

#### Tetrahedron Letters Vol. 47, No. 10, 2006

#### Contents

#### COMMUNICATIONS

The first observation in an organic medium and DFT calculation of the TMM radical anion generated pp 1501–1504 via a single electron reduction of a methylenecyclopropane

Hiroshi Ikeda,\* Hayato Namai, Nobuyuki Kato and Teruyo Ikeda



### Kehokorins A–C, novel cytotoxic dibenzofurans isolated from the myxomycetepp 1505–1508Trichia favoginea var. persimilis

Kouken Kaniwa, Takashi Ohtsuki, Yukinori Yamamoto and Masami Ishibashi\*



Kehokorins A–C (1–3), three novel dibenzofurans were isolated from the field-collected fruit bodies of myxomycete *Trichia favoginea* var. *persimilis*.

Sc(OTf)<sub>3</sub>-Catalyzed [3+2]-cycloaddition of aziridines with nitriles under solvent-free conditions Jie Wu,\* Xiaoyu Sun and Hong-Guang Xia

pp 1509-1512





Macrolactam formation catalyzed by the thioesterase domain of vicenistatin polyketide synthasepp 1529–1532Fumitaka Kudo, Takashi Kitayama, Katsumi Kakinuma and Tadashi Eguchi\*pp 1529–1532

HO.,, HO., HO., HO., HO., HO.

2

R = OEt or SNAC

1

#### Contents | Tetrahedron Letters 47 (2006) 1489-1499 1491 Thermochromic and solvatochromic zinc biladienones: dynamic equilibria of a metal complex pp 1533-1536 having a flexible framework sensitive to environment Kojiro Kita, Taiyo Tokuoka, Eriko Monno, Shigeyuki Yagi, Hiroyuki Nakazumi and Tadashi Mizutani\* Acid and base can be used to drive equilibrium between Heat or blue and yellow-brown zinc biladienones. Thermal Zn(OAc)<sub>2</sub> transformation was also possible, where the rate was Et<sub>3</sub>N concentration dependent. Blue comple Yellow-brown complex A convenient and versatile approach to 2,3-dihydro-4H-pyran-4-ones via tandem aldol pp 1537-1539 reaction-conjugate addition Bo Gao, Zhipeng Yu, Zhengyan Fu and Xiaoming Feng\*

2a-c

#### Diastereoselective reduction of $\beta$ -keto carbonyl compounds by cultured plant cells Kei Shimoda, Naoji Kubota, Hatsuyuki Hamada and Hiroki Hamada\*

 $1a, R_1 = CH_3, R_2 = H;$ 

**1b**,  $R_1 = H$ ,  $R_2 = CH_3$ ;  $1c, R_1 = H, R_2 = H.$ 



#### Efficient synthesis of 1,4-disubstituted 1,2,3-triazoles in ionic liquid/water system Ya-Bin Zhao, Ze-Yi Yan and Yong-Min Liang\*

## $N = N - R^{2} \xrightarrow{\text{NaN}_{3}, \text{CuI, } R^{2}X} R^{1} = \frac{\text{ArI, } L\text{-Proline, } \text{NaN}_{3}, \text{CuI}}{\text{Na}_{2}\text{CO}_{3}, \text{ [bmim]}[BF_{4}]/\text{H}_{2}\text{O}} R^{1} = \frac{\text{ArI, } L\text{-Proline, } \text{NaN}_{3}, \text{CuI}}{\text{Na}_{2}\text{CO}_{3}, \text{ [bmim]}[BF_{4}]/\text{H}_{2}\text{O}} R^{1} = \frac{\text{ArI, } L\text{-Proline, } \text{NaN}_{3}, \text{CuI}}{\text{Na}_{2}\text{CO}_{3}, \text{ [bmim]}[BF_{4}]/\text{H}_{2}\text{O}} R^{1} = \frac{\text{ArI, } L\text{-Proline, } \text{NaN}_{3}, \text{CuI}}{\text{Na}_{2}\text{CO}_{3}, \text{ [bmim]}[BF_{4}]/\text{H}_{2}\text{O}} R^{1} = \frac{\text{ArI, } L\text{-Proline, } \text{NaN}_{3}, \text{CuI}}{\text{Na}_{2}\text{CO}_{3}, \text{ [bmim]}[BF_{4}]/\text{H}_{2}\text{O}} R^{1} = \frac{\text{ArI, } L\text{-Proline, } \text{NaN}_{3}, \text{CuI}}{\text{Na}_{2}\text{CO}_{3}, \text{ [bmim]}[BF_{4}]/\text{H}_{2}\text{O}} R^{1} = \frac{\text{ArI, } L\text{-Proline, } \text{NaN}_{3}, \text{CuI}}{\text{Na}_{2}\text{CO}_{3}, \text{ [bmim]}[BF_{4}]/\text{H}_{2}\text{O}} R^{1} = \frac{\text{ArI, } L\text{-Proline, } \text{NaN}_{3}, \text{CuI}}{\text{Na}_{2}\text{CO}_{3}, \text{ [bmim]}[BF_{4}]/\text{H}_{2}\text{O}} R^{1} = \frac{\text{ArI, } L\text{-Proline, } \text{NaN}_{3}, \text{CuI}}{\text{Na}_{3}\text{CO}_{3}, \text{ [bmim]}[BF_{4}]/\text{H}_{2}\text{O}} R^{1} = \frac{\text{ArI, } L\text{-Proline, } \text{NaN}_{3}, \text{CuI}}{\text{Na}_{3}\text{CO}_{3}, \text{ [bmim]}[BF_{4}]/\text{H}_{2}\text{O}} R^{1} = \frac{\text{ArI, } L\text{-Proline, } \text{NaN}_{3}, \text{CuI}}{\text{Na}_{3}\text{CO}_{3}, \text{ [bmim]}[BF_{4}]/\text{H}_{2}\text{O}} R^{1} = \frac{\text{ArI, } L\text{-Proline, } \text{NaN}_{3}, \text{CuI}}{\text{Na}_{3}\text{CO}_{3}, \text{ [bmim]}[BF_{4}]/\text{H}_{2}\text{O}} R^{1} = \frac{\text{ArI, } L\text{-Proline, } \text{NaN}_{3}, \text{CuI}}{\text{Na}_{3}\text{CO}_{3}, \text{ [bmim]}[BF_{4}]/\text{H}_{2}\text{O}} R^{1} = \frac{\text{ArI, } L\text{-Proline, } \text{NaN}_{3}, \text{CuI}}{\text{Na}_{3}\text{CO}_{3}, \text{ [bmim]}[BF_{4}]/\text{H}_{2}\text{O}} R^{1} = \frac{\text{ArI, } L\text{-Proline, } \text{NaN}_{3}, \text{CuI}}{\text{Na}_{3}\text{CO}_{3}, \text{[bmim]}[BF_{4}]/\text{Na}_{3} = \frac{\text{ArI, } L\text{-Proline, } \text{NaN}_{3}, \text{CuI}}{\text{Na}_{3}\text{CO}_{3}, \text{[bmim]}[BF_{4}]/\text{Na}_{3} = \frac{\text{ArI, } L\text{-Proline, } \text{NaN}_{3}, \text{CuI}}{\text{Na}_{3}\text{CO}_{3}, \text{[bmim]}[BF_{4}]/\text{Na}_{3} = \frac{\text{ArI, } L\text{-Proline, } \text{ArI, } L\text$

A copper(I) catalyst in a mixture of the ionic liquid [bmim][BF<sub>4</sub>] and water can effect a three-component reaction of halides, sodium azide and alkynes to form 1,4-disubstituted 1,2,3-triazoles in good to high yields.



3a-c

pp 1545-1549

#### Helical polycyclic aromatics containing thiophenes: synthesis and properties

Jian Pei,\* Wen-Yu Zhang, Jing Mao and Xing-Hua Zhou

**i)**†

pp 1555-1558

A novel and highly efficient protocol for Markovnikov's addition using ionic liquid as catalytic green solvent

Jian-Ming Xu, Wei-Bo Wu, Chao Qian, Bo-Kai Liu and Xian-Fu Lin\*

A novel and highly efficient protocol for Markovnikov's addition using ionic liquid as catalytic green solvent is described.

### Novel highly selective fluorescent chemosensors for Zn(II)

Xiang-Ming Meng, Man-Zhou Zhu, Lei Liu\* and Qing-Xiang Guo\*



M. Carmen Galan and Sarah E. O'Connor\*



The iridoid natural product secologanin was isolated in good yield from Lonicera tatartica and subjected to a series of semi-synthetic reactions in which the ester and vinyl moieties were modified. Secologanin is a key substrate in the terpene indole alkaloid biosynthetic pathway and these derivatives will be used to probe the substrate specificity of the enzymes that comprise this pathway.



 $Nu-H + R_1 O$   $(bmim)BF_4 O Nu$ 

 $Nu-H = \bigvee_{n=1}^{N} NH \bigvee_{n=1}^{N} NH \bigvee_{n=1}^{N} NH \bigvee_{n=1}^{N} NH$ 

pp 1559-1562

pp 1563-1565

pp 1551-1554

B B

### Six-membered bis(azaphosphorinane), readily available ligand for highly enantioselective asymmetric hydrogenations

Yongjun Yan and Xumu Zhang\*





### 1-Butyl-2,3-trimethyleneimidazolium bis(trifluoromethylsulfonyl)imide ([b-3C-im][NTf<sub>2</sub>]): a new, stable ionic liquid

Jen-Yen Cheng and Yen-Ho Chu\*



[b-3C-im][NTf2]

 $(\mathbf{J}^{+})$ 

pp 1581-1584

pp 1575-1579

Catalytic cyanosilylation of ketones using organic catalyst 1,1,3,3-tetramethylguanidine Lijia Wang, Xiao Huang, Jun Jiang, Xiaohua Liu and Xiaoming Feng\*

$$\begin{array}{c} \mathsf{NH} \\ \mathsf{Me}_2 \mathsf{N} \mathsf{NMe}_2 \quad (0.1 \text{ mol } \%) \\ \mathsf{TMSCN} (1.2 \text{ equiv }), 25 \ ^\circ \mathsf{C}, \text{ solvent free} \quad \mathsf{R}_1 \quad \mathsf{R}_2 \end{array} \xrightarrow{\mathsf{OTMS}}$$

pp 1567-1569

#### A stereoselective synthesis of the hexahydroazepine core of (–)-balanol Sadagopan Raghavan<sup>\*</sup> and Ch. Naveen Kumar



A concise and stereoselective synthesis of (-)-balanol is disclosed.

Synthesis of the first pseudo-phosphonopeptides derived from (ferrocenyl)aminomethanephosphonous pp 1589–1591 acids

Jarosław Lewkowski,\* Romuald Skowroński, Dorota Krasowska and Rafał Karpowicz



### Studies on the diastereoselectivity in the IMDA reactions of terminally activated (E,E,E)-nona-1,6,8-trienes

Takahiro Suzuki, Natsumi Tanaka, Takehiko Matsumura, Yosuke Hosoya and Masahisa Nakada\*



**Titanocene(III) mediated 8-***endo* radical cyclizations for the synthesis of eight-membered cyclic ethers pp 1599–1601 Samir Kumar Mandal and Subhas Chandra Roy\*



pp 1585-1588

pp 1593-1598

#### Total synthesis of natural (+)-membrenone C and its 7-epimer

J. S. Yadav,\* R. Srinivas and K. Sathaiah



SmI<sub>2</sub>-Promoted novel tandem elimination and coupling reactions of aliphatic imides with carbonyl compounds: application to the synthesis of *dl*-isoretronecanol

pp 1607-1611

pp 1613-1616

Masayuki Kabata, Takamasa Suzuki, Kunihiko Takabe and Hidemi Yoda\*



#### Stereoselective allylation of azirines with allylindium reagents

Tsunehisa Hirashita, Shinya Toumatsu, Yuri Imagawa, Shuki Araki\* and Jun-ichiro Setsune



Oxidative rearrangement of 2-alkoxy-3,4-dihydro-2H-pyrans: stereocontrolled synthesis of 4,5-cis-disubstituted tetrahydrofuranones

pp 1617-1619

Alan Armstrong<sup>\*</sup> and Hunsuk Chung



pp 1603-1606

#### 2-Allyloxyphenyl glycoside as a new and stable type of glycosyl donors

Jinq-Chyi Lee, Guan-Rong Pan, Suvarn S. Kulkarni, Shun-Yuan Luo, Chun-Chen Liao and Shang-Cheng Hung\*



A high-yielding coupling of a new and stable type of glycosyl donors, namely 2-allyloxyphenyl glycoside, with a variety of alcohols via NIS/TfOH reagent combination as effective activators at room temperature is described here.

#### Synthesis of methyl 2-oxo-5-vinyl-2,5-tetrahydrofuran-3-carboxylate

Maximilian A. Silvestri, Chang He, Anita Khoram and Salvatore D. Lepore\*



A synthesis of isoxazoles through the reaction of activated acetylenes and alkyl 2-nitroethanoates in the presence of triphenylphosphine

Issa Yavari\* and Loghman Moradi



Short-step synthesis of droloxifene via the three-component coupling reaction among aromatic pp 1631-1635 aldehyde, cinnamyltrimethylsilane, and β-chlorophenetole

Yoshiyuki Sano and Isamu Shiina\*



pp 1625-1626



pp 1627-1629

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### The synthesis of indanones related to combretastatin A-4 via microwave-assisted Nazarov cyclization of chalcones

Nicholas J. Lawrence,\* E. Simon M. Armitage, Benjamin Greedy, Darren Cook, Sylvie Ducki and Alan T. McGown



### Suppression of epimerization due to selectivity leakage: an application towards the total synthesis pp 1641–1644 of (–)-centrolobine

Cheng-Hsia Angeline Lee and Teck-Peng Loh\*



#### Rhamnosylation of lignans by a Streptomyces strain

Patrik Eklund,\* Toni Holmström, Lamis Al-Ubaydy, Rainer Sjöholm and Juha Hakala



### A short synthesis of 3,3-di(hetero)arylpropylamines obtained from bis-(hetero)aryl ketones via palladium catalysis

pp 1649-1651

Domnic Martyres\* and Frank Schmiedt



pp 1637-1640

pp 1645-1648

#### An acid-catalyzed Michael-aldol reaction

I. David Reingold,\* Charles Bowerman, Melissa John, Robert S. Walters, Jr., Bevin C. Daglen, Anna M. Butterfield and Milan Gembický



A convenient semicarbazide resin for the solid-phase synthesis of peptide ketones and aldehydes pp 1657–1661 Jesús Vázquez and Fernando Albericio\*



Use of a semicarbazide resin for the solid-phase preparation of peptide ketones and aldehydes led to optimal results in terms of both purity of the final product and overall yield. The resin was prepared without complication by activation of the commercially available aminomethyl polystyrene with CDI at room temperature, followed by treatment with *tert*-butyl carbazate. Furthermore, the TNBSA colorimetric assay has been adapted for checking the incorporation of the carbonyl moiety onto hydrazine-based resins.

### Demethoxycarbonylation and oxidation of $13^2(S/R)$ -hydroxy-chlorophyll *a* to $13^2$ -demethoxy-carbonyl- $13^2$ -oxo-chlorophyll *a* and Mg-purpurin-18 phytyl ester

Paavo H. Hynninen,<sup>\*</sup> Tuomo S. Leppäkases and Markku Mesilaakso



#### Addition of activated olefins to cyclic *N*-acyliminium ions in ionic liquids Ronaldo Aloise Pilli,\* Luís Gustavo Robello, Nilton Soares Camilo, Jairton Dupont, Alexandre Augusto Moreira Lapis and Brenno A. da Silveira Neto



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pp 1669–1672

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### Quality control of solid-phase synthesis: <sup>13</sup>C PST/MAS NMR analysis on non-destructed SynPhase lantern

Takayoshi Arai,\* Akitsugu Fujiwara, Masahiko Watanabe, Naota Yokoyama, Teruaki Fujito, Kenzo Deguchi and Akira Yanagisawa



# OTHER CONTENTS Calendar Guide for Authors

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𝔅 + Supplementary data available via ScienceDirect

#### COVER

A reasonably designed Ru(salen)(CO) complex catalyzes highly enantioselective aziridination of olefins using 2-(trimethylsilyl)ethanesulfonyl (SES) azide as a nitrene precursor to give the corresponding aziridines. It has been reported by Komatsu et al. that *N*-SES group can be removed without racemization. *Tetrahedron Letters* **2006**, *47*, 1571–1574. © 2006 T. Katsuki. Published by Elsevier Ltd.

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