

## Graphical abstracts

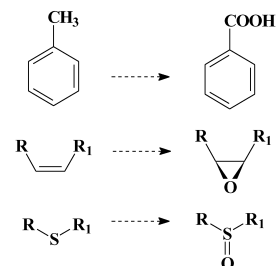
### Oxidation, epoxidation and sulfoxidation reactions catalysed by haloperoxidases

Valery M. Dembitsky

Department of Medicinal Chemistry and Natural Products, School of Pharmacy, P.O. Box 12065, Hebrew University of Jerusalem, Jerusalem 91120, Israel

The reactions of oxidation, epoxidation, and sulfoxidation catalysed by haloperoxidases are reported. The report contains 150 references.

*Tetrahedron* 59 (2003) 4701

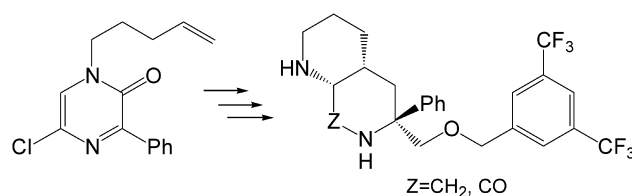


### Synthesis and conformational analysis of Substance P antagonist analogues based on a 1,7-naphthyridine scaffold

Frederik J. R. Rombouts, Jeroen Van den Bossche, Suzanne M. Toppet, Frans Compennolle and Georges J. Hoornaert\*

Department of Organic Chemistry, K.U. Leuven, Celestijnenlaan 200F, Leuven, B-3001, Belgium

*Tetrahedron* 59 (2003) 4721



### Isoxazolidine analogues of pseudouridine: a new class of modified nucleosides

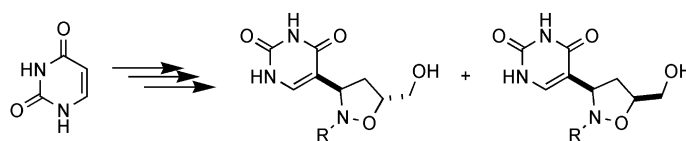
Ugo Chiacchio,<sup>a,\*</sup> Antonino Corsaro,<sup>a</sup> Juan Mates,<sup>b</sup> Pedro Merino,<sup>b,\*</sup> Anna Piperno,<sup>c</sup> Antonio Rescifina,<sup>a</sup> Giovanni Romeo,<sup>c,\*</sup> Roberto Romeo<sup>c</sup> and Tomas Tejero<sup>b</sup>

<sup>a</sup>Dipartimento di Scienze Chimiche, Università di Catania, Viale Andrea Doria 6, 95125 Catania, Italy

<sup>b</sup>Departamento de Química Orgánica, Facultad de Ciencias, Universidad de Zaragoza, E-50009 Zaragoza, Aragon, Spain

<sup>c</sup>Dipartimento Farmaco-Chimico, Università di Messina, Viale SS. Annunziata, 98168 Messina, Italy

*Tetrahedron* 59 (2003) 4733



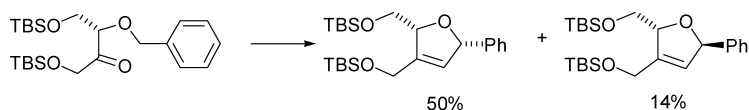
### Studies of intramolecular alkylidene carbene reactions; an approach to heterocyclic nucleoside bases

Gerard Hobley,<sup>a</sup> Keith Stuttle<sup>b</sup> and Martin Wills<sup>a,\*</sup>

<sup>a</sup>Department of Chemistry, University of Warwick, Gibbit Hill Road, Coventry CV4 7AL, UK

<sup>b</sup>Aventis Pharma Ltd, Rainham Road South, Dagenham, Essex RM10 7XS, UK

*Tetrahedron* 59 (2003) 4739



## Structure and stability of halonium cations of cycloalkenes.

*Tetrahedron 59 (2003) 4749*

### A theoretical study

Vasilios I. Teberekidis and Michael P. Sigalas\*

Laboratory of Applied Quantum Chemistry, Department of Chemistry, Aristotle University of Thessaloniki, 54 124 Thessaloniki, Greece



X=Cl, Br

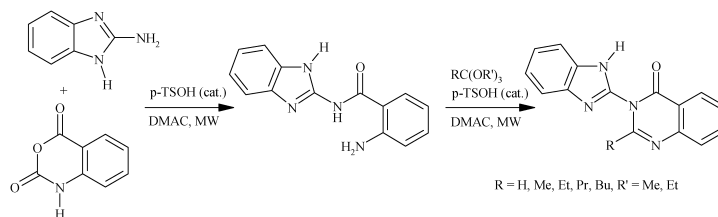
## A facile synthesis of new 3-(2-benzimidazolyl)-2-alkyl-4-(3H)-quinazolinones under microwave irradiation

*Tetrahedron 59 (2003) 4757*

Hassan Hazarkhani\* and Babak Karimi

Department of Chemistry, Institute for Advanced Studies in Basic Sciences (IASBS), P.O. Box 45195-159, Gava Zang, Zanjan, Iran

Preparation of 2-amino-*N*-(1-*H*-benzimidazol-2-yl)benzamide and a variety of new 3-(2-benzimidazolyl)-2-alkyl-4-(3*H*)-quinazolinones are described.



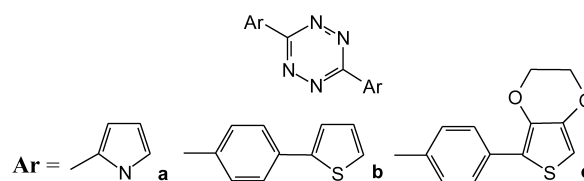
## Practical synthesis of bis-substituted tetrazines with two pendant 2-pyrrolyl or 2-thienyl groups, precursors of new conjugated polymers

*Tetrahedron 59 (2003) 4761*

Jadwiga Sołoducho,<sup>a,\*</sup> Jacek Doskocz,<sup>a</sup> Joanna Cabaj<sup>a</sup> and Szczepan Roszak<sup>b</sup>

<sup>a</sup>Department of Chemistry, Institute of Organic Chemistry, Biochemistry and Biotechnology, Wrocław, University of Technology, Wybrzeże Wyspiańskiego 27, 50-370 Wrocław, Poland

<sup>b</sup>Department of Chemistry, Institute of Physical and Theoretical Chemistry, Wrocław, University of Technology, Wybrzeże Wyspiańskiego 27, 50-370 Wrocław, Poland

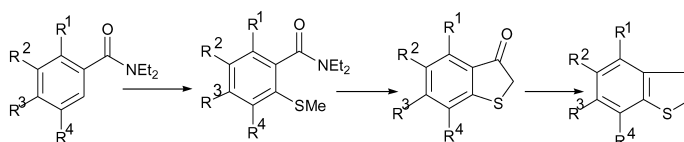


## Application of directed metalation in synthesis. Part 4: Expedient synthesis of substituted benzo[*b*]thiophene and naphthothiophene

*Tetrahedron 59 (2003) 4767*

Chandrani Mukherjee, Sukanta Kamila and Asish De\*

Department of Organic Chemistry, Indian Association for the Cultivation of Science, Jadavpur, Kolkata 700032, India



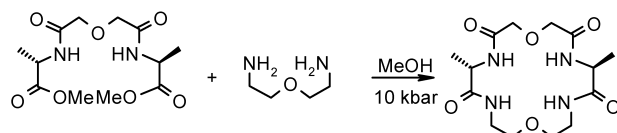
## Synthesis of macrocyclic tetraamides derived from $\alpha$ -amino acids and their investigations using ESI-MS technique

*Tetrahedron* 59 (2003) 4775

Agnieszka Szczepańska,<sup>a</sup> Piotr Sałański<sup>a</sup> and Janusz Jurczak<sup>a,b,\*</sup>

<sup>a</sup>Institute of Organic Chemistry, Polish Academy of Sciences, Kasprzaka 44-52, PL-01-224 Warsaw, Poland

<sup>b</sup>Department of Chemistry, Warsaw University, Pasteura 1, PL-02-093, Warsaw, Poland



## One-pot synthesis of stable phosphonium ylides using 2-aminothiophenol

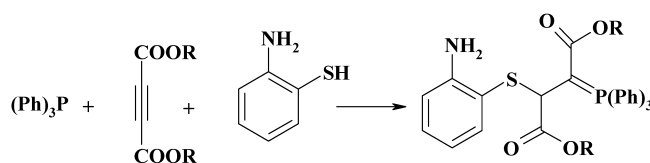
*Tetrahedron* 59 (2003) 4785

Abbas Ali Esmaili,<sup>a,\*</sup> Mahnaz Ghoreghloo,<sup>a</sup> Mohammad Reza Islami<sup>b</sup> and Hamid Reza Bijanzadeh<sup>c</sup>

<sup>a</sup>Department of Chemistry, University of Birjand, P.O. Box 414 Birjand, Iran

<sup>b</sup>Department of Chemistry, Shahid Bahonar University of Kerman, Kerman, Iran

<sup>c</sup>Department of Chemistry, University of Tarbiat Modarres, Tehran, Iran

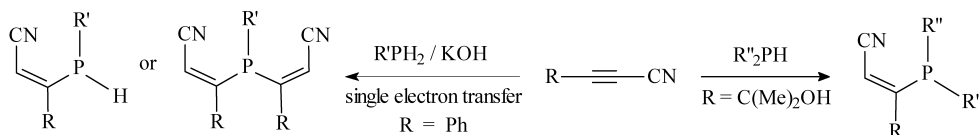


## Regio- and stereospecific addition of phosphines to cyanoacetylenes

*Tetrahedron* 59 (2003) 4789

Nina K. Gusarova,<sup>\*</sup> Svetlana I. Shaikhudinova, Svetlana N. Arbutova, Tamara I. Vakul'skaya, Boris G. Sukhov, Lidiya M. Sinegovskaya, Mikhail V. Nikitin, Anastasiya G. Mal'kina, Nataliya A. Chernysheva and Boris A. Trofimov

A. E. Favorsky Irkutsk Institute of Chemistry, Siberian Branch of the Russian Academy of Sciences  
1, Favorsky Street, Irkutsk 664033, Russian Federation



## Syntheses and bioactivities of tricyclic pyrones

*Tetrahedron* 59 (2003) 4795

Duy H. Hua,<sup>a,\*</sup> Xiaodong Huang,<sup>a</sup> Masafumi Tamura,<sup>a</sup> Yi Chen,<sup>a</sup> Melissa Woltkamp,<sup>a</sup> Lee-Way Jin,<sup>b</sup> Elisabeth M. Perchellet,<sup>c</sup> Jean-Pierre Perchellet,<sup>c</sup> Peter K. Chiang,<sup>d</sup> Ichiji Namatame<sup>e</sup> and Hiroshi Tomoda<sup>e</sup>

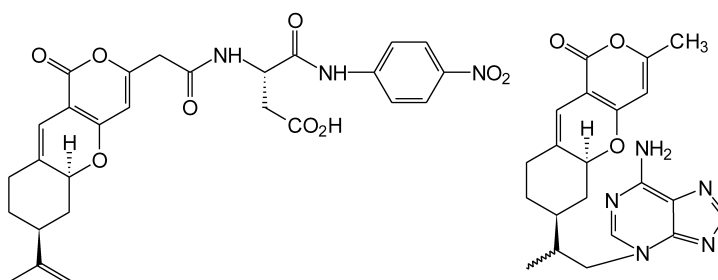
<sup>a</sup>Department of Chemistry, Willard Hall, Kansas State University, Manhattan, KS 66506 USA

<sup>b</sup>Department of Pathology, University of Washington, Seattle, WA 98195-7470 USA

<sup>c</sup>Anti-Cancer Drug Laboratory, Division of Biology, Ackert Hall, Kansas State University, Manhattan, KS 66506 USA

<sup>d</sup>Department of Applied Biochemistry, Walter Reed Army Institute of Research, Washington, DC 20307-5100 USA

<sup>e</sup>Kitasato Institute for Life Sciences, Kitasato University, 5-9-1, Shirokane, Minato-Ku, Tokyo 108-8642 Japan



## Labdane diterpenes with a new oxidation pattern from the marine pulmonate *Trimusculus peruvianus*

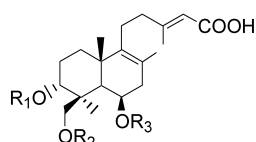
*Tetrahedron* 59 (2003) 4805

Ana R. Díaz-Marrero,<sup>a</sup> Enrique Dorta,<sup>a</sup> Mercedes Cueto,<sup>a</sup> Juana Roviroso,<sup>b</sup> Aurelio San-Martín,<sup>b</sup> Alberto Loyola<sup>c</sup> and José Darías<sup>a,\*</sup>

<sup>a</sup>Instituto de Productos Naturales y Agrobiología del CSIC, Avda. Astrofísico F. Sánchez 3, Apdo 195, 38206 La Laguna, Tenerife, Spain

<sup>b</sup>Departamento de Química, Facultad de Ciencias, Universidad de Chile, Santiago de Chile, Chile

<sup>c</sup>Departamento de Química, Facultad de Ciencias, Universidad de Antofagasta, Antofagasta, Chile



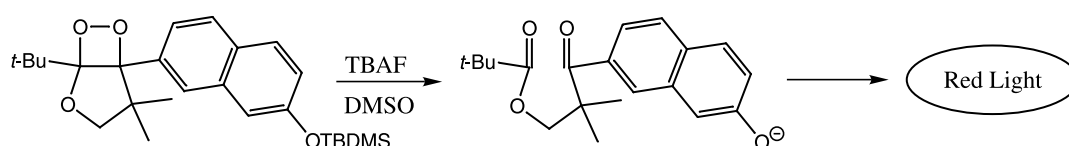
- 1: R<sub>1</sub> = R<sub>2</sub> = R<sub>3</sub> = H
- 2: R<sub>1</sub> = COC<sub>4</sub>H<sub>9</sub>, R<sub>2</sub> = R<sub>3</sub> = H
- 3: R<sub>1</sub> = R<sub>3</sub> = COC<sub>4</sub>H<sub>9</sub>, R<sub>2</sub> = H
- 4: R<sub>1</sub> = R<sub>2</sub> = COC<sub>4</sub>H<sub>9</sub>, R<sub>3</sub> = H

## Fluoride-induced chemiluminescent decomposition of dioxetanes bearing a siloxyaryl moiety to produce an alkyl aryl ketone as an emitter

*Tetrahedron* 59 (2003) 4811

Nobuko Watanabe, Yasuhiro Nagashima, Takahiro Yamazaki and Masakatsu Matsumoto\*

Department of Chemistry, Kanagawa University, Tsuchiya, Hiratsuka, Kanagawa 259-1293, Japan



## Benzocoumarins from the rhizomes of *Juncus acutus*

*Tetrahedron* 59 (2003) 4821

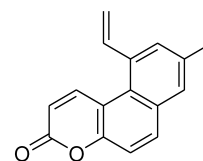
Marina DellaGreca,<sup>a,\*</sup> Antonio Fiorentino,<sup>b</sup> Marina Isidori,<sup>b</sup> Lucio Previtera,<sup>a</sup>

Fabio Temussi<sup>a</sup> and Armando Zarrelli<sup>a</sup>

<sup>a</sup>Dipartimento di Chimica Organica e Biochimica, Università Federico II, Complesso Universitario Monte Sant'Angelo, Via Cynthia 4, I-80126 Napoli, Italy

<sup>b</sup>Dipartimento di Scienze della Vita, II Università di Napoli, Via Vivaldi 43, I-81100 Caserta, Italy

Seven new benzocoumarins have been isolated from the wetland plant *Juncus acutus*. Structure determination by NMR spectroscopy is described. The compounds showed anti-algal activity in vitro.



## Difluorinated analogues of shikimic acid

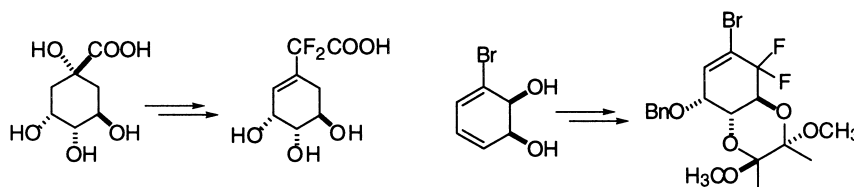
*Tetrahedron* 59 (2003) 4827

Lovely Begum,<sup>a</sup> Julian M. Box,<sup>a</sup> Michael G. B. Drew,<sup>a</sup> Laurence M. Harwood,<sup>a</sup>

Jane L. Humphreys,<sup>b</sup> David J. Lowes,<sup>b</sup> Gareth A. Morris,<sup>b</sup> Perrine M. Redon,<sup>b</sup> Francine M. Walker<sup>b</sup> and Roger C. Whitehead<sup>b,\*</sup>

<sup>a</sup>Department of Chemistry, The University of Reading, Whiteknights, Reading RG6 6AD, UK

<sup>b</sup>Department of Chemistry, The University of Manchester, Oxford Road, Manchester M13 9PL, UK



**Donor–acceptor–donor triads incorporating tetrathiafulvalene and perylene diimide units: synthesis, electrochemical and spectroscopic studies**

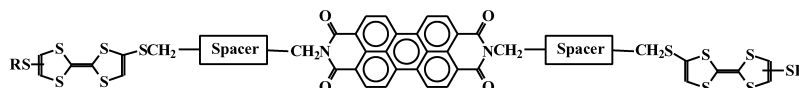
*Tetrahedron 59 (2003) 4843*

Xuefeng Guo,<sup>a,b</sup> Deqing Zhang,<sup>a,\*</sup> Huijuan Zhang,<sup>a</sup> Qinghua Fan,<sup>a</sup> Wei Xu,<sup>a</sup> Xicheng Ai,<sup>a</sup> Louzheng Fan<sup>c</sup> and Daoben Zhu<sup>a,\*</sup>

<sup>a</sup>Laboratory of Organic Solids, Center for Molecular Sciences, Institute of Chemistry, Chinese Academy of Sciences, Beijing 100080, People's Republic of China

<sup>b</sup>Graduate School, Chinese Academy of Sciences, Beijing 100080, People's Republic of China

<sup>c</sup>Department of Chemistry, Beijing Normal University, Beijing 100875, People's Republic of China



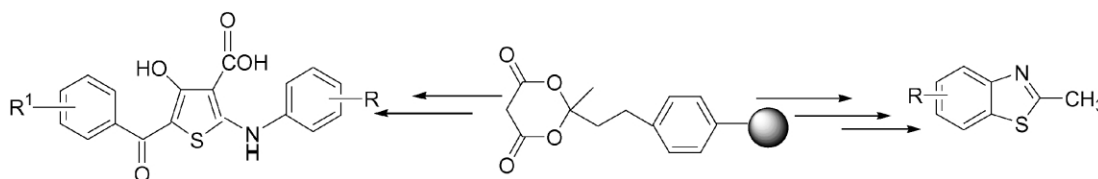
**Solid phase synthesis of benzothiazole and thiophene derivatives based on resin-bound cyclic malonic acid ester**

*Tetrahedron 59 (2003) 4851*

Xian Huang<sup>a,b,\*</sup> and Jing Tang<sup>a</sup>

<sup>a</sup>Department of Chemistry, Zhejiang University (Campus Xixi), Hangzhou 310028, People's Republic of China

<sup>b</sup>Laboratory of Organometallic Chemistry, Chinese Academy of Sciences, Shanghai 200032, People's Republic of China



**The chemistry of zerumbone. Part 5: Structural transformation of the dimethylamine derivatives**

*Tetrahedron 59 (2003) 4857*

Takashi Kitayama,<sup>a,\*</sup> Taketo Yokoi,<sup>b</sup> Yasushi Kawai,<sup>c</sup> Richard K. Hill,<sup>d</sup> Masanori Morita,<sup>e</sup> Tadashi Okamoto,<sup>a</sup> Yukio Yamamoto,<sup>f</sup> Valery V. Fokin,<sup>g</sup> K. Barry Sharpless<sup>g</sup> and Seiji Sawada,<sup>b,\*</sup>

<sup>a</sup>Department of Agricultural Chemistry, Faculty of Agriculture, Kinki University, Nara 631-8505, Japan

<sup>b</sup>Kyoto University of Education, Fushimi, Kyoto 612-8522, Japan

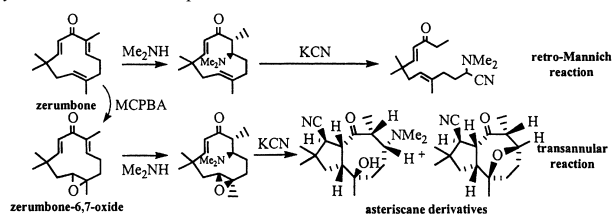
<sup>c</sup>Institute for Chemical Research, Kyoto University, Uji 611-0011, Japan

<sup>d</sup>Department of Chemistry, University of Georgia, Athens, GA 30602, USA

<sup>e</sup>Joint Center, Kinki University, Nara 631-8505, Japan

<sup>f</sup>Graduate School of Human and Environmental Studies, Kyoto University, Sakyo, Kyoto 606-8501, Japan

<sup>g</sup>Department of Chemistry, The Scripps Research Institute, La Jolla, CA 92037, USA

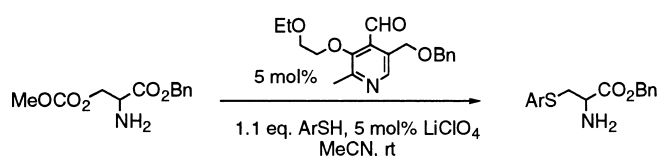


**Artificial model for cystathionine β-synthase: construction of a catalytic cycle with a pyridoxal model compound having an ionophore function**

*Tetrahedron 59 (2003) 4867*

Kazuyuki Miyashita, Hidenobu Murafuji, Hiroshi Iwaki, Eito Yoshioka and Takeshi Imanishi\*

Graduate School of Pharmaceutical Sciences, Osaka University, 1-6 Yamadaoka, Suita, Osaka 565-0871, Japan

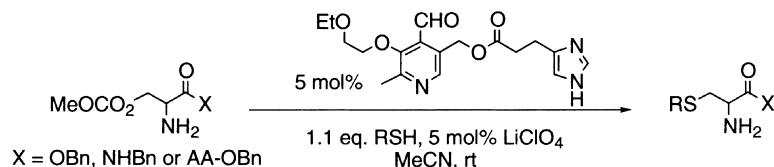


**Artificial model for cystathionine  $\beta$ -synthase: efficient  $\beta$ -replacement reaction with thiols employing a novel pyridoxal model compound having an imidazole function**

*Tetrahedron 59 (2003) 4873*

Kazuyuki Miyashita, Hidenobu Murafuji, Hiroshi Iwaki, Eito Yoshioka and Takeshi Imanishi\*

*Graduate School of Pharmaceutical Sciences, Osaka University, 1-6 Yamadaoka, Suita, Osaka 565-0871, Japan*

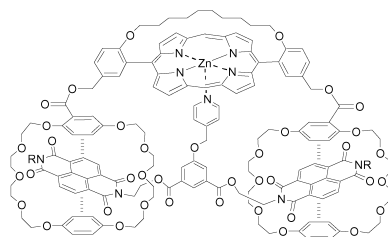


**A novel strapped porphyrin receptor for molecular recognition**

*Tetrahedron 59 (2003) 4881*

Xue-Bin Shao, Xi-Kui Jiang, Xiao-Zhong Wang, Zhan-Ting Li\* and Shi-Zheng Zhu\*

*Shanghai Institute of Organic Chemistry, Chinese Academy of Sciences, 354 Fenglin Lu, Shanghai 200032, People's Republic of China*



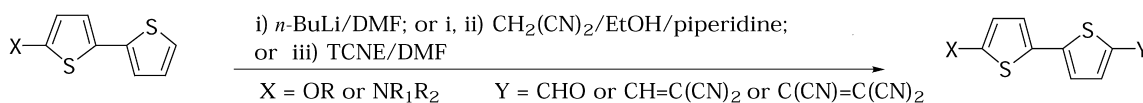
**Formylation, dicyanovinylolation and tricyanovinylolation of 5-alkoxy- and 5-amino-substituted 2,2'-bithiophenes**

*Tetrahedron 59 (2003) 4891*

M. Manuela M. Raposo<sup>a,\*</sup> and G. Kirsch<sup>b</sup>

<sup>a</sup>*Departamento de Química, Universidade do Minho, Campus de Gualtar, 4710-057 Braga, Portugal*

<sup>b</sup>*Laboratoire d'Ingénierie Moléculaire et Biochimie Pharmacologique, Université de Metz, Ile de Saulcy, F-57405 Metz Cedex, France*



**An electron density study on *cis*-1-(2-hydroxymethyl-cyclopentenyl)uracils**

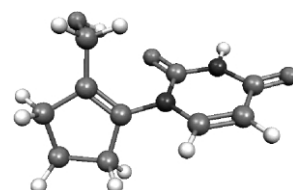
*Tetrahedron 59 (2003) 4901*

María J. González-Moa,<sup>a,b</sup> Carmen Terán<sup>b</sup> and Ricardo A. Mosquera<sup>a,\*</sup>

<sup>a</sup>*Departamento de Química Física, Facultad de Ciencias, Universidade de Vigo, Lagoas-Marcosende s/n, 36200-Vigo, Galicia, Spain*

<sup>b</sup>*Departamento de Química Orgánica, Facultad de Ciencias, Universidade de Vigo, Lagoas-Marcosende s/n, 36200-Vigo, Galicia, Spain*

The position of the double bond within the cyclopentene ring does not significantly affect the electron distribution of the base, but has an important influence on the conformational features of these compounds.



**Two new metabolites of a marine endophytic fungus (No. 1893) from an estuarine mangrove on the South China Sea coast**

*Tetrahedron 59 (2003) 4907*

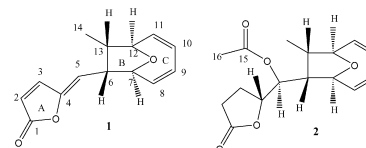
Guangying Chen,<sup>a,b</sup> Yongcheng Lin,<sup>a,\*</sup> Lu Wen,<sup>a</sup> L. L. P. Vrijmoed<sup>c</sup> and E. B. Gareth Jones<sup>c</sup>

<sup>a</sup>Department of Applied Chemistry, Zhongshan University, Guangzhou 510275, People's Republic of China

<sup>b</sup>Department of Chemistry, Hainan Normal University, HaiKou 571158, People's Republic of China

<sup>c</sup>Department of Biology and Chemistry, City University of Hong Kong, Hong Kong, People's Republic of China

The ethyl acetate extract of the endophytic fungus No. 1893 exhibited cytotoxicity toward NCI4460 and Bel-7402, and high activities against plumule and water spider. Two new lactones, 1893A (**1**) and B (**2**), together with 5-(*p*-hydroxybenzyl)hydantoin and two cyclodipeptides, cyclo-(Ser-Leu) and cyclo-(Phe-Gly), were isolated from the extract. The structures of **1** and **2** were determined by spectroscopic and X-ray diffraction experiments.



**Chiral biomimetic NADH models in the benzo[*b*]-1,6-naphthyridine series. A novel class of stable, reactive and highly enantioselective NADH mimics**

*Tetrahedron 59 (2003) 4911*

Jean-Luc Vasse, Vincent Levacher,\* Jean Bourguignon and Georges Dupas

Laboratoire de Chimie Organique Fine et Hétérocyclique associé au CNRS, IRCOF-INSA. B.P. 08 F-76131 Mont Saint Aignan Cédex, France

