ELSEVIER

Bioorganic & Medicinal Chemistry Letters

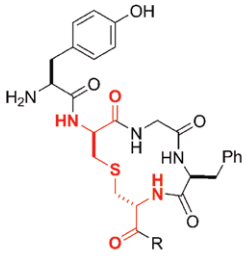
Bioorganic & Medicinal Chemistry Letters Vol. 18, No. 10, 2008

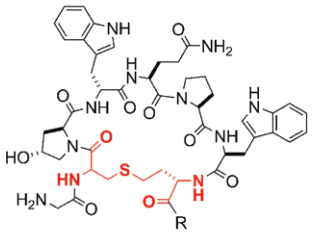
Contents

Tetrahedron Young Investigator Award 2007 Wilfred van der Donk p 3024

FEATURED ARTICLE

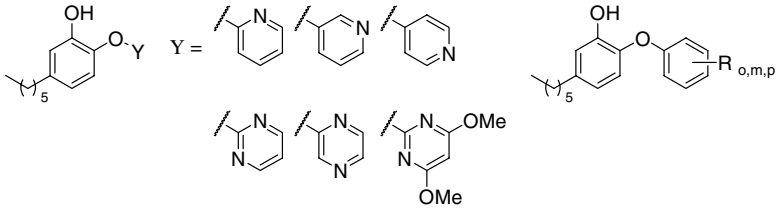
Use of lantibiotic synthetases for the preparation of bioactive constrained peptides pp 3025–3028
Matthew R. Levengood and Wilfred A. van der Donk*



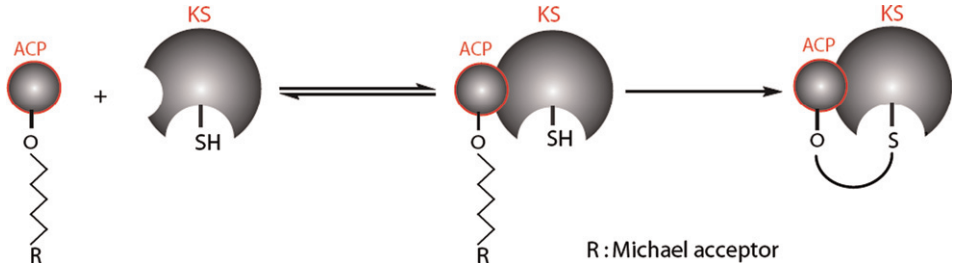


ARTICLES

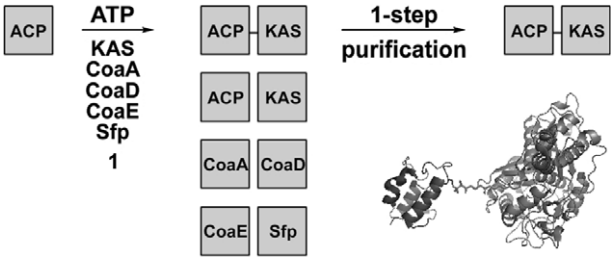
Synthesis and in vitro antimycobacterial activity of B-ring modified diaryl ether InhA inhibitors pp 3029–3033
Christopher W. am Ende, Susan E. Knudson, Nina Liu, James Childs, Todd J. Sullivan, Melissa Boyne, Hua Xu, Yelizaveta Gegina, Dennis L. Knudson, Francis Johnson, Charles A. Peloquin, Richard A. Slayden* and Peter J. Tonge*



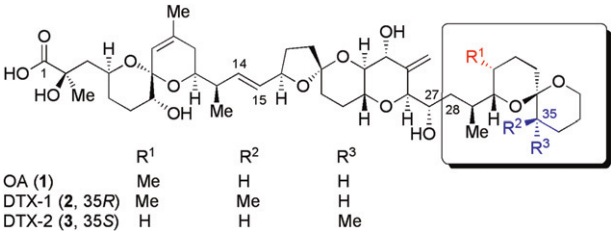
Mechanism based protein crosslinking of domains from the 6-deoxyerythronolide B synthase pp 3034–3038
Shiven Kapur, Andrew Worthington, Yinyan Tang, David E. Cane, Michael D. Burkart and Chaitan Khosla*



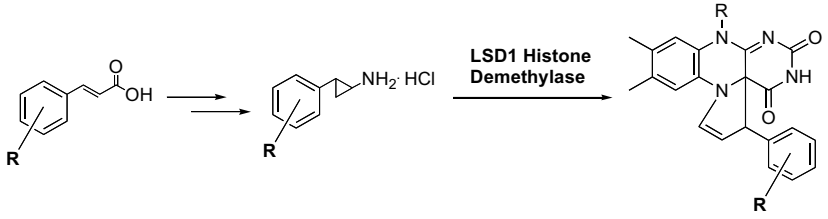
An orthogonal purification strategy for isolating crosslinked domains of modular synthases **pp 3039–3042**
Robert W. Haushalter, Andrew S. Worthington, Gene H. Hur and Michael D. Burkart*



Synthesis and stereochemistry of the terminal spiroketal domain of the phosphatase inhibitor dinophysistoxin-2 **pp 3043–3046**
Craig J. Forsyth* and Ce Wang

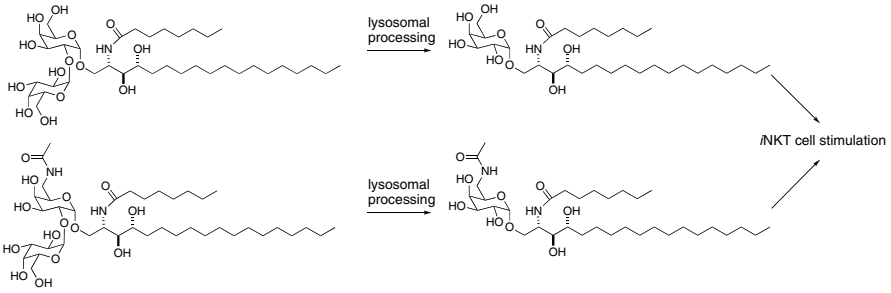


Facile synthesis of substituted *trans*-2-arylcyclopropylamine inhibitors of the human histone demethylase LSD1 and monoamine oxidases A and B **pp 3047–3051**
David M. Gooden, Dawn M. Z. Schmidt, Julie A. Pollock, Ami M. Kabadi and Dewey G. McCafferty*

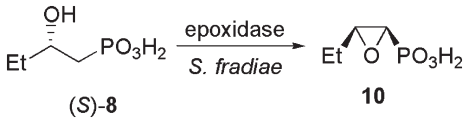


A facile synthetic route to substituted *trans*-2-arylcyclopropylamines was developed to provide mechanism-based inhibitors of the flavoenzyme histone demethylase LSD1.

Synthesis of diglycosylceramides and evaluation of their *i*NKT cell stimulatory properties **pp 3052–3055**
Yang Liu, Shenglou Deng, Li Bai, Stefan Freigang, Jochen Mattner, Luc Teyton, Albert Bendelac and Paul B. Savage*

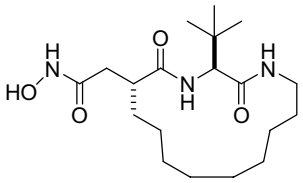


On the conversion of structural analogues of (*S*)-2-hydroxypropylphosphonic acid to epoxides by the final enzyme of fosfomycin biosynthesis in *S. fradiae* **pp 3056–3059**
Anna Schweifer and Friedrich Hammerschmidt*



(*S*)-**8** **10**

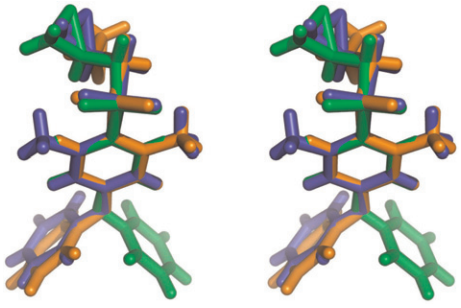
Design and synthesis of macrocyclic peptidyl hydroxamates as peptide deformylase inhibitors **pp 3060–3063**
Gang Shen, Jinge Zhu, Anthony M. Simpson and Dehua Pei*



Macrocyclic peptidyl hydroxamates were designed, synthesized, and evaluated as peptide deformylase (PDF) inhibitors. The most potent compound exhibited tight, slow-binding inhibition of *Escherichia coli* PDF (KI=4.4nM) and had potent antibacterial activity against Gram-positive bacterium *Bacillus subtilis* (MIC = 2–4 μg/mL).

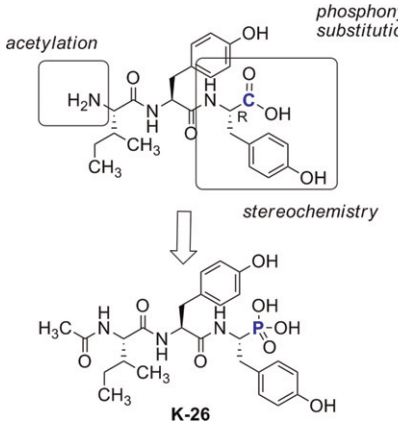
Conformational analyses of thiirane-based gelatinase inhibitors **pp 3064–3067**
Mijoon Lee, Dusan Hesek, Qicun Shi, Bruce C. Noll, Jed F. Fisher, Mayland Chang* and Shahriar Mobashery*

SB-3CT is a thiirane-containing inhibitor of the gelatinase class of matrix metalloprotease enzymes. In support of the mechanistic study of this inhibition, the conformational analyses of SB-3CT (and of two methyl-substituted derivatives) were undertaken using X-ray crystallography and molecular dynamics simulation.

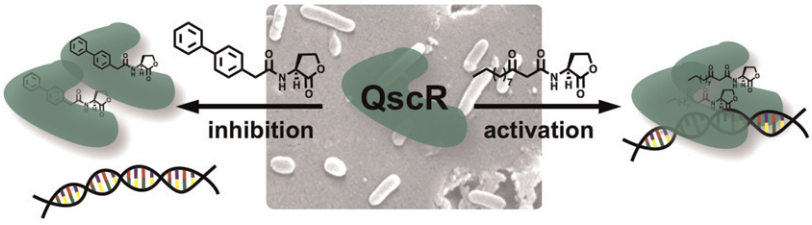


Identification of ACE pharmacophore in the phosphonopeptide metabolite K-26 **pp 3068–3071**
Ioanna Ntai and Brian O. Bachmann*

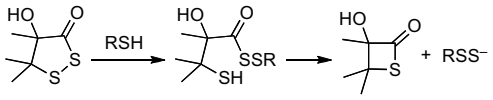
In order to ascertain the structure–activity relationships in an uninvestigated class of ACE inhibitory natural products, K-26 and eight analogues were chemically synthesized and evaluated.



Synthetic ligands that activate and inhibit a quorum-sensing regulator in *Pseudomonas aeruginosa* **pp 3072–3075**
Margrith E. Mattmann, Grant D. Geske, Gregory A. Worzalla, Josephine R. Chandler, Kaia J. Sappington, E. Peter Greenberg and Helen E. Blackwell*

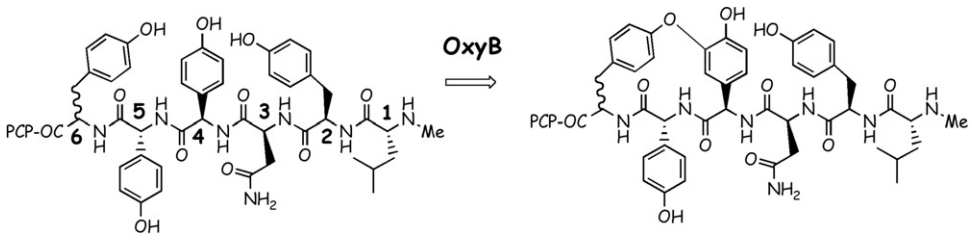


Possible chemical mechanisms underlying the antitumor activity of *S*-deoxyleinamycin **pp 3076–3080**
Santhosh Sivaramakrishnan and Kent S. Gates*



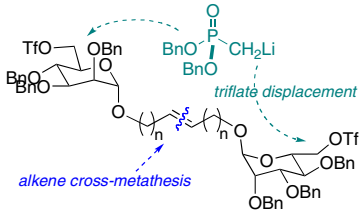
Though less potent than the parent natural product leinamycin, *S*-deoxyleinamycin displays activity against human cancer cell lines that is comparable to many clinically used agents. The 1,2-dithiolan-3-one heterocycle found in *S*-deoxyleinamycin may react with thiols to generate a persulfide intermediate (RSS^-) that delivers biologically active polysulfides, hydrogen sulfide, and reactive oxygen species (O2-, H_2O_2, and HO) to the interior of cells.

New insights into the first oxidative phenol coupling reaction during vancomycin biosynthesis **pp 3081–3084**
Nina Geib, Katharina Woithe, Katja Zerbe, Dong Bo Li and John A. Robinson*



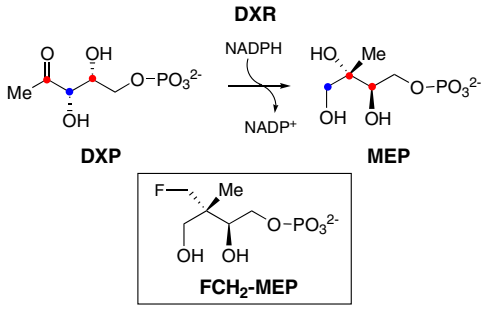
Label from $^{18}O_2$ is not incorporated into the monocyclic product shown during catalysis by OxyB. Also, a model hexapeptide containing (*R*)-Tyr6, instead of (*S*)-Tyr6, is converted by OxyB into the corresponding epimeric monocyclic product.

A set of phosphatase-inert "molecular rulers" to probe for bivalent mannose 6-phosphate ligand–receptor interactions **pp 3085–3089**
Xiang Fei, Christopher M. Connelly, Richard G. MacDonald* and David B. Berkowitz*

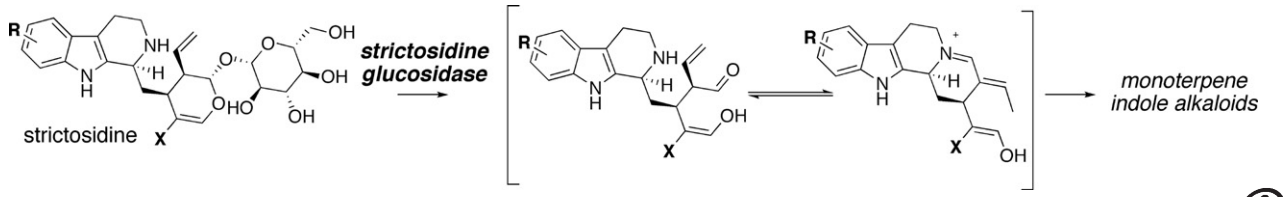


The synthesis of bivalent, M6P-based phosphonates and their evaluation for M6P-IGF2R binding is reported.

Synthesis and analysis of a fluorinated product analogue as an inhibitor for 1-deoxy-D-xylulose 5-phosphate reductoisomerase pp 3090–3094
Jeffrey W. Munos, Xiaotao Pu and Hung-wen Liu*

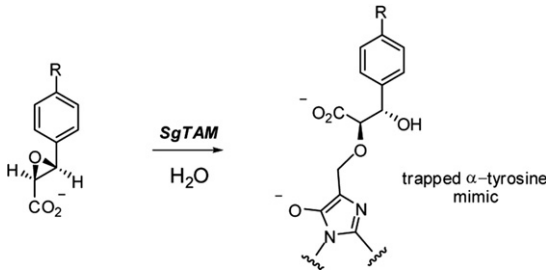


Substrate specificity and diastereoselectivity of strictosidine glucosidase, a key enzyme in monoterpene indole alkaloid biosynthesis pp 3095–3098
Nancy Yerkes, Jia Xin Wu, Elizabeth McCoy, M. Carmen Galan, Shi Chen and Sarah E. O'Connor*



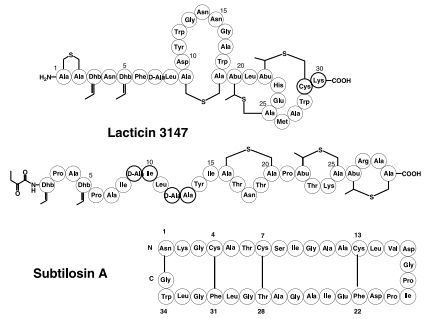
Design and characterization of mechanism-based inhibitors for the tyrosine aminomutase *Sg*TAM pp 3099–3102
Timothy J. Montavon, Carl V. Christianson, Grace M. Festin, Ben Shen and Steven D. Bruner*

The synthesis and evaluation of inhibitors for *Sg*TAM, a 4-methylideneimidazole-5-one (MIO) containing tyrosine aminomutase are reported. *Sg*TAM produces β-tyrosine, a component of the antitumor/antibiotic enediyne C-1027.

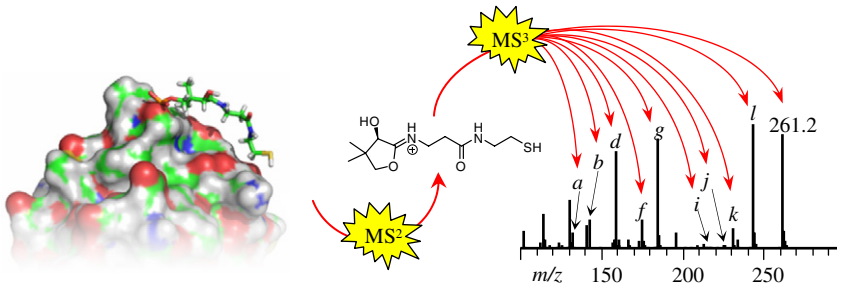


Spermicidal bacteriocins: Lacticin 3147 and subtilosin A pp 3103–3106
Lara Silkin, Shereen Hamza, Susan Kaufman, Steven L. Cobb and John C. Vederas*

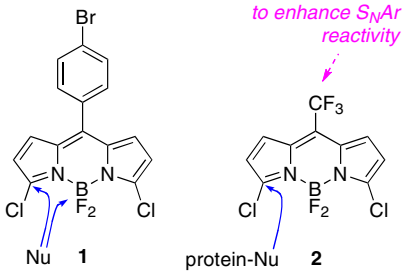
Antimicrobial peptides (AMPs), including the bacteriocins lacticin 3147 and subtilosin A, may enhance current contraceptive agents as they possess both spermicidal and microbicidal properties.



Top-down mass spectrometry on low-resolution instruments: Characterization of phosphopantetheinylated carrier domains in polyketide and non-ribosomal biosynthetic pathways pp 3107–3111
Dario Meluzzi, Wei Hao Zheng, Mary Hensler, Victor Nizet and Pieter C. Dorrestein*



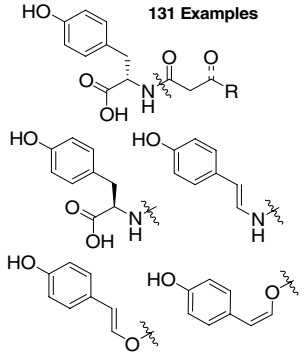
Functionalization of the 4,4-difluoro-4-bora-3a,4a-diaza-*s*-indacene (BODIPY) core pp 3112–3116
Lingling Li, Binh Nguyen and Kevin Burgess*



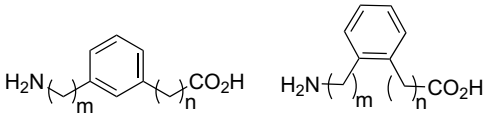
Studies of S_NAr and B-*F* displacement reactions on **1** lead to the development of probe **2** that can be directly added to nucleophilic amino side-chains of proteins.

Synthetic libraries of tyrosine-derived bacterial metabolites pp 3117–3121
Savvas N. Georgiades and Jon Clardy*

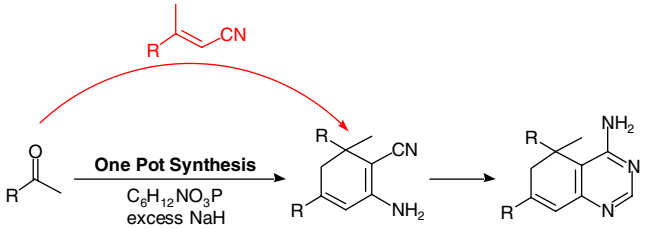
The preparation of a collection of 131 small molecules, reminiscent of families of long chain *N*-acyl tyrosines, enamides and enol esters that have been isolated from heterologous expression of environmental DNA (eDNA) in *Escherichia coli*, is reported. The synthetic libraries of *N*-acyl tyrosines and their 3-keto counterparts were prepared via solid-phase routes, whereas the enamides and enol esters were synthesized in solution-phase.



Synthesis and evaluation of novel aromatic substrates and competitive inhibitors of GABA aminotransferase pp 3122–3125
Michael D. Clift and Richard B. Silverman*



An efficient one-pot synthesis of tethered cyclohexadiene enaminonitriles from methyl-ketones: An effective route to quinozolines **pp 3126–3130**
Bennie J. Bench, Victor H. Suarez and Coran M. H. Watanabe*



OTHER CONTENTS

Summary of instructions to authors **p I**

*Corresponding author
ⓘ+ Supplementary data available via ScienceDirect

COVER

Lantibiotic synthetases can be used for the preparation of cyclic analogs of potent bioactive peptides such as the conotoxins and the neurotransmitter enkephalin. The carnivorous cone snail Conus stercusmuscarum producing the conotoxin contryphan-Sm is depicted (picture courtesy of Mike An, Microseashell.com). Cover art designed and prepared by Dorothy Loudermilk, School of Chemical Sciences, UIUC. [Levengood, M. R.; van der Donk, W. A. *Bioorg. Med. Chem. Lett.* **2008,** *18,* 3025.]

Indexed/Abstracted in: Beilstein, Biochemistry & Biophysics Citation Index, CANCERLIT, Chemical Abstracts, Chemistry Citation Index, Current Awareness in Biological Sciences/BIOBASE, Current Contents: Life Sciences, EMBASE/Excerpta Medica, MEDLINE, PASCAL, Research Alert, Science Citation Index, SciSearch, TOXFILE

ELSEVIER

ISSN 0960-894X