OBITUARY

807 Ivano Bertini
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RESEARCH HIGHLIGHTS

808 Our choices from the recent literature

NEWS AND VIEWS

810 Enzymes: Orchestrating hi-fi annotations
Patrick F Suthers & Costas D Maranas
▶ Article p848

811 Lipids: Tafazzin senses curvature
Klaus Gawrisch
▶ Article p862

812 Microbiology: GhoSTly bacterial persisters
Laurence Van Melderen
▶ Article p855

BRIEF COMMUNICATIONS

814 Cytochrome P450-catalyzed l-tryptophan nitration in thaxtomin phytoxin biosynthesis
S M Barry, J A Kers, E G Johnson, L Song, P R Aston, B Patel, S B Krasnoff, B R Crane, D M Gibson, R Loria & G L Challis

The mechanism for nitro group formation in the thaxtomin family of natural products is unknown. Genetic and biochemical studies now show the cytochrome P450 TxtE catalyzes this direct and regioselective nitration, using NO and O2, to modify a tryptophan indole ring.
ARTICLES

817  A quantitative assay for assessing the effects of DNA lesions on transcription

DNA damage products influence DNA replication but also may induce stalling or mutagenesis during transcription. A competitive transcription and adduct bypass assay provides a new approach for assessing the transcriptional effects of DNA lesions and links transcriptional arrest of several lesions to nucleotide excision repair pathways.

823  Cyclization of fungal nonribosomal peptides by a terminal condensation-like domain
X Gao, S W Haynes, B D Ames, P Wang, L P Vien, C T Walsh & Y Tang

The reconstitution of two fungal NRPSs provides the first biochemical evidence that these assembly lines use a condensation-like domain to complete the synthesis of cyclic natural products instead of the thioesterase domain used in bacterial species.

831  Ceramide targets autophagosomes to mitochondria and induces lethal mitophagy

C18-ceramide mediates lethal autophagy by anchoring LC3B-II (lipidated LC3) to mitochondrial membranes during mitochondrial fission and thereby recruiting autophagosomes.

839  Pyruvate kinase M2 activators promote tetramer formation and suppress tumorigenesis

A small-molecule activator specific for PKM2 binds to a site distinct from the endogenous activator fructose-1,6-bisphosphate, promoting tetramerization and constitutive activation of PKM2, to inhibit xenograft tumor growth in mice.
Global probabilistic annotation of metabolic networks enables enzyme discovery
G Plata, T Fuhrer, T-L Hsiao, U Sauer & D Vitkup

A new global annotation strategy combines sequence identity and genomic context to provide probabilities for all metabolic assignments in a given species. Application of this method leads to multiple new annotations and validation of three enzymatic activities in *B. subtilis*.

▶ N&V p810

A new type V toxin-antitoxin system where mRNA for toxin GhoT is cleaved by antitoxin GhoS

Expanding the bacterial toxin-antitoxin system classes to a fifth class, GhoST was found to be involved in maintenance of persister cells, dormant cells that are tolerant of antibiotics. GhoS is the antitoxin, an endoribonuclease that cleaves the toxin mRNA *ghoT*, whose gene product is a membrane-lytic protein.

▶ N&V p812

The physical state of lipid substrates provides transacylation specificity for tafazzin
M Schlame, D Acehan, B Berno, Y Xu, S Valvo, M Ren, D L Stokes & R M Epand

Tafazzin, the mitochondrial transacylase that is deficient in Barth syndrome, selects lipid substrates in the inverted hexagonal phase, but does not react with bilayer lipids.

▶ N&V p811