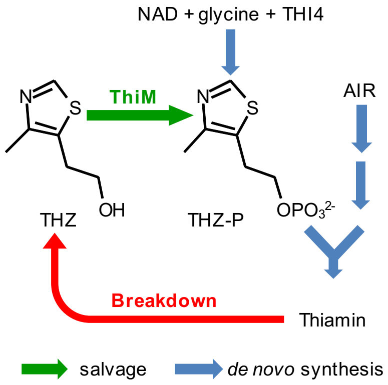


Vacuolar iron transporter (CcVIT) was critical for blue coloration of cornflower and amino acid replacement (A236E) reduced the activity to give purple color petals.

Identification of the thiamin salvage enzyme thiazole kinase in *Arabidopsis* and maize

pp 68–73

Mohammad Yazdani, Rémi Zallot, Meral Tunc-Ozdemir, Valérie de Crécy-Lagard, David K. Shintani*, Andrew D. Hanson*



Plants, like microorganisms, can salvage the thiazole moiety of thiamin for reuse in thiamin synthesis. Plant genes encoding the key salvage enzyme thiazole kinase were identified by genomics, genetics, and biochemistry.

Download English Version:

https://daneshyari.com/en/article/5165073

Download Persian Version:

https://daneshyari.com/article/5165073

Daneshyari.com